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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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JANUARY 1956
Volume 7 No. 1

ASHEVILLE: 1956

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NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 1

JANUARY 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

West of the Continental Divide a rather persistent flow of warm, moist air from the Pacific was responsible for an unseasonably mild, wet, cloudy month and frequent occurrences of fog. Frequent rains produced unusually heavy monthly totals in the Pacific States and resulted in additional flooding in California, although damage was much less than in December. Fog was three times more frequent than usual at several southern California stations, and Phoenix, Ariz., had its cloudiest January since the beginning of records in 1876. The snowpack in the Cascade and Sierra Nevada Mountains, already above normal at the end of December, continued to increase during the month, thereby brightening prospects for irrigation water.

The month was abnormally cold, dry, and sunny in most sections east of the Rockies. The main exception was in New England where temperatures and precipitation averaged well above normal and the month was among the cloudiest Januaries on record. Many stations east of the Rockies reported near record dryness. The deficiency was most serious in the lower Great Plains where small grains and pastures urgently needed more moisture, even though rains late in the month were decidedly beneficial. Sault Ste. Marie, Mich., reported 50 percent of possible sunshine, the sunniest January on record there, and Jacksonville, Fla., reported 73 percent which equaled its previous record.

Frequent frosts and freezes during the first half of the month damaged tender truck in Florida. During the third week an influx of Arctic Air reduced temperatures to subzero levels in north-central areas and ushered in blizzard conditions in the Dakotas on the 16th.

TEMPERATURE.--West of the Continental Divide temperatures averaged as much as 10° above normal, and Tucson, Ariz., experienced the warmest January since 1867. Grand Junction, Colo., also had its warmest January. Above-normal temperatures persisted until the last few days of the month, but no unusual extremes were recorded.

Above-normal temperatures persisted throughout the month in New England, with the monthly anomalies ranging up to 12° at Caribou, Maine. Temperatures were also mild in the Great Lakes region, except for a cold third week. In other areas east of the Rockies monthly averages were below normal, with greatest departures of 6° to 9° occurring along the south Atlantic Coast. In most of the Southeast below-normal temperatures persisted throughout the month and many stations there had their coldest January since either 1911 or 1940. Mimai, Fla., had an average temperature of 62.6° for its second coldest January, and frost in nearby areas damaged tender vegetables on the 9th and 15th.

PRECIPITATION.--The heaviest precipitation fell in the Pacific States where monthly totals ranged up to 32.93 inches at Valsetz, Oreg., 32.75 inches at Pit River Powerhouse #5, Calif., and 31.04 inches at Cougar, Wash. Rains were frequent along the central and north Pacific Coast, occurring at Eureka, Calif., on all but 5 days, but most of the monthly amounts in the south fell near the end of the month. Four to 9 inches fell along the southern coast on the 25th and 26th, 9 to 13 inches in the mountains, and one-half to 2 inches in the desert. Damage from resulting floods in the Los Angeles area was estimated at several million dollars. Portland, Oreg., had 14.11 inches for its second wettest January on record. In Los Angeles, Calif., 8.07 inches of rain fell during January for the greatest record for the month and the second greatest of any month; also, 6.19 inches on the 25th-26th was the third greatest 24-hour amount on record there.

East of the Rockies precipitation was less than 50 percent of normal in southern Texas, in a belt extending from western Texas through Michigan, and also in southeastern Louisiana and large portions of Mississippi, Alabama, Georgia, the Carolinas, Virginia, and Pennsylvania. The longest dry spell at St. Louis, Mo., 46 consecutive days with no measurable rain, ended on the 18th, and one of 30 days duration which set a new record at Baltimore, Md., ended on the 9th. Virtually all the month's precipitation in the Northeast fell during the period 8th through the 15th as an area of low pressure hovered off the coast. Heavy amounts (1 to over 4 inches) fell along the coast and moderate amounts (0.05 inch to over 1 inch) over the remainder of the Middle Atlantic and New England States.

In the South nearly all rains came during the latter half of the month. For the week ending the 23d, most of the South received an inch or more, and during the last week 1 to over 4 inches fell in most of Arkansas and Tennessee.

SNOWFALL.--The snow cover at the beginning of the month extended southward to northern Nevada, Utah, and northwestern Colorado in the Far West, while east of the Rockies it extended from the Dakotas to the Atlantic Coast. At the end of the month the cover extended over most of Nevada and the northern portions of Arizona and New Mexico, and east of the mountains over the area north of a line joining Albuquerque, N. Mex., and Elkins, W. Va.; Atlantic Coastal areas were bare as far north as southern New England. In the Far West a heavy snowpack ranged up to 200 inches at Paradise Ranger Station, Wash., and 95 inches at Silver Lake, Utah. The cover was also heavy in north-central areas, with 37 inches at Houghton, Mich. In the Northeast depths were below normal as a result of the mild weather. The heaviest snowstorm east of the Rockies occurred as the month closed when up to 10 inches fell over an area extending from Kansas and Nebraska eastward over the southern Great Lakes region, the Ohio and middle Mississippi Valleys, and Northeast.

DESTRUCTIVE STORMS.--Storm losses were mostly limited to states along the north Atlantic Coast and the north Pacific Coast. Mainly responsible for damage in the former area was a large low pressure area which lingered off the Atlantic Coast from the 8th to the 15th. Glaze caused

$1,000,000 damage in Pennsylvania on the 8th and minor damage in New England, New Jersey, and Virginia. Winds and tides from the 8th to 12th caused additional damage of $50,000 along the North Carolina coast and small amounts along the Virginia and New England coasts.

In Oregon high winds, rain, and snow from the 4th to the 6th caused $350,000 damage, winds and rain from the 14th to the 16th an additional $150,000, glaze in the north-central Columbia Basin on the 18th about $10,000, and snow in the western portion on the 26th and 27th at least $12,000. In the state of Washington rain and snow from the 14th to the 23d was blamed for losses believed to amount to several hundred thousand dollars.

In Faulkner and White Counties, Ark., on the 28th a tornado injured 28 persons and damaged property to the extent of $27,000.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

JANUARY 1956

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			*°F*			*In.*		*In.*
Alabama	Livingston	77	6	Haleyville	11	2	Waterloo	6.62	Centreville	1.30
Arizona	Gila Bend	90	10	Alpine	-11	30	Bright Angel RS	4.63	Ehrenberg	.00
Arkansas	2 Stations	79	28+	Gravette	4	16	Wilson	9.22	Lead Hill	.69
California	do	85	3+	Boca	-22	30	Pit River PH 5	32.75	4 Stations	.00
Colorado	Holly	79	5	Sugarloaf	-29	25	Wolf Creek Pass 4W	10.67	2 Stations	.08
Connecticut	6 Stations	47	9+	Falls Village	-8	2	Pauchaug Forest	5.29	Bulls Bridge Dam	1.64
Delaware	Lewes	64	30	Newark College Farm	5	25	Selbyville	3.81	Dover	2.18
Florida	Loxahatchee	85	23	Jasper 9ESE	17	1	Mt. Pleasant	6.60	St. Petersburg	.08
Georgia	Brunswick CAA AP	80	30	Blairsville Exp. Sta.	7	14	Thomasville	5.71	Thomaston 2S	.43
Idaho	2 Stations	60	4+	Island Park Dam	-44	31	Idaho City 11SW	7.26	Idaho Falls 42NW	.64
Illinois	3 Stations	65	5	Stockton	-13	21	Brookport Dam 52	3.43	2 Stations	.11
Indiana	Jeffersonville	62	6	Greensburg 3SW	-14	26	Tell City	4.07	Whiting	.33
Iowa	3 Stations	65	5	3 Stations	-27	21+	Osage	1.44	Eddyville	T
Kansas	2 Stations	80	5	Cedar Bluff Dam	-17	30	Ottawa	1.82	Attica	.12
Kentucky	Barbourville	68	6	2 Stations	3	26	Munfordville	7.55	Shepherdsville	1.49
Louisiana	5 Stations	82	6+	Converse	15	9	Buras 2NNW	6.68	New Orleans Dublin	1.40
Maine	West Buxton 2NNW	54	9	Old Town CAA AP	-28	1	Bar Harbor	8.26	Caribou WB Airport	2.49
Maryland	Frederick Police Brks	65	30	Oakland 1SE	-11	28	Oakland 1SE	3.89	Stevensville 1W	1.52
Massachusetts	Worcester	48	4	Stockbridge	-13	2	Blue Hill	9.56	Amherst	1.75
Michigan	Dowagiac	48	5	Kenton U. S. Forest	-26	22	Houghton CAA AP	3.16	Houghton Lake 3NW	.19
Minnesota	2 Stations	46	5	3 Stations	-32	22+	Hallock	1.50	St. James Filt Pl.	.16
Mississippi	3 Stations	78	6+	2 Stations	15	14	Corinth	6.80	Russell 2W	1.37
Missouri	Waynesville	76	5	do	-8	31	Kennett	5.68	Gallatin 2NE	.04
Montana	2 Stations	59	4+	Wisdom	-42	31	Haugan	4.64	5 Stations	T
Nebraska	Benkelman	71	4	Broken Bow 2W	-21	18	Geneva	1.26	Harrison 10NE	.06
Nevada	Lathrop Wells	74	11	2 Stations	-27	31	Glenbrook	6.90	Sarcobatus	.00
New Hampshire	3 Stations	50	9	Fabyan	-28	1	Greenville	8.68	North Stratford	1.72
New Jersey	Millville CAA AP	59	30	Layton 3NW	-3	2	Clayton	4.56	Canoe Brook	1.23
New Mexico	Bitter Lakes WL Ref.	80	28	Gavilan	-23	30	Bateman Ranch	3.25	10 Stations	.00
New York	Middleburg 4SW	50	5	Saranac Lake	-24	1	Windham 2E	5.06	Theresa	.54
North Carolina	Sloan 3S	76	30	Boone	0	10	Hatteras WB City	4.41	Yanceyville 2NNE	.61
North Dakota	2 Stations	53	5	Langdon Exp. Farm	-32	19	Walhalla	2.33	Sentinel Butte 20S	.02
Ohio	do	61	6	2 Stations	-9	24	Racine Dam 23	3.26	Hoytville 2NE	.94
Oklahoma	4 Stations	81	5	Kenton	-12	30	Carter Tower	3.01	Burbank	T
Oregon	Echo	62	6	Seneca	-32	31	Valsetz	32.93	Baker CAA AP	1.03
Pennsylvania	2 Stations	57	7	Du Bois 7E	-13	26	Kregar 4SE	3.95	Bear Gap	.75
Rhode Island	Block Island WB AP	47	3	Greenville	2	2	Woonsocket	6.82	Block Island WB AP	3.59
South Carolina	Sumter	78	6	Chester 2SW	7	9	Charleston WB AP	2.56	Pelion	1.10
South Dakota	3 Stations	64	8+	Pukwana 3W	-29	21	Timber Lake	1.52	Ludlow 2NW	.04
Tennessee	Jackson CAA AP	72	5+	2 Stations	4	24	Johnsonville Stm. Pl.	9.36	Mountain City	1.74
Texas	2 Stations	92	29+	Spearman	-1	18	Goose Creek	7.34	Several Stations	.00
Utah	La Verkin	70	10	Woodruff	-35	31	Alta	13.70	Fruita	T
Vermont	Chelsea	50	10	Lemington	-31	1+	Somerset	5.06	Lemington	.81
Virginia	2 Stations	70	30	Burkes Garden	-6	27	Rose Hill	3.42	Alta Vista	.42
Washington	Richland	62	6+	Republic	-29	31	Cougar 1E	31.04	Ephrata CAA AP	1.17
West Virginia	Madison	68	30	Bayard	-12	28	Alpena 1NW	6.00	Princeton	1.07
Wisconsin	Lake Geneva	47	13	2 Stations	-31	22	Oconto	1.14	Burlington	.16
Wyoming	6 Stations	65	10+	Bondurant	-39	31	Snake River	6.71	5 Stations	T
Puerto Rico	Utuado	93	19	Cidra 3E	48	14	Dorado 4W	15.06	Josefa	.25

+ And also on a later date or dates.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

Table 2

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max 90° F or above	No. of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, sunrise to sunset	Percent of possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p h		M p h						Tenths	
ALABAMA																																
Birmingham	610	994.1	1019.9	52	32	41.6	-3.6	71	6	21	[illegible]+	0	15	[illegible]	[illegible]	[illegible]	-3.13	0.82	[illegible]	[illegible]	T	[illegible]	[illegible]	N	37	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mobile	211	1011.2	1019.5	60	38	49.0	3.7	73	6+	25	31	0	[illegible]	37	[illegible]	5.16	.14	2.23	[illegible]	[illegible]	0.0	0	[illegible]	N				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Montgomery	196	1011.9	1019.5	56	31	44.7	[illegible]	[illegible]	[illegible]	22	1	0	11	33	[illegible]	[illegible]	-2.81	.92	[illegible]	[illegible]	[illegible]	[illegible]	8.4	NW	[illegible]	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ARIZONA																																
Flagstaff	6993		-	47	20	33.2	7.9	57	8+	4	10	0	30			1.62	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]										
Phoenix	1111	976.3	1015.7	69	43	56.0	6.3	80	11	31	[illegible]	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	E	*[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Prescott	5014	846.9	1017.2	56	29	42.2	6.9	66	7+	16	30	0	[illegible]			.33	[illegible]	[illegible]	5	0	1.[illegible]	[illegible]	[illegible]	SW	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tucson	2558	926.2	1014.7	70	42	56.1	6.1	79	4+	33	[illegible]	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	1	[illegible]	0	[illegible]	ESE	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Winslow	4880	851.0	1016.1	55	28	41.4	4.7	66	6	14	4	0	22	[illegible]	[illegible]	[illegible]	[illegible]	.26	5	0	1.9		7.3	SE	*1[illegible]	SSW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Yuma	199	1010.2	1015.3	74	44	59.0	3.7	79	8+	38	2	0	0	[illegible]	[illegible]	.04	[illegible]	[illegible]	2	0	[illegible]	0	[illegible]	NNE	26	NW	[illegible]	8	[illegible]	[illegible]	[illegible]	[illegible]
ARKANSAS																																
Fort Smith	455	1003.7	1021.1	48	27	37.5	2.5	71	26	15	20	0	24	27	69	1.32	1.57	.58	6	0	1.0	3	[illegible]	E	29	SW	[illegible]	12	[illegible]	[illegible]	[illegible]	[illegible]
Little Rock	257	1007.5	1020.9	49	31	40.0	1.8	77	28	13	24	0	21	23	66	5.77	.65	3.63	6	2	2.8	2	9.1	NNE	[illegible]	W	[illegible]	12	[illegible]	16	[illegible]	[illegible]
Texarkana	361	- -	-	54	34	43.9	2.0	79	29	23	[illegible]	0	17			[illegible]	[illegible]	1.39	10	1	1.0	1										
CALIFORNIA																																
Bakersfield	489	1000.7	1019.0	60	42	51.2	1.3	70	15	32	1	0	[illegible]	35	[illegible]	[illegible]	.12	.10	[illegible]	0	.0	0	[illegible]	NW	*[illegible]	N	[illegible]+	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bishop	4108	873.0	1015.6	54	24	39.2	1.3	61	5	13	[illegible]	0	27			[illegible]	[illegible]	[illegible]	4	0	3.0	3						[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Blue Canyon	5280	837.1	1017.3	39	29	34.0	2.2	51	11	18	29	0	24			22.16	13.29	[illegible]	[illegible]	0	73.5	21						[illegible]	[illegible]	[illegible]		
Burbank	699	990.9	1017.1	65	44	54.3	1.7	78	12	35	8	0	[illegible]	[illegible]	[illegible]	6.13	3.78	[illegible]	7	0	0	0	[illegible]	S	*[illegible]	N	16	1	[illegible]	[illegible]	[illegible]	[illegible]
Eureka (U)	43	1012.9	1015.2	55	44	49.1	1.9	61	[illegible]	31	20	0	1			11.51	5.31	[illegible]	[illegible]	1	0	0	[illegible]		[illegible]	SW	26	[illegible]	[illegible]	21	[illegible]	[illegible]
Fresno	331	1006.8	1018.5	55	41	[illegible]	[illegible]	67	26	[illegible]	29	0	1	[illegible]	[illegible]	2.41	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]	SE	[illegible]	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Los Angeles (U)	312	---	- - -	64	48	56.0	1.0	77	3	43	[illegible]+	0	0	41	69	8.39	6.01	[illegible]	[illegible]	0	0	[illegible]	[illegible]		[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Los Angeles	[illegible]	1013.5	1017.1	62	47	54.6	1.4	75	[illegible]	41	8	0	0	[illegible]	[illegible]	8.07	[illegible]	[illegible]	7	0	0	0	[illegible]	W	*11	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mt. Shasta (R)	3544	889.9	1016.1	40	29	34.6	1.6	51	11	7	31	0	18	-		12.12	7.58	[illegible]	21	0	[illegible]	10						2	1	[illegible]		
Oakland	[illegible]	1018.3	1018.6	55	43	49.2	[illegible]	60	[illegible]+	34	[illegible]	0	0	15	85	7.60	4.30	[illegible]	[illegible]	1	0	0	5.5	SE	*32	SW	7	3	[illegible]	26	[illegible]	
Red Bluff	341	1004.7	1017.5	52	42	47.0	1.9	64	11	[illegible]	29	0	[illegible]	[illegible]	82	8.63	4.90	[illegible]	[illegible]	0	T	0	[illegible]	SSE	[illegible]	SE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sacramento	17	1016.9	1017.9	53	42	47.5	3.2	58	6	32	29+	0	[illegible]	44	88	6.10	[illegible]	1.34	17	0	0	0	[illegible]	SE	[illegible]	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sandberg (R)	4517	862.5	1016.9	51	[illegible]	44.4	4.6	62	12	27	29	0	8			1.64	-.66	.98	[illegible]	0	[illegible]	2						[illegible]	[illegible]	[illegible]		
San Diego	19	1013.9	1017.1	63	48	55.4	.5	75	3	41	3	0	0	46	73	1.65	-.04	1.12	[illegible]	0	0	0	[illegible]	S	[illegible]	S	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
San Francisco (U)	52	--	----	56	48	51.7	1.6	59	3+	43	29	0	0			8.72	4.69	[illegible]	16	1	0	0	[illegible]	-	29	S	[illegible]+	3	1	24	[illegible]	[illegible]
San Francisco	1	1017.3	1018.2	55	45	49.9	2.0	60	13	[illegible]	31	0	0	17	89	8.78	5.31	2.07	[illegible]	0	0	0	[illegible]	SE	40	S	[illegible]	[illegible]	[illegible]	26	[illegible]	
Santa Maria	238	1009.5	1018.4	60	41	50.8	.4	61	11	32	29	0	[illegible]	46	81	2.54	.17	1.92	12	0	0	0	[illegible]	WNW	*23	SSE	[illegible]+	[illegible]	[illegible]	23		
COLORADO																																
Alamosa	7538	769.4	1022.2	41	5	23.0	6.1	57	5+	-10	19	0	31			.50	.35	[illegible]	4	0	[illegible]	7						11	[illegible]	[illegible]		
Colorado Springs	6173	808.3	1019.1	45	18	31.4	[illegible]	69	5	-11	30	0	31	11	51	[illegible]	[illegible]	[illegible]	5	0	12.7	[illegible]	[illegible]	SE	*33	NW	1	[illegible]	9	11	[illegible]	[illegible]
Denver	5292	835.4	1016.7	47	21	34.0	5.3	72	5	[illegible]	31	0	29	[illegible]	49	.39	.11	.32	5	0	6.3	5	[illegible]	S	31	W	[illegible]	[illegible]	9	13	[illegible]	64
Grand Junction	4849	859.5	1018.5	46	27	36.7	12.7	60	6	[illegible]	5	0	23	23	61	1.07	[illegible]	[illegible]	6	0	3.2	1	[illegible]	E	36	SW	21	[illegible]	8	16	[illegible]	[illegible]
Pueblo	4639	855.7	1019.5	46	14	29.7	.3	70	5+	-16	30	0	31	[illegible]	56	.74	.36	[illegible]	6	0	[illegible]	7	[illegible]	W	41	SW	27	10	9	12	[illegible]	72
CONNECTICUT																																
Bridgeport	7	1012.3	-	36	25	30.8	1.6	47	[illegible]	8	2	0	25			2.11	1.32	.60	10	0	1.0	3	-		-	-		[illegible]	6	[illegible]	[illegible]	
Hartford	169	1006.8	1013.0	35	23	28.9	1.9	46	9	1	2	0	26	[illegible]	70	[illegible]	.44	.70	18	0	[illegible]	1	12.9	NW	31	NW	20	[illegible]	6	17	[illegible]	[illegible]
New Haven	6	1011.9	1012.5	36	25	30.2	1.1	47	9	6	2	0	26			3.49	.40	[illegible]	18	0	[illegible]	6	9.0	-	29	NE	9	[illegible]	6	16	[illegible]	[illegible]
DELAWARE																																
Wilmington	73	1011.0	1014.2	39	25	31.8	1.5	52	30	14	25+	0	26	23	71	2.61	.95	.74	11	0	[illegible]	[illegible]	10.3	NNW				7	12	[illegible]	[illegible]	
DIST. OF COLUMBIA																																
Washington (U)	72	-- --	-----	41	29	34.9	-1.6	63	30	[illegible]	28	0	23			[illegible]	-.85	.82	13	0	[illegible]	[illegible]	[illegible]	-	31	NW	[illegible]					
Wash. Nat'l. AP	14	[illegible]	1015.4	46	29	34.5	-1.7	63	30	[illegible]	24+	0	25	24	67	1.99	-1.25	[illegible]	[illegible]	0	[illegible]	3	[illegible]	NNW	[illegible]	NW	30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FLORIDA																																
Apalachicola (U)	13	1016.9	--	59	42	50.2	5.0	73	7	30	9	0	[illegible]			[illegible]	.50	1.78	6	[illegible]	0	0	[illegible]		26	E	22	10	9	[illegible]	[illegible]	[illegible]
Daytona Beach	31	1015.7	1017.3	65	40	52.5	7.0	80	30	29	9+	0	4	40	[illegible]	[illegible]	.15	2.08	5	2	.0	0	10.3	WNW	*50	SSW	[illegible]	20	3	8	[illegible]	
Fort Myers	15	1016.9	-	71	47	58.7	[illegible]	82	31	33	17	0	0			.57	.95	.30	5	2	0	0	[illegible]		*[illegible]	NNE	1+	[illegible]	[illegible]	9	[illegible]	
Jacksonville (U)	18	------	---	62	41	51.8	-5.5	79	30	29	9	0	1			[illegible]	[illegible]	1.65			0	0										
Jacksonville	24	1016.2	1017.6	62	38	50.2	-5.7	79	30	27	9	0	8	37	68	[illegible]	[illegible]	2.02	4	2	.0	[illegible]	9.0	NW	22	NW	1	16	7	6	[illegible]	[illegible]
Key West (U)	9	1015.8	-	74	62	67.9	[illegible]	[illegible]	[illegible]	51	15	0	0			.27	1.27	.19	[illegible]	[illegible]	0	[illegible]	[illegible]		[illegible]	NW	[illegible]	4	[illegible]	7	1	1
Lakeland (U)	214	--	-	66	47	56.4	5.6	79	30	32	9	0	[illegible]			1.13	[illegible]	1.28	4	1	0	0						[illegible]	[illegible]	6		
Miami (U)	8	---- -	----	70	55	62.6	[illegible]	79	17	39	14	0	0			1.30	[illegible]	[illegible]	[illegible]	1	0	[illegible]			31	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Miami	8	1015.6	1016.8	72	53	62.7	-5.6	81	23+	39	14	0	0	52	71	1.74	[illegible]	[illegible]	4	1	[illegible]	[illegible]	[illegible]	NNW	25	SW	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]
Miami Beach	9	-----	-	72	57	64.4	[illegible]	80	21	42	14	0	0			1.30	[illegible]	[illegible]	4	1	[illegible]	0	[illegible]					11	[illegible]	[illegible]		
Orlando	106	1013.2	1017.8	67	43	55.1	[illegible]	81	30	31	9	0	2	[illegible]	72	[illegible]	[illegible]	[illegible]	4	2	[illegible]	[illegible]	[illegible]	WNW	[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Pensacola (U)	13	1016.6	- -	58	41	49.5	[illegible]	70	[illegible]+	30	9+	0	5			3.91	-.64	[illegible]	[illegible]	2	[illegible]	[illegible]	[illegible]		[illegible]	W	19+					
Tallahassee	64	1015.3	1017.9	61	36	48.8	-4.8	77	30	[illegible]	1	0	12	36	[illegible]	[illegible]	1.24	[illegible]	7	[illegible]	[illegible]	[illegible]	7.2	NW				[illegible]	[illegible]	[illegible]	1	
Tampa	19	1016.8	1018.1	66	45	55.3	6.2	77	18+	32	14	0	[illegible]	45	[illegible]	2.02	.03	1.77	4	1	[illegible]	[illegible]	10.7	WNW	*[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]
West Palm Beach	15	1015.4	1016.4	71	50	60.5	[illegible]	82	23	31	9	0	1	50	73	.89	[illegible]	[illegible]	3	2	[illegible]	[illegible]	12.2	WNW	*[illegible]	NW	1	[illegible]	[illegible]	[illegible]	1	1
GEORGIA																																
Athens	798	987.5	1017.3	53	30	41.8	[illegible]	68	6+	[illegible]	14	0	20	[illegible]	[illegible]	2.11	[illegible]	1.10	[illegible]	1	T	1	11.0	NW	*[illegible]	NW	[illegible]	10	11	[illegible]	[illegible]	[illegible]
Atlanta	975	975.5	1018.5	51	32	41.5	-3.1	68	6+	13	9	0	16	30	66	[illegible]	2.79	1.11	7	0	T	0	[illegible]	NW	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Augusta	143	1010.1	1017.0	56	29	42.8	-5.9	73	29	17	15	0	21	30	65	1.54	1.92	.65	4	0	T	1	7.3	WNW	*[illegible]	NNW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Columbus	385	1004.1	-- -	56	32	44.2	3.2	73	29	21	14	0	16			[illegible]	[illegible]	.75	5	2	.0	0						[illegible]	[illegible]	[illegible]	[illegible]	
Macon	356	1003.7	1017.5	57	31	45.4	1.1	71	29	25	14+	0	13	30	60	1.35	[illegible]	.70	[illegible]	[illegible]	0	[illegible]	[illegible]	NW	[illegible]	NW	[illegible]+	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Rome	637	995.4	- -	50	29	39.3	[illegible]	69	29	17	1	0	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	T	0										
Savannah	48	1014.3	1017.0	59	34	[illegible]	[illegible]	77	30	[illegible]	9	0	13	41	69	[illegible]	[illegible]	1.05	7	[illegible]	[illegible]	[illegible]	9.7	WNW	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]
IDAHO																																
Boise	2842	919.4	1017.6	41	26	33.5	6.2	57	4+	5	31	0	24	26	76	[illegible]	[illegible]	.71	17	0	10.0	[illegible]	12.6	SE	[illegible]	SE	[illegible]+	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Idaho Falls 46W (R)	4933	845.9	1019.0	32	13	22.6	6.9	46	7	[illegible]	[illegible]	0	31			.80	.14	[illegible]	15	0	10.5	[illegible]	6.2		[illegible]	WSW						
Idaho Falls 42NW (R)	4790		- - -	33	12	22.3	10.0	[illegible]	10	[illegible]	[illegible]	[illegible]	31			.61	.11	[illegible]	[illegible]				[illegible]		[illegible]	S	[illegible]					
Lewiston	1413	963.1	1016.3	39	27	32.9	[illegible]	57	6	[illegible]	31	[illegible]	[illegible]			[illegible]	1.49	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						[illegible]	1	[illegible]		
Pocatello	4444	861.5	1018.4	37	21	28.7	6.7	52	7	[illegible]	[illegible]	0	30	24	83	[illegible]	1.71	[illegible]	16	0	[illegible]	[illegible]	[illegible]	SW	41	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ILLINOIS																																
Cairo (U)	314	1007.8	- -	42	27	34.4	-3.0	64	5	17	16	0	24			[illegible]	1.95	1.69	[illegible]	2	6.1	[illegible]	[illegible]		[illegible]	N	[illegible]+	[illegible]	[illegible]	[illegible]	[illegible]	1
Chicago	610	998.3	1022.0	35	22	28.5	3.6	47	5	[illegible]	22	0	[illegible]	[illegible]	[illegible]	[illegible]	1.46	.25	[illegible]	[illegible]	1.2	1	[illegible]	NW	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Moline	589	1000.7	1022.5	32	13	22.7	-.5	55	5	-10	21	0	[illegible]	[illegible]	[illegible]	.31	1.19	[illegible]	[illegible]	0	2.2	[illegible]	[illegible]	WNW	[illegible]	SE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Peoria	654	999.0	1022.3	34	17	25.9	[illegible]	52	5	1	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	1.72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.2		[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Springfield	587	998.6	1022.9	35	17	25.9	1.5	57	5	1	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	1.46	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	NNW	[illegible]	SE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
INDIANA																																
Evansville	383	1005.1	1021.3	40	22	31.2	[illegible]	[illegible]	5+	[illegible]	26	[illegible]	[illegible]	21	[illegible]	[illegible]	.71	[illegible]	[illegible]	[illegible]	[illegible]	1	10.0	WNW	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1
Fort Wayne	801	988.2	1020.6	33	17	25.2	1.1	46	5	-1	[illegible]	0	[illegible]	[illegible]	[illegible]	1.61	-.93	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9.8	[illegible]	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indianapolis	793	990.2	1021.2	35	19	27.2	[illegible]	50	6	3	31	0	31	20	[illegible]	1.05	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N	[illegible]	SW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
South Bend	768	991.9	1021.0	31	18	25.6	[illegible]	46	5	1	3	[illegible]	[illegible]	[illegible]	[illegible]	1.05	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N	[illegible]	NNW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

See footnotes at end of table

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In.	In.	In.			In.	In.	M. p. h.		M p. h.			0-3	4-7	8-10	0-10	%
IOWA																																
Burlington	694	996.3	1023.4	32	14	23.0	1.0	56	5	-3	23	0	31	15	72	0.17	-1.57	0.11	4	0	1.3	1	10.5	NW	31	NW	15	5	7	19	7.0	58
Des Moines	946	990.9	1023.8	28	12	19.9	-2.2	59	5	-14	21	0	31	14	78	.51	-.72	.13	9	0	4.8	5	10.8	NNW	34	NW	15	4	7	20	7.5	39
Dubuque	1065	996.6	1023.1	28	11	19.5	.1	42	5	-20	21	0	31	14	76	.58	-.79	.20	8	0	5.1	5	----	---	--	---	--	8	4	19	7.0	--
Sioux City	1094	980.0	1023.8	26	8	16.8	2.3	61	5	-7	21	0	31	9	70	.75	.01	.27	12	0	8.2	6	13.7	NNW	42	NW	15	7	5	19	7.3	40
Waterloo	870	- --	--	27	6	16.3	--	55	5	-21	21+	0	31		- -	.41		.20	7	0	4.2	3	11.0	--	--	---	--	-	--	--	---	-
KANSAS																																
Concordia (L)	1375	970.2	-- --	34	16	24.9	3.2	63	4	-3	18	0	30	--	67	.81	.22	.46	10	0	11.2	5	7.2	---	25	N	14	8	10	13	6.1	61
Dodge City	2594	929.2	1020.2	43	20	31.5	1.2	74	5	-4	30	0	29	16	59	.76	.27	.46	5	0	8.6	6	12.8	NE	53	NW	1	11	4	16	6.0	55
Goodland	3645	888.6	1019.6	42	15	28.5	2.7	70	5	5	18	0	31	15	65	.68	.37	.35	4	0	7.7	5	10.4	SSE	*37	WNW	1	9	5	17	6.5	--
Topeka	879	985.8	1023.4	36	16	25.7	-3.0	69	5	3	19	0	29	14	65	.75	-.32	.21	9	0	9.3	5	10.8	NNW	31	S	14	6	9	16	6.8	39
Wichita	1321	970.9	1021.4	40	19	29.5	-2.5	67	5	4	19	0	28	18	68	.43	-.62	.18	8	0	6.6	3	12.3	NNW	38	NW	1	12	3	16	6.0	61
KENTUCKY																																
Lexington	979	983.3	1020.2	39	24	31.5	-1.0	59	6	11	9	0	28	24	78	3.25	-1.25	1.84	12	1	5.3	3	10.6	NNW	--	---	--	9	7	15	6.5	--
Louisville	474	1000.7	1020.4	40	25	32.5	2.4	62	6	15	24	0	26	24	75	2.87	-1.23	1.02	11	2	9.8	4	10.0	NNW	31	NW	30	7	7	17	6.5	54
LOUISIANA																																
Baton Rouge	64	1016.9	1019.8	62	39	50.6	-1.8	78	29	26	14	0	10	39	68	2.00	-3.49	1.12	6	3	.0	0	10.2	N	-	---	--	11	8	12	5.2	--
Lake Charles	12	1018.0	1019.3	63	43	52.6	.0	77	6	31	13+	0	3	43	73	2.94	-1.88	1.27	6	2	.0	0	8.6	N	*24	S	28+	10	8	13	5.4	--
New Orleans (U)	9	1016.3	--	60	44	52.4	3.5	76	29	35	13	0	0	--		2.38	2.40	1.58	6	2	.0	0	7.8	-	22	NE	22	13	5	13	5.2	54
New Orleans	3	1017.3	1019.5	61	42	51.7	-3.2	76	6+	31	1+	0	2	42	73	2.37	-2.31	1.41	6	4	.0	0	10.0	NNW	*23	N	11	13	7	11	5.1	--
Shreveport	252	1010.2	1019.6	57	36	46.6	1.2	80	6	27	8+	0	11	34	66	3.68	-1.04	1.77	10	1	T	T	10.7	NNW	-	---	--	11	5	15	5.6	64
MAINE																																
Caribou	624	989.0	1013.3	27	16	21.1	12.7	43	8	-16	1	0	29	17	81	2.49	.25	.79	19	0	17.1	14	13.8	NW	*39	NW	24	5	0	26	8.5	-
Portland	61	1008.3	1012.3	35	20	27.4	6.7	45	8+	-9	2	0	24	20	76	5.82	1.39	1.20	14	0	12.4	8	11.7	NNW	44	NE	8	9	4	18	6.8	43
MARYLAND																																
Baltimore (L)	14	------	--- --	42	30	35.7	-.9	59	30	20	9	0	20	--	-	2.21	-1.45	.61	10	--	----	--	- --	---	--	---	--	--	-	--	---	--
Baltimore	146	1010.3	1015.9	40	26	32.7	-1.5	58	30	14	25	0	26	25	73	2.49	-1.17	.66	12	0	7.4	5	11.4	NNW	52	NW	30	5	11	15	6.6	49
Frederick	294	------	------	39	22	30.2	-2.5	49	3	2	28	0	28	--	-	2.06	.82	.65	14	0	9.2	6	----	--		-	-	--			- -	--
MASSACHUSETTS																																
Blue Hill Obs (R)	629	987.1	1011.3	33	21	26.9	1.0	43	9	0	2	0	27	-	79	9.56	5.47	3.08	13	0	14.7	13	17.8	NW	45	NE	9	11	2	18	6.5	37
Boston	15	1006.6	1011.4	36	26	30.6	1.5	44	8	5	1	0	24	22	74	6.99	3.49	1.95	13	0	7.7	6	18.8	NW	*53	NE	9	11	2	18	6.6	39
Nantucket	43	1009.4	1009.9	37	29	32.9	.8	47	30	15	2	0	23	29	84	4.95	1.08	1.13	15	1	9.5	3	15.7	NNW	43	NE	9	5	4	22	7.7	30
Pittsfield	1153	968.9	- ----	28	16	21.9	.7	44	9	-10	2	0	29	--	-	2.57	-.53	.95	11	0	11.7	6	----	---	--	---	--	--	--	--	---	--
MICHIGAN																																
Alpena (U)	587	998.3	------	28	16	21.9	.7	35	10+	3	22	0	31	-	--	.77	-.89	.21	12	0	8.5	7	10.3	---	42	SE	28	5	11	15	6.8	42
Detroit	619	992.6	1020.5	32	21	26.4	.2	42	6	7	23	0	31	21	80	1.09	-.99	.30	9	0	11.0	4	10.0	N	30	N	7	7	5	19	7.1	34
Detroit (Willow Run)	722	990.9	1020.2	32	19	25.3	.0	43	6	6	22+	0	31	20	80	.93	-.87	.32	8	0	9.1	4	11.3	N	*29	NNE	7	7	5	19	7.1	--
East Lansing (U)	856	- -	- -	30	18	24.1	.3	37	5+	8	22+	0	31	--	-	.80	-1.07	.22	10	0	6.9	3	5.6	---	15	NE	7	--	--	--	--	33
Escanaba (U)	594	999.0	- ----	29	12	20.5	3.0	35	13	-14	21	0	31	-	--	.98	-.55	.36	9	0	11.4	15	9.2	--	36	N	6	8	8	15	6.5	51
Flint	761	991.9	1021.0	30	15	22.1	-.8	36	5+	-4	24	0	31	18	81	1.03	-.54	.41	9	0	9.5	5	9.5	N	*23	N	10+	5	5	21	7.6	--
Grand Rapids	681	994.9	1021.3	32	17	24.3	.8	39	13	3	26	0	31	20	81	.29	1.61	.10	8	0	5.3	2	8.7	NE	22	W	29	5	2	24	7.7	33
Marquette (U)	677	994.2	- --	28	17	22.8	4.1	34	29	5	21	0	31	-	77	.51	-1.66	.11	11	0	9.2	17	7.3	---	22	SE	28	2	3	26	8.7	25
Muskegon	627	997.6	1021.7	31	18	24.9	.0	38	16	1	26	0	31	19	77	.45	-1.50	.13	11	0	8.8	2	----	---	--	---	-	4	4	23	7.9	--
Sault Ste. Marie	721	999.7	1023.4	24	9	16.4	2.6	34	10	-7	8	0	31	12	81	1.31	-.85	.87	11	0	15.4	24	7.2	E	21	E	5	7	10	14	6.5	50
MINNESOTA																																
Duluth	1409	979.3	1022.9	21	3	12.4	4.1	32	12+	-24	20	0	31	8	78	.93	.30	.54	10	0	12.9	31	10.6	ESE	44	NW	6	6	7	18	7.0	60
Intern'l Falls	1179	980.0	1024.0	19	-3	8.3	5.3	34	13+	-26	23	0	31	2	73	1.12	.23	.45	15	0	15.1	23	10.6	SE	--	---	--	5	8	18	7.3	--
Minneapolis	830	988.8	1024.6	21	4	12.7	-1.9	37	14	-18	20	0	31	7	80	.48	-.32	.20	7	0	4.6	11	10.1	SE	40	SE	27	11	5	15	5.9	46
Rochester	1017	984.8	1024.0	22	2	12.4	-1.9	40	5	-24	23	0	31	8	80	.57	-.36	.21	9	0	5.7	10	8.6	WNW	--	---	--	10	5	16	6.2	--
St. Cloud	1034	983.1	1023.8	20	-2	8.7	-1.8	35	14	-25	23	0	31	2	75	1.01	.26	.53	8	0	9.8	17	6.7	WNW	--	---	--	10	7	14	5.9	--
MISSISSIPPI																																
Jackson	305	1007.7	1020.0	55	34	44.1	-3.9	75	29	19	14	0	15	33	70	2.13	-2.96	.64	9	3	.0	0	8.8	N	34	NW	30	7	10	14	6.2	46
Meridian	294	1006.0	-- -	55	33	44.0	-3.5	74	6	20	1	0	15	--	-	1.70	-3.39	.70	4	0	0	0	- --	- -	-	--	--	12	5	14	5.5	--
Vicksburg (L)	234	1010.5	-- --	55	37	46.0	-3.2	76	29	24	13	0	12	-	--	2.41	-3.03	.87	8	3	.0	0	8.6	--	28	SW	30	9	9	13	5.9	55
MISSOURI																																
Columbia	778	992.6	1022.3	38	19	28.7	-1.1	66	5	3	31	0	28	18	68	.42	-1.38	.32	4	0	5.9	5	10.3	N	30	SW	1+	8	2	21	7.1	39
Kansas City	741	986.5	1023.0	36	19	27.9	-2.1	68	5	4	16	0	29	17	66	.67	-.76	.35	6	0	8.2	4	9.8	NW	34	SW	1	7	6	18	7.0	41
St. Joseph	809	--- -	- ---	34	16	24.7	-2.4	65	5	4	19	0	31			.24	-.91	.09	7	0	3.0	2	11.0	---	*28	NW	15	6	6	19	7.2	-
St. Louis (L)	465	1001.0	- -	38	23	30.6	-2.7	63	5	8	16	0	25	--	-	.73	-1.59	.43	5	0	8.2	5	10.6	---	32	S	1	5	8	18	7.1	43
St. Louis	552	1001.0	1022.3	36	21	29.2	-3.0	62	5	6	31	0	27	19	68	.73	-1.19	.49	5	0	8.1	5	9.9	NW	--	---	--	6	8	17	7.1	--
Springfield	1265	971.9	1021.3	40	21	30.3	-2.4	69	5	2	16	0	28	21	71	1.00	-1.31	.25	9	1	10.4	6	12.9	SSE	44	SW	1	9	6	16	6.2	59
MONTANA																																
Billings	3568	890.3	1018.9	31	13	21.9	-1.0	52	4	-8	31	0	31	14	72	.56	.03	.29	8	0	8.2	5	10.0	SW	38	NW	23	4	11	16	6.9	51
Butte	5530	825.6	1020.4	29	2	15.4	1.2	44	4	-32	31	0	31	10		.51	-.08	.32	9	0	7.2	10	3.7	S	*36	W	13	5	9	17	7.1	--
Glasgow (L)	2277	943.1	1022.3	14	3	5.6	4.9	38	5	-25	31	0	31	2	83	.11	-.29	.04	5	0	2.7	5	10.1	ESE	*30	ESE	22	12	5	14	5.5	--
Great Falls	3664	886.2	1017.6	29	12	20.8	-1.9	54	4+	-15	30	0	28	11	67	.52	.03	.26	7	0	6.4	4	14.1	SW	47	W	4	10	6	15	5.7	67
Havre	2488	926.9	1021.3	20	1	10.7	5.5	53	4	-27	31	0	31	4	76	.16	-.30	.09	7	0	4.7	3	6.8	---	33	W	4	12	7	12	5.3	56
Helena	3893	871.3	1020.2	26	7	16.5	1.1	53	4	-25	31	0	30	9	75	.64	.13	.43	8	0	9.4	5	5.0	W	35	S	4+	7	7	17	6.6	49
Kalispell	2965	----	----	30	15	22.2	1.9	47	5	-11	30	0	30	--	-	1.52	.20	.33	13	0	18.1	15	---	-	--	--	--	3	7	21	7.9	--
Miles City	2629	933.3	1022.0	23	1	10.6	5.5	44	5	-26	31	0	31	3	-	.52	.05	.14	9	0	5.3	7	9.3	NW	*29	NW	13	12	5	14	5.6	--
Missoula	3200	900.4	1018.8	31	15	22.8	3.4	48	4	-13	31	0	30	18	81	.80	-.01	.19	12	0	11.4	7	4.3	W	31	E	15	7	2	22	7.7	32
NEBRASKA																																
Grand Island	1841	953.3	1022.6	30	11	20.6	-2.4	60	5	-13	18	0	31	13	72	.93	.35	.36	8	0	10.6	9	11.7	NNW	--	---	--	5	9	17	7.0	--
Lincoln (U)	1166	-----	--- -	31	14	22.7	-2.3	61	5	3	16	0	31	-	-	1.00	.18	.27	11	0	11.3	8	8.9	---	45	NW	15	7	5	19	7.1	52
Norfolk	1544	965.5	1024.2	26	7	16.4	-2.9	55	5	17	18	0	31	8	73	.70	-.09	.26	10	0	10.3	6	----	---	--	---	-	5	5	21	7.7	-
North Omaha	1323	972.6	- --	27	11	19.0	--	61	5	6	21	0	31	-	--	.61	--	.19	8	0	8.0	6	- -	--	--	--	--	--	--	--	---	--
North Platte	2779	920.1	1021.0	34	12	23.3	-.7	60	4	-11	17	0	31	15	75	.47	.08	.16	9	0	5.2	2	8.5	SSE	47	NW	14	6	7	18	7.2	46
Omaha	978	981.7	1023.8	30	13	21.1	-1.9	62	5	8	19	0	31	12	68	.71	-.14	.26	9	0	8.5	6	12.5	N	38	N	15	6	5	20	7.2	36
Scottsbluff	3950	878.1	1019.1	39	15	26.8	3.3	58	4	-6	30	0	31	17	70	.27	-.06	.20	4	0	4.3	2	9.6	WNW	--	---	--	6	10	15	6.5	-
Valentine (L)	2581	924.8	---	30	9	19.5	1.6	60	5	-15	17+	0	30	--		.30	.26	.16	6	0	6.2	5	9.7	---	45	N	14	7	6	18	7.0	56
NEVADA																																
Elko	5075	843.6	1018.0	40	21	30.6	8.7	54	4	16	31	0	30	24	79	3.35	2.28	.73	14	0	16.2	7	4.8	WSW	*29	WNW	26	7	5	19	7.1	--
Ely	6257	807.0	1017.3	43	20	31.9	8.9	55	9+	-10	31	0	28	19	62	.99	.05	.51	10	0	7.5	5	11.2	---	50	SE	7	4	9	18	7.5	46
Las Vegas	2162	949.5	1015.3	61	37	48.8	4.6	67	10+	27	30	0	8	21	36	.23	.21	.23	1	0	.0	0	6.8	W	*40	NNW	16	8	4	19	7.0	70
Reno	4397	860.5	1016.9	45	24	34.1	2.9	59	3	-1	30+	0	26	25	71	2.58	1.54	1.08	9	0	20.0	10	7.5	S	59	SSW	4	4	7	20	7.8	72
Winnemucca	4299	866.6	1016.9	43	26	34.7	6.9	54	4+	5	31	0	27	28	78	2.70	1.74	.67	14	0	2.9	2	8.4	- -	56	W	7	6	4	21	7.3	34
NEW HAMPSHIRE																																
Concord	339	1001.4	1012.5	33	18	25.6	5.5	45	6	13	2	0	27	19	76	4.40	1.49	1.21	15	0	8.0	6	8.7	NNW	40	NE	8	11	2	18	6.3	41
Mt. Washington	6262	793.1	- - -	21	8	14.5	9.1	34	13+	-20	1	0	31	-	83	7.04	1.94	1.85	18	0	19.3	18	29.2	NW	&123	SE	9	11	2	18	6.4	39

See footnotes at end of table

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No of days							No. of days		Snow, Sleet				Fastest mile							
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover tenths sunrise to sunset	Possible sunshine
	Ft	Mb.	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p. h.		M p. h			0-3	4-7	8-10	0-10	%
NEW JERSEY																																
Atlantic City (U)	8	1010.2	------	39	28	33.2	-2.6	52	30	19	8+	0	23	-	-	2.87	-0.91	0.70	11	0	6.6	3	17.6		54	NE	10	6	7	18	7.1	[illegible]
Newark	11	1012.2	1013.3	38	26	32.0	.5	47	10	12	2	0	27	22	67	1.50	2.10	.65	11	0	2.4	2	14.4	NNW	•33	WNW	31	7	9	15	[illegible]	
Trenton (U)	56	1005.8	1012.8	38	26	32.1	-.5	52	30	14	2	0	26	-		2.43	-.73	.63	12	0	7.9	4	11.4		30	NW	30	5	13	13	6.5	47
NEW MEXICO																																
Albuquerque	5310	848.6	1016.3	53	30	41.1	7.4	61	11+	16	18	0	22	22	50	.16	-.16	.19	7	0	2.9	2	7.0	N	30	SW	27	10	4	17	6.3	64
Clayton	4969	843.9	1016.9	51	21	35.8	2.9	78	5	0	29	0	29	-	--	.10	-.17	.09	2	0	.9	1						8	7	16	6.4	
Raton	6379	802.6	1015.5	50	17	33.6	7.4	66	4	-2	30	0	31			.42	.00	.33	1	0	4.1	3	-			-		9	9	13	5.6	
Roswell	3612	893.7	1017.2	58	26	42.1	2.5	78	27	8	18	0	22	19	44	.02	-.40	.02	1	0	T	1	7.2		43	N	24	9	6	16	[illegible]	
NEW YORK																																
Albany	277	1011.5	1015.1	29	18	23.5	1.0	45	9+	-7	2	0	28	17	75	2.25	-.02	.62	12	0	10.3	5	10.5	WNW	38	W	30	4	9	18	7.1	43
Binghamton	1601	954.3	1015.0	27	15	21.0	-.7	42	10	-2	2	0	30	17	83	1.97	-.41	.41	23	0	23.7	6	13.8	NNW	50	NW	30	1	6	24	8.4	31
Buffalo	693	989.0	1018.6	30	19	24.6	-.9	39	29	10	23	0	29	19	79	2.12	-.66	.64	21	0	17.7	4	12.2	WSW	34	NE	6	3	8	20	7.5	17
New York (U)	10	1000.9	------	38	27	32.7	-.2	49	10	16	2	0	25		-	2.29	1.17	.70	9	0	1.5	1	15.9		56	N	7	9	8	14	6.2	50
New York	19	1011.5	1013.2	38	28	32.8	-.2	48	10	15	2	0	25	22	65	1.73	1.46	.65	9	0	.9	T	17.6	NW	64	N	7	8	7	16	6.6	
Rochester	543	998.2	1018.1	28	18	23.1	-1.6	37	3+	5	1	0	29	19	82	2.09	-.27	.65	20	0	21.1	6	13.4	WSW	31	N	7	2	6	23	8.4	36
Schenectady	217	------	------	31	20	25.2	3.7	46	9	-2	2	0	28	-		1.87	-.55	.58	11	0	9.1	6		-	-			13	5	13	5.6	
Syracuse	424	995.4	1018.2	28	18	22.6	-2.9	41	10	-7	2	0	29	17	77	2.28	-.51	.62	18	0	26.2	11	7.5	NW	38	N	30	2	9	20	7.8	29
NORTH CAROLINA																																
Asheville (U)	2203	------	-- --	43	27	34.6	-4.8	63	6	17	9	0	28	-		1.02	-1.96	.56	6	0	3.4	3	10.7		34	NW	8	8	6	17	6.5	41
Charlotte	727	987.9	1016.6	52	30	41.0	1.3	68	6	19	15	0	25	27	62	1.24	2.44	.60	5	0	.5	1	10.1	NNW	39	N	9	11	10	10	5.5	56
Greensboro	891	983.9	1016.6	47	26	36.4	2.6	62	30	17	15	0	27	23	63	1.04	2.33	.49	6	0	2.9	2	9.7	NNW	34	N	7	10	9	12	5.7	66
Hatteras (R)	4	1013.0	1013.6	44	35	39.7	-8.3	56	3	27	8	0	6	33	80	4.41	31	2.01	9	0	1.1	T	13.7	NW	43	NW	4	5	10	16	6.8	38
Raleigh	433	1001.8	1015.8	49	29	38.9	-2.5	66	30	21	15+	0	25	25	62	1.05	2.29	.58	5	0	2.0	2	9.8	NW	•27	NNE	23	10	9	12	5.7	59
Wilmington	30	1014.3	-----	51	33	42.0	-5.8	72	30	25	1+	0	21	-		1.55	-1.57	.56	8	0	.8	1	12.1		38	N	7	12	6	13	5.6	60
Winston-Salem	967	980.4	1017.1	47	28	37.8	-1.5	63	30	22	9+	0	24	24	60	1.09	2.60	.61	7	0	4.9	2	9.6	NW	•27	NW	9	11	8	12	5.6	
NORTH DAKOTA																																
Bismarck	1650	959.4	1024.0	14	-5	4.7	-4.5	41	5	-24	21	0	31	1	81	.97	.61	.30	7	0	9.9	9	10.3	E	40	NW	5	15	5	11	5.1	57
Devils Lake (U)	1471	966.5	------	12	-7	2.5	-2.3	36	5	-25	20	0	31	--		1.35	.95	.70	7	0	15.5	23	8.3	-	33	NW	5	9	5	17	6.1	58
Fargo	895	987.5	1024.6	15	-3	6.1	-1.0	36	5	-21	19	0	31	0	73	.72	.12	.27	8	0	7.9	7	15.5	SSE	48	SE	6	6	8	17	6.7	53
Williston (U)	1877	950.9	1023.0	16	-2	6.8	-3.2	39	5	-23	20	0	31	1	70	.14	-.35	.07	6	0	1.6	4	5.9	--	23	NW	5	11	7	13	5.6	61
OHIO																																
Akron	1210	979.9	1019.5	32	19	25.5	-1.9	48	6	2	23	0	31	20	79	1.44	1.30	.39	14	1	8.2	3	12.3	NNW	-		-	5	3	23	7.7	
Cincinnati Obs.	761	------	------	37	23	30.0	-3.1	59	6	10	26	0	27		--	2.44	-1.00	.86	12	2	15.5	9	6.6		20	N	7		--			49
Cincinnati	869	986.8	1020.0	37	21	29.3	-2.5	57	6	3	26	0	29	22	74	2.49	-.91	.78	11	2	11.6	7	9.8	N	•23	SSW	2+	4	11	16	7.3	
Cleveland	787	990.6	1019.6	33	22	27.6	.9	48	6	6	23	0	30	22	81	2.75	.37	.92	15	0	14.1	7	12.4	NNW	30	N	8	3	7	21	8.0	22
Columbus (U)	724	------	----	34	23	28.6	-2.5	53	6	10	24	0	28	--	--	1.80	1.01	.63	12	1	7.9	5	-				-	-			-	
Columbus	815	989.0	1020.3	35	20	27.7	-2.0	56	6	4	24	0	29	21	79	2.13	-.81	.66	11	1	11.4	5	9.4	NNW	34	N	30	4	8	19	7.5	38
Dayton	1002	982.5	1020.4	34	19	26.3	-3.4	53	6	4	24	0	31	19	75	1.56	1.40	.51	11	1	10.9	5	10.8	NNW	29	N	7	4	8	19	7.7	47
Sandusky (U)	603	995.9	------	32	21	26.5	-2.3	46	6	5	23	0	29			1.64	-.65	.52	7	0	10.1	6	7.4	-	25	N	8	6	5	20	7.3	37
Toledo	676	994.2	1020.7	31	16	23.9	-	45	6	1	23+	0	30	19	81	1.49	-	.50	8	0	13.3	5	10.2	N	29	N	7	6	6	19	7.2	47
Youngstown	1178	974.7	1019.1	32	19	25.4	-2.1	48	6	3	23	0	31	22	85	1.59	-1.73	.33	15	0	13.8	5	10.0	N	•39	N	7	4	4	23	7.6	
OKLAHOMA																																
Oklahoma City	1280	975.3	1020.5	47	26	36.1	1.0	68	5	10	19	0	23	23	65	.26	-1.24	.24	4	0	T	T	12.7	N	36	SW	1	13	1	17	5.9	49
Tulsa	672	995.9	1021.1	45	26	35.6	-1.8	70	4+	9	19	0	22	24	67	.98	-1.00	.55	8	1	2.8	1	11.1	N	29	S	1	14	1	16	5.5	57
OREGON																																
Astoria	8	1010.5	1011.2	47	37	41.9	1.8	58	11	21	27	0	8	37	84	17.09	6.43	2.79	25	3	1.1	1	9.0	ESE		-	--	3	4	24	8.4	
Burns (U)	4140	870.3	1016.4	36	16	26.0	2.1	45	11+	15	31	0	30	21	79	3.97	2.50	.90	20	0	36.6	21	-			-	--	5	6	20	7.3	
Eugene	361	999.3	1013.2	48	36	41.8	3.6	58	15	21	31	0	9	-	-	10.89	5.48	1.84	24	0	2.5	1	9.9	--	--		-	2	3	26	8.5	-
Meacham	4050	------	------	34	23	28.1	3.2	47	11	-4	31	0	28			5.59	1.29	1.53	19	0	44.2	26	-	--	--			2	6	23	8.2	-
Medford	1312	966.5	1014.8	47	34	40.6	3.4	59	6	21	31	0	12	36	85	5.88	3.37	1.52	20	0	.2	T	4.3	SSE	•25	SSE	5	2	6	23	8.4	-
Pendleton	1492	960.4	1015.4	41	27	34.0	3.4	58	6	10	31	0	22	27	78	2.97	1.49	1.29	17	0	9.6	5	9.4	SE	•46	SE	6	3	11	17	7.7	
Portland	21	1007.5	1013.2	45	35	39.9	2.5	57	6	13	31	0	8	35	85	11.66	7.07	2.49	25	0	9.3	9	11.5	ESE	52	S	4	3	1	27	8.7	15
Roseburg	505	994.6	1013.5	48	35	41.6	--	59	15	22	31	0	12	-	--	9.90	5.30	2.80	22	0	8.0	7	4.6	---	34	SW	15	1	5	25	8.8	21
Salem	195	1005.1	1012.5	48	35	41.1	2.7	57	15	12	27	0	8	37	88	12.68	6.96	2.91	27	1	5.5	4	6.7	S				3	3	25	8.4	
Sexton Summit (R)	3836	------	------	38	29	33.6	-2.2	50	15	20	30	0	23	--	--	10.00	5.98	1.73	27	0	37.2	17	--	--				4	2	25	8.5	
PENNSYLVANIA																																
Allentown	376	1000.5	1015.0	36	22	29.2	.7	49	10	8	2	0	28	20	71	1.68	1.53	.55	12	0	5.1	3	14.1	NW	-			3	13	15	7.0	
Harrisburgh	335	1001.5	1015.7	38	26	32.0	.9	53	10	14	2	0	27	18	59	1.45	1.17	.43	10	0	5.4	4	9.2	NW	47	W	30	5	11	15	7.0	46
Philadelphia (U)	26	-----	------	39	29	34.1	-.8	52	30	19	2+	0	22		-	2.50	-.89	-	11	0	---	--	--		--	---	--	--				-
Philadelphia	10	1009.4	1013.9	38	26	32.1	-1.1	51	30	17	27	0	25	22	68	2.30	-1.07	.58	11	0	7.0	4	11.3	N	51	NW	30	6	8	17	7.1	49
Pittsburgh (U)	749	------	------	37	25	30.9	-2.1	55	6	15	23+	0	27	--	--	1.75	-1.08	.51	11	-	5.3		-	-	--	-		-	--			
Pittsburgh	1151	987.0	1019.0	34	22	27.7	-1.3	52	6	9	23+	0	29	22	80	1.90	-.87	.44	16	0	7.3	4	10.4	NW	•29	WSW	30	5	6	20	7.8	42
Reading (U)	266	1002.3	------	34	27	32.7	.5	50	10	17	2	0	27	--	--	1.54	1.61	.62	9	0	3.8	3	14.4	--	49	N	8	4	11	16	7.2	39
Scranton	940	980.6	1016.2	31	20	25.4	-1.5	44	10	8	2	0	29	18	73	1.01	-1.25	.28	12	0	4.7	3	7.4	NNW	42	W	30	1	8	22	8.0	28
Shippingport (U)	736	------	------	35	22	28.5	- -	52	6	9	24	0	29	--		1.27	-	.42	10	0	4.0	4	3.3		%44	WNW	30	-				
Williamsport	527	997.0	------	36	22	28.7	.2	47	10	8	25	0	28	-	-	1.48	1.11	.37	14	0	6.3	4	- -			---	--	7	5	19	7.1	
RHODE ISLAND																																
Block Island	110	1005.9	1010.5	37	27	32.1	.2	47	3	12	2	0	22	-	--	3.59	-.08	.96	13	0	10.2	6				--		8	6	17	6.7	
Providence	55	1005.4	1011.7	36	24	30.4	1.7	45	8+	3	2	0	24	22	73	4.92	1.17	1.36	13	0	10.0	10	12.4	NW	•36	NNE	9	11	1	19	6.5	[illegible]
SOUTH CAROLINA																																
Charleston (U)	9	------	------	55	39	46.7	-4.7	69	29	30	9	0	3			1.99	-.49	.65	6	2	.0	0	10.5		28	NE	24+	12	6	13	5.3	63
Charleston	41	1014.9	1016.8	56	34	45.1	-5.2	73	30	24	15	0	16	33	69	2.56	.08	.83	6	0	.0	0	11.6	WNW			--	13	6	12	5.1	
Columbia	217	1007.9	1016.4	55	30	42.7	-4.3	71	6+	20	1+	0	22	30	69	1.73	-1.41	1.03	5	0	T	0	7.9	NW	27	SSW	30	12	9	10	5.1	[illegible]
Florence	146	1010.6	- ----	54	32	43.1	-3.2	72	30	23	1	0	17	-	-	1.69	-1.16	.85	6	0	T	T			-			15	4	12	[illegible]	
Greenville	1018	978.2	1016.3	50	32	40.9	-2.4	65	6	23	17	0	19	24	57	1.58	-2.88	.92	6	1	.1	T	12.0	N	42	NE	6	9	10	12	[illegible]	61
Spartanburg	801	------	------	51	31	40.7	-2.7	65	6	24	8+	0	20	-		1.40	-3.11	.80	3	0	1.0	1	9.2	NW	•29	NW	16					
SOUTH DAKOTA																																
Huron	1282	973.9	1024.1	18	0	9.1	4.4	38	5	-23	21	0	31	5	83	.16	-.11	.18	8	0	7.6	11	11.9	SSE	60	SE	8	11	4	16	[illegible]	[illegible]
Rapid City	3165	901.5	1020.0	32	14	23.1	2.0	60	8	-10	31	0	31	15	75	.47	-.01	.22	8	0	3.6	2	8.3	NNW	43	N	11	7	4	20	[illegible]	[illegible]
Sioux Falls	1420	969.2	1023.9	22	1	11.2	3.0	46	5	-20	21+	0	31	4	67	.58	.14	.22	9	0	9.2	8	10.5	NW	•32	NW	11	9	4	18	[illegible]	
TENNESSEE																																
Bristol	1519	962.8	------	41	24	32.2	6.4	58	6	15	9	0	29			2.36	-1.14	.63	12	0	9.2	6						7	3	21	[illegible]	
Chattanooga	670	991.5	1019.9	48	29	38.1	3.5	68	6	18	15+	0	24	27	69	2.60	-2.63	1.01	9	2	T	T	7.8	NNE	45	W	30	[illegible]	5	18	[illegible]	[illegible]
Knoxville	950	983.4	1019.7	44	28	36.1	4.4	63	6+	17	9	0	28	28	75	3.18	-1.36	1.26	11	1	7.0	4	7.0	NE	43	W	29	6	5	20	7.4	33
Memphis (U)	271	------	------	46	31	38.6	-3.3	68	6	19	24	0	19	-	-	3.42	-1.96	1.44	8		3.0	3	-	-								
Memphis	263	1006.1	1021.2	47	30	38.7	-2.9	70	6	20	14	0	22	27	67	[illegible]	-1.41	2.00	8	1	5.2	5	11.6	N	43	NW	29	9	4	[illegible]	[illegible]	[illegible]
Nashville	577	1000.3	1020.7	45	27	35.9	-4.0	67	6	14	24+	0	26	28	77	5.67	.74	4.23	10	3	5.1	4	9.6	NNW	29	W	30	[illegible]	3	19	[illegible]	[illegible]
Oak Ridge (R)	905	985.3	------	44	26	35.0	-3.1	62	6+	14	9	0	29	--	-	4.57	-1.49	2.77	11	0	6.6	4						7	4	20	[illegible]	
TEXAS																																
Abilene	1759	956.3	1018.8	55	31	43.4	.1	79	5	13	19	0	20	27	60	.69	.19	.53	1	0	3.3	3	10.7	N	36	S	26+	11	3	17	6.9	61

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In.	In.	In.			In.	In.	M. p. h		M. p. h.			0–3	4–7	8–10	0–10	%
TEXAS (Cont'd.)																																
Amarillo	3590	889.3	1017.9	51	24	37.5	2.2	78	5	3	18	0	28	17	52	0.09	0.55	0.04	5	0	0.7	1	11.6	S	41	W	27	10	4	17	6.1	68
Austin	615	997.0	1019.5	61	41	50.8	.9	84	6	27	19	0	4	35	62	1.65	-.98	1.17	6	2	.0	0	10.6	N	33	NE	3	11	6	14	5.6	57
Brownsville	16	1015.2	1017.6	74	52	63.0	2.5	82	2+	37	19	0	0	56	82	T	-1.55	T	0	0	.0	0	11.6	SSE	34	NW	18+	11	11	9	4.9	64
Corpus Christi	40	1017.3	1018.4	69	48	58.6	1.7	83	6	31	19	0	1	50	78	.43	-.96	.41	4	1	.0	0	10.0	NNE	34	S	28	11	11	9	4.9	67
Dallas	487	1001.4	1020.5	55	35	45.1	-.6	78	5	15	19	0	13	31	63	1.66	-.81	1.09	6	0	3.2	3	8.0	NNW	30	S	14	13	2	16	5.7	56
Del Rio	1091	983.4	1018.6	64	39	51.2	-.7	78	6+	29	19	0	6	37	62	.28	.55	.19	4	0	.0	0	7.4	---	34	NW	18	15	7	9	4.4	64
El Paso	3920	886.9	1016.2	62	37	49.7	6.3	73	27	24	18	0	10	24	38	.35	-.07	.35	2	0	.0	0	11.7	N	36	NW	29	6	10	15	6.3	71
Fort Worth	544	999.3	1020.7	56	34	44.9	-.4	79	5	14	19	0	13	30	61	1.34	-1.08	.89	5	0	3.8	4	11.9	N	*37	NNW	30	12	3	16	5.7	--
Galveston (U)	7	-----	-----	62	49	55.5	1.0	72	6	33	19	0	0	-	-	2.44	-1.65	1.44	5	--	.0	0	12.8	---	33	NE	17	--	--	--	- -	55
Galveston	5	1016.9	1019.2	62	49	55.1	.8	72	6+	34	19	0	0	47	77	3.14	-1.20	1.83	7	3	.0	0	18.3	NNE	-	---	--	11	8	12	5.3	--
Houston (U)	41	1013.5	-----	64	47	55.2	1.4	80	6	33	19	0	0			3.19	-.79	1.23	8	6	.0	0	10.4	---	28	N	30	13	4	14	5.3	52
Houston	50	1016.6	1019.4	64	45	54.3	1.0	80	6	32	20	0	1	44	72	3.96	-.20	1.66	8	3	.0	0	12.7	ENE	--	---	--	9	8	14	5.7	--
Laredo	500	1002.4	1017.7	71	46	58.5	.9	90	29	32	13+	1	2	43	63	.15	-.87	.10	5	1	.0	0	8.7	ENE	*32	NNE	30	14	9	8	4.7	--
Lubbock	3243	903.5	1017.8	56	25	40.5	1.7	78	5	10	18	0	28	21	52	.01	-.66	.01	1	0	.0	0	12.9	WSW	*52	W	29	11	4	16	5.8	--
Midland	2854	917.0	1017.7	60	30	45.2	1.0	75	5	11	18	0	20	25	52	.16	-.46	.08	3	0	.8	1	7.1	SW	*31	WSW	29	13	4	14	5.5	--
Port Arthur	16	1018.3	1019.5	63	43	52.9	.0	77	6	30	9	0	4	44	75	3.50	-1.62	1.72	4	4	.0	0	12.9	N	41	N	30	13	5	13	5.3	54
San Angelo	1903	950.2	1018.8	59	33	46.3	1.0	80	5	12	19	0	14	29	57	.71	-.28	.44	4	0	3.1	3	9.5	SW	*35	NW	29	13	3	15	5.2	--
San Antonio	792	993.6	1018.8	64	41	52.1	1.5	81	6	27	14	0	6	37	63	.81	-1.00	.72	3	1	.0	0	8.9	N	43	N	3	10	6	15	5.5	61
Victoria	110	1013.9	1018.6	67	45	55.6	.4	82	6	31	14+	0	3	43	67	1.14	-1.58	.80	7	2	.0	0	11.0	---	%45	S	28	11	7	13	5.3	--
Waco	500	998.0	1019.6	59	36	47.4	.1	84	6	21	19	0	15	34	64	2.75	.37	1.52	5	2	.9	1	13.8	N	--	---	--	12	3	16	5.7	--
Wichita Falls	1027	982.7	1020.0	52	29	40.4	-.2	76	5	12	19	0	23	26	61	.39	-.92	.17	6	0	2.4	2	10.1	N	*23	ESE	23+	11	4	16	6.1	--
UTAH																																
Milford	5028	842.9	1017.1	49	23	36.2	12.4	63	10	9	31	0	29		-	.51	-.06	.14	7	1	1.9	T	----	---	--	---	--	4	7	20	7.5	--
Salt Lake City	4220	866.6	1017.6	45	26	35.5	9.0	58	7	2	31	0	25	27	75	2.39	1.19	.80	9	0	6.5	4	8.0	SSE	34	S	26	4	3	24	8.0	34
VERMONT																																
Burlington	331	1001.0	1016.4	25	14	19.6	1.7	45	9	-12	2	0	30	14	77	1.92	.03	.74	13	0	16.7	6	8.6	N	36	S	29	3	3	25	8.6	27
VIRGINIA																																
Lynchburg	947	981.4	-- -	45	28	36.4	-1.3	61	30	18	27	0	27	--		.76	-2.67	.29	9	1	2.1	1	9.6	-	35	NW	10	7	14	10	5.9	50
Norfolk	26	1013.2	1014.4	44	31	37.2	4.3	69	30	22	28	0	22	29	74	2.49	-.68	1.05	8	0	.4	T	13.5	NNW	42	SW	30	7	9	15	6.7	45
Richmond	162	1009.3	1015.6	45	27	36.0	2.3	64	30	16	28	0	25	26	70	1.65	-1.99	.82	10	0	1.1	1	8.8	NNW	34	SW	30	8	7	16	6.4	49
Roanoke	1174	973.8	1016.8	43	27	35.4	2.5	60	30	18	27+	0	24	22	59	.60	-2.79	.22	8	1	2.5	T	10.2	NW	--	---	--	8	11	12	5.8	--
WASHINGTON																																
Olympia	190	1003.7	1011.8	45	31	38.0	1.0	57	11	11	31	0	17	34	84	10.75	4.06	1.62	26	[illegible]	[illegible]	3	7.7	SSW	*55	S	5	2	3	26	8.7	--
Seattle (U)	14	-- ---	---	46	38	41.7	1.0	54	5+	23	31	0	5	-		7.82	3.33	1.12	26	[illegible]	[illegible]	T	10.3	---	42	SE	5+	4	3	24	8.0	41
Seattle	14	1011.1	1012.2	--	--	---	- -	--		-	--	-	-	35	81	-----					-	-	6.9	SSE	--	---	--	-	--	--	---	--
Seattle-Tacoma	379	998.0	1012.5	44	34	39.0	1.8	56	11	17	30+	0	10	34	84	8.67	3.94	[illegible]	24		4	T	12.6	SE	*36	SW	16	2	4	25	8.5	--
Spokane	2357	945.1	1015.6	34	24	28.9	4.0	47	6	-11	31	0	27	25	86	2.87	1.15	.66	19	0	18.9	7	8.1	NE	38	S	4	4	3	24	8.3	23
Stampede Pass (R)	3958	872.0	1014.0	26	20	22.9	.8	33	12+	2	31	0	31	--	-	10.38	-2.67	1.97	26	0	90.3	143	----	---	--	---	--	2	1	28	9.0	--
Tatoosh (R)	101	1005.8	1009.7	45	38	41.2	.8	53	12+	29	30+	0	4	36	82	11.97	1.78	2.85	26	3	4.2	2	19.5	E	61	E	14	3	3	25	8.5	22
Walla Walla (U)	949	979.3	1015.9	41	28	34.7	2.7	58	4+	-4	31	0	18	-	-	3.29	1.61	1.32	18	0	11.7	7	5.2	---	27	S	6	3	6	22	8.2	24
Yakima	1061	975.6	1015.9	36	19	27.2	.3	48	16	-15	31	0	31	23	84	3.25	2.29	1.18	19	0	26.2	13	5.3	W	--	---	--	4	5	22	8.0	--
WEST VIRGINIA																																
Charleston	950	982.0	1019.2	39	23	30.9	-5.5	61	6	8	18	0	28	23	76	2.72	1.27	.72	12	2	8.4	4	6.9	WSW	*23	WSW	30	1	10	20	8.0	--
Elkins	1969	------	------	35	16	25.7	-6.5	60	6	-3	28	0	30	19		3.07	-.15	.50	17	1	18.0	10	6.1	---	*40	WNW	30	1	9	21	8.0	--
Huntington (U)	565	-----	----	40	24	32.0	-6.0	62	6	14	18	0	28	--	-	2.75	-.86	1.07	11	--	8.8	4	----	---	--	---	--	--	--	--	---	--
Parkersburg (U)	615	------	--- --	38	23	30.2	-4.2	56	6	11	27	0	29	--		2.58	.59	.93	13	2	9.5	4	6.0	---	29	W	30	6	7	18	7.0	32
WISCONSIN																																
Green Bay	689	999.0	1023.1	27	8	17.8	1.7	38	14	-16	21	0	31	11	74	.56	-.73	.31	4	0	4.0	2	9.1	NE	27	W	29	10	9	12	5.6	60
La Crosse	652	997.3	1023.7	25	6	15.6	-1	39	14	-19	21+	0	31	9	75	.46	-.76	.20	7	0	5.8	7	6.6	NNW	*27	NW	6	13	5	13	5.6	--
Madison	857	985.4	1022.8	31	12	21.0	1.9	42	13	-11	21	0	31	14	76	.43	.88	.16	7	0	3.9	3	8.1	WNW	30	NW	6	10	5	16	6.3	49
Milwaukee	675	995.9	1022.1	32	18	24.9	3.0	41	5+	-6	22	0	30	17	73	.57	-1.01	.22	7	0	4.4	3	13.1	WNW	35	SE	28	8	6	17	6.7	46
WYOMING																																
Casper	5322	834.1	1016.4	37	18	27.4	5.1	54	10	-6	31	0	30	15	63	.44	-.25	.16	9	0	9.0	3	14.0	SW	*46	WSW	8	8	3	20	6.9	--
Cheyenne	6131	808.3	1017.4	41	17	28.9	3.4	62	4+	-7	31	0	30	11	52	.70	14	.36	5	0	8.6	6	12.9	WNW	49	W	8	9	11	11	5.9	57
Lander	5563	832.7	1019.1	32	12	22.0	5.2	51	4	-15	31	0	30	12	68	.67	17	.42	4	0	8.7	6	5.2	---	42	W	5	7	8	16	6.5	62
Sheridan	3942	883.2	1019.9	32	11	21.2	1.1	58	4	-15	31	0	30	14	74	.55	20	.20	12	0	9.4	6	6.5	S	45	W	8	6	7	18	6.7	47
PACIFIC AREA																																
Canton Island	9	1007.5	1007.8	87	76	81.5	1.5	89	20+	74	25+	0	0	70	72	.30	-.78	25	2	0	.0	0	----	---	--	---	--	11	14	6	4.8	--
Hilo	31	1011.5	1013.0	81	64	72.0	1.6	87	13	60	5	0	0	64	81	7.95	-6.18	2.67	19	0	0	0	9.1	SSW	*28	SSE	11	9	9	13	6.1	53
Honolulu	7	1012.5	1012.9	80	67	73.3	1.1	84	7	62	31	0	0	66	78	3.58	-1.07	2.04	12	0	.0	0	7.9	ENE	54	W	12	5	12	14	6.4	56
Koror (R)	94	1004.7	1008.6	85	74	79.7	.5	88	7+	72	23+	0	0	75	85	24.45	12.42	5.47	29	1	.0	0	----	---	--	---	--	0	2	29	9.4	--
Lihue	115	1007.1	1012.3	79	65	71.9	1.8	84	16	59	14+	0	0	66	86	17.56	11.33	11.09	15	3	.0	0	9.0	WNW	36	SW	12	10	7	14	6.1	36
Majuro	10	1007.1	1007.4	84	77	80.5	---	87	31	73	2	0	0	74	81	9.36	- --	2.30	17	0	.0	0	----	---	--	---	--	6	8	17	7.1	--
Ponape (R)	112	1003.1	1008.5	85	75	80.2	-1.0	90	23	72	7+	1	0	74	82	17.61	5.87	3.66	23	4	.0	0	----	---	-	--	--	0	9	22	8.5	--
Truk (Moen Island)	8	1007.8	1008.3	85	77	80.7	.2	86	1+	73	6+	0	0	74	80	10.59	3.00	2.34	23	2	.0	0	----	---	--	---	--	0	7	24	8.6	--
Wake Island	11	1012.2	1012.6	81	71	75.9	1.6	83	16	66	6	0	0	62	65	1.92	.66	1.26	6	0	.0	0	14.9	ENE	--	---	--	14	13	4	4.1	--
Yap (R)	53	1006.8	1008.6	85	76	80.2	-.6	87	4+	72	12+	0	0	74	80	7.78	95	2.91	26	0	.0	0	-	---	-	--	--	0	0	31	10.0	--
WEST INDIES																																
San Juan (U)	47	------	-- ---	80	70	75.1	.2	87	11	66	16	0	0	-	-	3.00	-1.69	1.11	10	2	.0	0	-- -	---	--	---	--	--	--	--	---	--
San Juan P.R.	9	1012.0	1014.5	81	67	73.9	--	85	1+	62	21	0	0	65	79	3.48	--	1.23	11	2	.0	0	10.1	NE	29	NE	31	12	10	9	5.3	60

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates

% Peak gust.

a Maximum hourly average.

ø Station pressures apply to elevations shown in Table 10b of the annual issue of this publication.

HEATING DEGREE DAYS

Table 3

Base 65°F.

JANUARY 19[illegible]

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	719	1961	1753
Mobile	489	1211	1039
Montgomery	623	1622	1381
ARIZONA			
Flagstaff	979	3620	4198
Phoenix (U)	219	602	980
Phoenix	271	731	1119
Prescott	699	2120	2641
Tucson	268	754	1123
Winslow	725	2213	2904
Yuma	178	576	682
ARKANSAS			
Ft. Smith	842	2263	2048
Little Rock	769	2045	1898
Texarkana	652	1745	1513
CALIFORNIA			
Bakersfield	423	1167	1380
Bishop	793	2431	2515
Blue Canyon	955	3103	2899
Burbank	324	892	976
Eureka (U)	487	2716	2585
Fresno	517	1452	1640
Los Angeles (U)	271	758	779
Los Angeles	316	873	1075
Mt. Shasta (R)	940	3299	3324
Oakland	485	1807	1790
Red Bluff	552	1516	1559
Sacramento (U)	512	1383	1594
Sacramento	535	1490	1714
Sandberg (R)	635	2038	2184
San Diego	290	735	813
San Francisco (U)	405	1899	1709
San Francisco	461	1830	1890
San Jose	403	1301	1348
Santa Maria	436	1781	1566
COLORADO			
Alamosa	1295	4564	5112
Colorado Springs	1036	3346	3513
Denver	955	3188	3489
Grand Junction	870	2970	3564
Pueblo	1088	3155	3383
CONNECTICUT			
Bridgeport	1053	3143	3169
Hartford	1113	3614	3458
New Haven	1073	3326	3276
DELAWARE			
Wilmington	1021	3018	2824
DIST. OF COLUMBIA			
Washington (U)	926	2632	2488
Washington	937	2680	2523
FLORIDA			
Apalachicola (U)	454	965	827
Daytona Beach	381	682	533
Fort Myers	209	325	250
Jacksonville (U)	404	876	719
Jacksonville	454	964	804
Key West (U)	27	29	46
Miami (U)	135	169	110
Miami	132	156	118
Miami Beach	97	111	80
Orlando	305	530	410
Pensacola (U)	475	1086	912
Tallahassee	496	1182	991
Tampa	298	521	424
West Palm Beach	178	219	154
GEORGIA			
Athens	712	2024	1738
Atlanta	724	1959	1757
Augusta	682	1827	1356
Columbus	639	1712	1514
Macon	598	1598	1321
Rome	789	2264	1956
Savannah	568	1445	1099
IDAHO			
Boise	970	3356	3509
Lewiston	989	3565	3307
Pocatello	1120	3838	4060
ILLINOIS			
Cairo (U)	942	2549	2321
Chicago (U)	1085	3335	
Chicago	1123	3535	3595
Chicago University	1116	3480	
Moline	1305	3905	3730
Peoria	1208	3648	3563
Springfield	1204	3476	3359
INDIANA			
Evansville	1040	2959	2654
Ft. Wayne	1226	3672	3582
Indianapolis	1164	3454	3263
South Bend	1214	3729	3694
IOWA			
Burlington	1297	3832	3605
Des Moines	1392	4161	3802
Dubuque	1404	4377	4215
Keokuk (U)	1189	3406	
IOWA (Cont'd.)			
Sioux City	1489	4448	4156
KANSAS			
Concordia (U)	1238	3512	3192
Dodge City	1033	3050	3027
Goodland	1123	3591	3676
Topeka (U)	1191	3269	2979
Topeka	1214	3346	3152
Wichita	1094	3005	2786
KENTUCKY			
Lexington	1031	2963	2892
Louisville	999	2805	2666
Pikeville (U)	939	2544	
LOUISIANA			
Baton Rouge	448	1099	1039
Lake Charles	388	951	1009
New Orleans (U)	391	898	770
New Orleans	414	985	848
Shreveport	569	1492	1398
MAINE			
Caribou	1348	5200	5663
Greenville (U)	1364	5045	
Portland	1161	4264	4220
MARYLAND			
Baltimore (U)	903	2652	2417
Baltimore	995	2938	2773
Frederick	1069	3262	2842
MASSACHUSETTS			
Blue Hill Obs. (R)	1181	3844	
Boston	1057	3320	3128
Nantucket	988	3193	3098
Pittsfield	1330	4403	4291
MICHIGAN			
Alpena (U)	1330	4255	4320
Detroit	1190	3552	3536
Detroit (Willow Run)	1225	3670	3614
East Lansing (U)	1260	3800	
Escanaba (U)	1373	4569	4686
Grand Rapids	1255	3850	3927
Marquette (U)	1300	4494	4602
Muskegon	1236	3806	3836
S. Ste. Marie	1498	4921	5162
MINNESOTA			
Duluth (U)	1591	5520	5386
Duluth	1625	5665	5600
Internat. Falls	1756	6200	6145
Minneapolis	1615	4980	4577
Rochester	1625	5054	4716
St. Cloud	1742	5557	5173
MISSISSIPPI			
Jackson	635	1672	1417
Meridian	647	1723	1517
Vicksburg (U)	590	1500	1282
MISSOURI			
Columbia	1121	3164	3064
Kansas City	1143	3103	2960
St. Joseph	1241	3550	3223
St. Louis (U)	1060	2873	2686
St. Louis	1101	3011	2822
Springfield	1071	2977	2842
MONTANA			
Billings	1331	4489	4072
Glasgow (U)	1837	5892	5141
Great Falls	1363	4885	4270
Havre (U)	1681	5712	4811
Helena	1495	5239	4818
Kalispell	1320	5153	4720
Miles City	1683	5215	4584
Missoula	1302	4936	4684
NEBRASKA			
Grand Island	1371	4143	3761
Lincoln (U)	1303	3782	3490
Norfolk	1501	4563	4161
North Platte	1288	4294	3852
Omaha	1354	3972	3675
Scottsbluff	1175	4015	3925
Valentine (U)	1405	4617	4091
NEVADA			
Elko	1062	4130	4241
Ely	1019	4007	4232
Las Vegas	497	1384	1622
Reno	952	3315	3474
Tonopah	907	3041	3323
Winnemucca	933	3621	3765
NEW HAMPSHIRE			
Concord	1216	4254	4299
Mt. Washington Obs.	1560	7555	
NEW JERSEY			
Atlantic City (U)	978	2715	2502
Newark	1013	3005	2951
Trenton (U)	1014	3002	2856
NEW MEXICO			
Albuquerque	736	2230	2727
NEW MEXICO (Cont'd.)			
Clayton	896	2731	2986
Roswell	703	2029	2202
NEW YORK			
Albany	1279	4050	3901
Binghamton	1356	4290	4193
Buffalo	1243	3733	3695
New York (U)	995	2903	2766
New York	991	2807	2724
Rochester	1296	3894	3765
Schenectady	1227	3797	
Syracuse	1307	3918	3594
NORTH CAROLINA			
Asheville (U)	937	2670	2427
Asheville	964	2870	
Charlotte	737	2083	1978
Greensboro	880	2550	2319
Hatteras (R)	777	1758	1315
Raleigh	802	2348	2036
Wilmington	708	1820	1402
Winston-Salem	837	2400	2255
NORTH DAKOTA			
Bismarck	1867	5950	5254
Devils Lake (U)	1936	6361	5769
Fargo	1826	5825	5399
Grand Forks	1931	6221	
Pembina	1938	6196	
Williston (U)	1800	5909	5271
OHIO			
Akron	1217	3716	3464
Cincinnati (U)	1002	2781	2653
Cincinnati	1104	3161	3028
Cleveland	1151	3436	3313
Columbus	1152	3306	3233
Dayton	1193	3431	3222
Sandusky (U)	1186	3413	3238
Toledo	1266	3840	3573
Youngstown	1221	3745	3437
OKLAHOMA			
Oklahoma City	888	2488	2282
Tulsa	905	2410	2238
OREGON			
Astoria	712	3142	2733
Burns (U)	1202	4121	4103
Eugene	712	2815	2770
Meacham	1135	4618	4348
Medford	747	2610	2711
Pendleton	953	3396	3161
Portland (U)	693	2559	2418
Portland	770	2896	2673
Roseburg	716	2588	
Salem	736	2800	2640
Sexton Summit (R)	968	3707	3278
PENNSYLVANIA			
Allentown	1103	3462	3337
Harrisburg	1015	3181	3022
Philadelphia (U)	954	2687	2557
Philadelphia	1011	2930	2777
Pittsburgh (U)	1050	3061	2882
Pittsburgh	1149	3461	3384
Reading (U)	995	3013	2888
Scranton	1222	3785	3413
Williamsport	1115	3560	3382
RHODE ISLAND			
Block Island	1015	3096	2989
Providence	1066	3449	3346
SOUTH CAROLINA			
Charleston (U)	557	1332	1103
Charleston	610	1586	1250
Columbia	683	1842	1544
Florence	672	1826	1603
Greenville	739	2085	1873
Spartanburg	745	2099	1881
SOUTH DAKOTA			
Huron	1732	5347	4626
Pierre	1642	5162	
Rapid City	1294	4427	4219
Sioux Falls	1663	5099	4637
TENNESSEE			
Bristol	1010	2861	2506
Chattanooga	828	2339	2105
Knoxville	890	2489	2214
Memphis	806	2146	1973
Nashville	895	2468	2150
TEXAS			
Abilene	666	1692	1721
Amarillo	844	2428	2651
Austin	445	1105	1130
Brownsville	118	295	437
Corpus Christi	228	563	695
Dallas	615	1566	1477
Del Rio	423	1060	1004
El Paso	468	1296	1756
Ft. Worth	625	1589	1512
Galveston (U)	291	689	758
Galveston	303	707	780
Houston (U)	320	782	843
TEXAS (Cont'd.)			
Houston	342	849	903
Laredo	227	511	576
Lubbock	751	2076	2256
Midland	604	1573	
Port Arthur	380	951	993
San Angelo	574	1470	1410
San Antonio	413	1024	1062
Victoria	305	759	760
Waco	546	1385	1311
Wichita Falls	759	1981	1937
UTAH			
Milford	886	3185	3828
Salt Lake City	908	3135	3473
VERMONT			
Burlington	1400	4475	4385
VIRGINIA			
Lynchburg	883	2692	2471
Norfolk	854	2246	1986
Richmond	896	2574	2360
Roanoke	910	2712	2472
WASHINGTON			
Olympia	833	3458	3122
Seattle (U)	714	2855	2529
Seattle-Tacoma	800	3360	3025
Spokane	1114	4287	3993
Stampede Pass (R)	1298	5860	5111
Tatoosh Island (R)	730	3593	3193
Walla Walla (U)	931	3240	2989
Yakima	1161	4175	3657
WEST VIRGINIA			
Charleston	1049	2940	2607
Elkins	1211	3662	3312
Huntington (U)	1012	2797	2434
Parkersburg (U)	1072	3013	2773
WISCONSIN			
Green Bay	1456	4657	4641
La Crosse	1527	4649	4459
Madison (U)	1345	4227	4164
Madison	1357	4302	4269
Milwaukee	1234	3961	3999
WYOMING			
Casper	1161	4124	4345
Cheyenne	1113	3893	4137
Lander	1327	4459	4833
Sheridan	1352	4635	4505

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

January 1956

Place	Date	Time	Length of path miles	Width of path yards	Number of persons Killed	Number of persons Injured	Estimated damage by catagories † Property (exclusive of crops)	Estimated damage by catagories † Crops	Character of storm	Remarks
KANSAS Western and southern portions	1	Day							Wind and dust	Storm began early in morning in northwestern part of State and progressed southeastward across the State, with little evidence of dust after 8 p.m., in extreme southeastern corner of Kansas. By 6:30 a.m., northwest winds reached 37 m.p.h., in gusts at Goodland and visibility was reduced to 1-1/2 miles by blowing dust. Winds increased to 50 m.p.h., by 10:30 a.m., and visibility was reduced to 1/16 mile for several hours. After 3 p.m., wind quieted down and by evening visibility had increased to 10 miles. Most intense part of storm at Garden City and Dodge City was from about 10:30 a.m., to 2 p.m., when gusts of 50 to 60 m.p.h., from northwest recorded and visibility reduced to 1/2 mile. At Wichita, lowest visibility was only 3/4 mile at 12:48 p.m., and highest gust of wind 44 m.p.h., from west-northwest at 10:28 a.m. Top of dust reported as 5,900 feet m.s.l., near Wichita. In extreme southeast, cooperative observers stated sun was obscured last half hour before setting and visibilities were about 1 mile. Occasional southern sloping fields suffered most damage from wind.
	1									Minor storm also reported in western half of South Dakota.
WASHINGTON	1-6					3			Rain, snow, and thunderstorm	Continuous heavy rain in lower elevations of west, snow in mountains, and rain and snow in east. Thunderstorm occurred with passage of frontal system across State on 4th. Heavy rain and thunderstorm activity in west. 4-lane highway bridge destroyed over Salmon Creek a few miles north of Vancouver. This loss estimated at $75,000. Snow slides blocked highway passes. 1 family narrowly escaped serious injury when their car was covered by snowslide on Snoqualmie Pass. 3 persons injured when landslide destroyed their home in Seattle. Several residences and other buildings in western Washington damaged or destroyed by landslides. Many streams in east were out of bank as result of rain and rapidly melting snow on 4th. Soil erosion serious in several localities. Highway damage extensive in several places in southern half of east. Rail and highway traffic delayed by landslides in lower elevations of west.
IOWA Iowa City	3					1	1	1	Wind	Carpenter fell through stair well, resulting in back and arm injuries.
OREGON	4-6		300-400	*200-300	4	Several	5	1	Wind, rain, and snow	High winds accompanied by heavy rains becoming wet, heavy snow in some areas. Series of storms which began moving inland from Gulf of Alaska across northern Pacific Coast on 2d touched northern border of Oregon on 3d, when moderate snowstorm in Columbia Gorge halted over a thousand automobiles for several hours. On 4th, gusts recorded between 50 and 65 m.p.h., over much of western portion of State, with considerably higher peak speeds estimated in more exposed areas. Heavy rains turned to wet, heavy snow on evening of 5th and morning of 6th at many points, particularly in upper Willamette and upper Umpqua Valleys. Ground saturated from very heavy rainfall in December afforded only very minimum support to tree roots, power and telephone poles, and even foundations to hillside buildings. This combination of wind, rain, and snow toppled hundreds of utility poles over State as well as thousands of trees, many of which fell across power and telephone lines. These utilities suffered greatest damage from a single storm in several years, as many telephones out of operation in practically every community; power interruptions also numerous and widespread. Their combined damage estimated near $275,000. Winds also caused several hundred dollars damage to windows and roofs, particularly in coastal areas. Hanger at Lebanon demolished, resulting in $2,600 damage to it and a plane stored inside. Rapid runoff from heavy rains produced heavy erosion in many agricultural areas and damaged a number of county roads and several smaller bridges. Water accumulated in low-lying areas to depth of several feet, flooding basements and even homes. Many slides, some not yet completely cleared from December rains, were reactivated. Hundreds of roads closed for varying periods of time; near Multnomah Falls in Columbia Gorge, 5 cars of freight train derailed; in Portland, several homes suffered new or additional major damage. Slides carrying trees with them also pushed out utility poles and lines. Snow halted traffic over Cascades and some Coastal Range passes and made many areas in Willamette and Umpqua Valleys extremely hazardous to motorists. Large number of auto accidents resulted. Weather contributing cause to 4 traffic fatalities in State.

See footnotes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

January 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	7									Minor storm reported in central California.
	7-14									Minor storms reported at Caesars Head, S. C.
NEW ENGLAND	8	Early a.m.-evening			4	Several hundred		1	Ice (glaze)	One of most severe icestorms of recent years in Northeast moved down from northern Maine in early morning. By midday it had covered most of New England with sheet of ice that made walking, driving, and other forms of transportation extremely difficult and hazardous. In Boston bus transportation service halted for several hours. Glazing conditions lasted from 6 to 8 hours before rising temperatures restored relatively safe footing. Property damage consisted of broken branches, broken powerlines, and automobiles damaged in collisions.
NEW ENGLAND Eastern and southern portions.	8-11						6	1	Wind and rain	One of longest enduring wind- and rainstorms of record in Northeast buffeted eastern and southern New England for 4 successive days. Major loss suffered by Maine lobstermen as storm-driven tides ripped and destroyed their gear. Parts of Maine shore littered with traps, buoys, and warp from as far away as 10 miles offshore. High seas and pounding waves also did considerable damage to shore properties and installations elsewhere along New England coast. Farther inland heavy rains caused many flooded cellars. Runoff from rain and snowmelt swelled rivers to near flood stage, but local floods due mostly to ice jams at river bends, which caused waters to back up and overflow surrounding low spots. Additional serious damage done to many roads and highways by washouts and upheavals, occasioned by mild temperatures attending storm.
NORTH CAROLINA Dare and Currituck Counties	8-12						5		Wind and high tides	Nearly stationary low pressure storm off northern North Carolina coast caused high tides and rough seas which destroyed 5 cottages, damaged others, and washed out section of highway. Houses destroyed were in Kitty Hawk area, highway damage mostly on Hatteras Island.
	8-12									Minor storm also reported in central and eastern portions of South Dakota.
VIRGINIA	9					6		1	Wind, glaze, and high tides	Severe extra-tropical storm which lingered off coast for several days. Walks, seawalls, and beaches damaged in Virginia Beach, Norfolk, and Portsmouth areas from wind and tides. Injuries were from accidents in Arlington and Fredericksburg areas, due to glazed highways which caused some schools to close. Storm moved north-northeastward.
PENNSYLVANIA	9-10						6	1	Ice	Practically all sections of State received ice damage. No large local losses, but area affected so large that damage to antennas, roofs, trees, and automobiles was appreciable on statewide basis.
	10									Minor storm reported in northern Georgia.
HAWAII	11-13						4		Wind and rain	Damage to buildings in vicinity of Kekaha, Kauai, $25,000; in Honolulu, $11,000; unestimated damage in windward sections of Oahu and Kona districts.
CALIFORNIA Northern and central portions	13-15	Evening 13th-afternoon 15th					6		Rain	Storm moved east-northeastward with heavy continuous rain which resulted in flood conditions and slides. Local lowland flooding around Guerneville resulted in light damage. Local flooding in many communities in San Francisco Bay area. Low-lying areas in Marin County hardest hit, particularly Tamalpais Valley where hundreds of persons were evacuated; also Bolinas on the coast where serious landslides resulted. 4.70 inches of rain recorded at San Francisco during period. Mudslides caused considerable damage in areas of new construction in Peninsula cities south of San Francisco. Heavy rains along north coast on 14th and 15th caused considerable damage to previously weakened highways and railroads.
KANSAS Western half	14	9 a.m.-3 p.m.							Wind and dust	Conditions in storm not quite as severe as in storm on January 1. Lowest visibility was only 3/4 mile for 2 hours from 9 to 11 a.m., at Goodland. Visibility was reduced to 2 miles at Hill City, Russell, Garden City, and Dodge City for several hours near midday, and to 3 miles at Hutchinson and Wichita for short periods late in afternoon. Peak wind speed was 46 m.p.h., from north-northwest at both Hill City and Garden City at about 1 or 2 p.m. Some soil sifted from unprotected fields. Storm moved southeastward.
	14-15									Minor storm reported in northern half of South Dakota.

See footnotes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OREGON	14-16		300	*100-200			5	3	Rain, wind, and snow	Heavy rains in western Oregon accompanied by high winds in coastal area, largely snow east of Cascades. Heaviest damage again due to slides and destruction of utility poles and lines. Losses to power and telephone installations estimated at $95,000 in Oregon resulted from: (1) High winds in coastal area that dropped trees across powerlines; (2) slides which pushed poles out of place; (3) slides which pushed trees through lines tangling them. Utility service interruptions numerous over State, some lasting 2 to 3 days. Rapid runoff from rains and/or melting snow damaged several county roads and bridges through central Oregon, and near Prineville rapidly rising Crooked River surrounded 12 homes, flooding some of them. On Willamette River persistent high water continued to interrupt movement of large, log rafts on which substantial portion of paper and lumbering industries in and around Portland are dependent. Scores of roads over western Oregon closed by slides. In Portland a number of streets either covered over from hillslides above or they themselves slid out. Damage to a number of yards and homes continued. Storm moved eastward.
WASHINGTON	14-23						5		Rain and snow	Heavy rain in lower elevations of west, snow in mountains, and rain and snow in east. Snowslides frequent in mountains, blocking highways, and landslides increased in lower elevations of west. Roofs of several warehouses and other buildings along east slope of Cascades collapsed from weight of snow. Runoff water from melting snow and rain damaged roads and property in some low-lying localities. Several residences in vicinity of Seattle damaged or destroyed by landslides. Damage in 1 slide area north of Seattle estimated at $100,000. Rail traffic delayed for several hours by slide between Seattle and Everett. Overall damage to highways and property as result of rain, snow, and slides estimated to be several hundred thousand dollars.
IOWA Northwestern half	15-16	All day				1	4	1	Snow, wind, and cold	Highways slick, resulting in several vehicle accidents; 1 man hospitalized.
KENTUCKY	16					1			Ice (glaze) and snow	Snow-and ice-covered streets caused numerous minor accidents and at least 1 injury.
TEXAS	17				4				Snow and ice	Snow occurred across northern tier of counties and snow cover extended from Texarkana south to College Station and west on line north of Austin to Marfa. Belt of sleet and freezing drizzle extended about 20 miles south of snowline through Austin. 3/4-inch ice coat broke lines and tree limbs, isolating Burnet for about 12 hours. Many schools closed because of icy roads. 4 fatalities due to automobile accidents on icy roads and bridges.
OREGON Columbia Basin (northern portion)	17-18	6 p.m.-8 a.m.	135	*15-25			4	1	Rain and ice	Freezing rain often mixed with snow occurred in northern Columbia Basin from Wamic to Weston during night and early morning. Heavy coating of ice formed on trees, highways, and utility lines. These produced several traffic accidents in some of which damage to cars was extensive. In Wasco to Kent area and in several other communities a number of trees either completely broken down under weight of ice or most of their larger branches broken. Several houses suffered minor damage as tree limbs came down on them. Also, many communities throughout storm area suffered several hours of interruption to power and telephone services as ice built up on transformers, burning them out or as lines gave way under weight of ice. Between Athena and Weston 10 power poles came down across highway. Storm moved eastward.
KENTUCKY Western portion	18								Ice and snow	Roads covered by sheet of ice as result of sleet and snow. Accident reports numerous.
KENTUCKY Northern portion	18-19				1	Several			Snow	Snowfall, measuring more than 5 inches, jammed traffic, caused several schools to close, cancelled airline flights, and caused accidents.
KANSAS Western and southern portions	21-26								Rain, glaze, and sleet	From 21st to 24th freezing drizzle and sleet fell in many parts of Kansas, with deposits occasionally sufficient to form glaze on wires and to make traffic hazardous. Most trouble was experienced in northwest. Accidents were of minor nature. Length of time and widespread character of this storm was more significant than its intensity.

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons Killed	Number of persons Injured	Estimated damage by categories † Property (exclusive of crops)	Estimated damage by categories † Crops	Character of storm	Remarks
FLORIDA Northern and central portions	23	Afternoon-evening				2	3	1	Wind, rain, and electrical	Thunderstorms with strong winds, heavy rain, and lightning. Property damage mostly due to trees falling on automobiles and buildings. Wind uprooted tree which fell on automobile, injuring passenger, the other injury due to lightning.
	23									Minor storm also reported in Clarke, Oconee, Hall, and Troup Counties, Ga.
HAWAII Island of Kauai (northern portion)	24-25				1		5		Rain	Heaviest rain of record in area; plantation flumes, dams, reservoirs, railroads, and other facilities washed out, severely damaged, or ruined. Estimated cost of reconstructing ruined public roads, including bridges, $300,000. Death caused by drowning.
KENTUCKY Northern portion	25					2			Snow	Snow up to 6 inches caused minor skidding accidents.
CALIFORNIA	25-27				1				Wind and rain	Could be classed as 2 storms: One low pressure area moved eastward across central California on 25th causing rain and high winds over north and central, and waves on trailing cold front caused continuous heavy rain in south on 25th and 26th. Another storm front moved across State on 26th and 27th causing heavy precipitation in central and south and high winds over much of State. Rain and wind with gusts of 50 to 60 m.p.h., in Merced Sacramento area and 30 to 40 m.p.h., along central coast on 25th. Strong winds and heavy rains on 26th and 27th in central and south. Wind gusts of 70 m.p.h., at Blue Canyon, 58 m.p.h., at Arcata, 60 m.p.h., at Sacramento Airport, and 37 m.p.h., at Los Angeles Airport. High winds on 25th uprooted trees which caused power failures in Grass Valley area, and falling tree crushed top of automobile in Walnut Creek area. Flooding intensified by unusually high tides which flooded lowland areas in Delta and Bay areas. Levee at Alverado gave way, flooding several hundred acres of farmland. Torrential rains measured 7.84 inches during period in Santa Margarita area; 6.11 inches recorded at Los Angeles in 24-hour period which was third greatest 24-hour rainfall of record. Largest single report of damages was flooding and resulting fire at Ford Motor Company plant at Long Beach when dike broke under the influence of flood waters and high tide. Other damage largely due to inundation of many homes in low-lying sections, mostly in El Segundo, Torrance, Gardena, Venice, Lawndale, Wilmington, Playa del Rey, and Manhattan Beach areas. About 1,500 persons evacuated from their homes. Small boy fell into storm drain. Flooding also occurred in Fresno River area on 25th and 26th, with much agricultural land flooded.
OREGON Northern portion	26-27	Noon of 26th-through 27th	250	*50-150			4	1	Snow	In lower Willamette Valley and in sections of Columbia Basin snowfall very heavy. In Portland, greatest depth in 13 years recorded when maximum of 10.5 inches reached early in morning of 27th. Numerous schools closed over northwest. In lower Willamette Valley and Columbia Gorge innumerable traffic snarls developed as this snow rapidly packed into ice sheet over highways. In city of Portland from evening of 26th through 28th there were approximately 390 auto accidents due to hazardous conditions created by storm. In Hood River County another estimated 100 accidents reported due to similar causes. Both power and telephone lines again gave way under combined weight of snow and numerous trees or large branches which were broken down across them. A few cases of snow causing power outages. Snow removal cost city of Portland between $15,000 and $18,000. Storm moved eastward.
	26-27									Minor storm also reported in northern San Francisco Bay area, Calif.
SOUTH DAKOTA	27-28					Several	4	1	Rain, sleet, glaze, snow, and blizzard	Freezing drizzle, rain, and sleet fell in all but northwestern portion. Heaviest accumulations in extreme east. 5 miles south of Menno, school bus with 40 passengers slid off road, down very steep bank and overturned, injuring several persons. Telephone and telegraph lines downed, apparently by ice, in Brookings-Watertown area. Thunderstorms, unusual at this season, reported at Philip and Roscoe on 27th. Considerable blowing snow, with blizzard conditions locally in north-central.
IOWA Clinton	28	Early morning			1	3	3	1	Freezing rain (glaze)	Slippery highways resulted in several traffic accidents, 1 fatal.
LOWER MICHIGAN	28	Daytime			9	75	4	1	Freezing rain (glaze)	Freezing rain began in extreme south during morning and spread northward during day. Most deaths and

See footnotes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

January 1956

Place	Date	Time	Length of path miles	Width of path yards	Number of persons		Estimated damage by catagories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
LOWER MICHIGAN (Contd.)										injuries caused by auto accidents on slippery streets and highways, but 2 deaths and many injuries resulted from falls on ice.
ARKANSAS Faulkner and White Counties	28	9:30-11p.m.	29	100-200	0	12	4	1	Tornado, wind, rain, and electrical	Tornado moving northeastward destroyed 3 homes, damaged 21 others, and destroyed 7 buildings, and damaged 6. Storm traveled from Wooster to 1 mile south of Greenbrier in Faulkner County; then went aloft for 10 miles, returning to ground in Barney-Enola area in Faulkner County and remained on ground to Rosebud in White County. Principal damage in Faulkner County.
TENNESSEE Shelby County Airport (3 miles south of)	29	9 a m.	8	600			4	1	Wind	No evidence of tornado damage. Damage spotty, with long gaps between places; 36 houses, 8 barns, and 10 chicken houses damaged.
KENTUCKY Southern portion	29								Rain	Heaviest 1-day rainfall in 31 years caused derailment of freight train and flooded scores of basements.
	29									Minor storm also reported in Tulsa, Craig, Rogers, and Mayes Counties, Okla.
GEORGIA Blakely, Early County	30	P.m.			0	0	1	1	Tornado (suspected) and wind	Referred to as "small, dip-down tornado"; lifted up large, metal awning and tossed it on top of store.
	31									Minor storm reported in Dade County, Ga.

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* Miles instead of yards.

† This is a new form of presentation of storm damage estimates. The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total, storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JANUARY 1956

The most significant flooding during January occurred as in December 1955 on the West Coast. The floods were not as severe as in December, but caused considerable damage as temporary bridges and much of the repair work that had been done to roads, etc., were destroyed. The levee on the Feather River at Nicolaus, Calif., which had been only partially closed, was washed out again. Several houses and ranch buildings were under water to depths of 20 to 25 feet for approximately 6 weeks. Yuba City, Calif., was evacuated as a precautionary measure until danger of a repeat performance had passed. During December, this city was inundated to depths of 6 to 8 feet. Flooding elsewhere in the country was comparatively minor and widely scattered.

ATLANTIC SLOPE DRAINAGE

Mild weather and a rainy period from the 8th to the 16th over northern New England caused practically all of the snow in Maine and New Hampshire to melt and the ice to break up on the rivers. Some ice jams occurred along the middle reaches of the Saco and Androscoggin in Maine and on the Suncook and Pemigewassett in New Hampshire between the 10th and 13th. No property damage was caused and apparently no buildings were affected. Despite above-normal rain, reservoirs are still generally well below normal. Streams and ground water levels were slightly above normal at the end of the month.

Streams over the remainder of the Atlantic Slope drainage remained at low stages throughout the month.

EAST GULF OF MEXICO

The Chattahoochee and Flint Rivers in Georgia, the Apalachicola in Florida, and the Coosa and Cahaba Rivers in Alabama reached record low levels for the month of January. The Apalachicola at Chattahoochee, Fla., reached the all time record low of -1.5 feet established on September 24, 1925. It was the fourth consecutive month with runoff below normal in Alabama.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The snow cover over the northern half of Minnesota kept increasing throughout January. It was the heaviest snow cover in 5 years. A comparison of snow depths on January 31 with that of other years is given in the following table:

Comparative Snow Depths

Cities	Year 1956	Year 1955	Year 1952
Bemidji	26	8	17(Est)
International Falls	27(Est)	15	11
Duluth	29	17	20
Alexandria	16	6	13
New Ulm	6	4	10(Est)
Minneapolis	11	6	8
Rochester	10	3	7

The frost penetration is shallow in snow-covered areas, due to occurrence of early snow. In areas where the ground is bare or under concrete, the penetration is quite variable, running from 12 inches to as much as 6 feet. Under snow, the frost penetration varies from 3 to 20 inches.

Missouri Basin.--An unusual amount of ice collected on the Yellowstone and its tributaries during the winter and ranged in thickness from 1 to 3 feet between Park City and Miles City, Mont. A few minor ice jams were occurring at the end of the month. Along the main stem of the Missouri, the thickness of the ice ranged from 35 inches at Bismarck, N. Dak., to 20 inches at Sioux City, Iowa.

Precipitation over the Dakotas between Bismarck and Sioux City, Iowa, during December and January averaged 135 percent of normal. Snow cover at the end of the month ranged from 3 inches over the White and Niobrara Rivers in South Dakota to 11 inches over the lower James and the main stem of the Missouri between Bismarck and Mobridge, S. Dak.

A record low stage of 0.49 foot continued on the Marais des Cygnes River at Ottawa, Kans., throughout the month.

Ohio Basin.--Heavy rains on the 29th and 30th, supplemented by snowmelt runoff, caused a rapid rise to above flood stage along the Monongahela River and its tributaries between the 30th and 31st. Rainfall averaged 1.5 to 1.75 inches over the Monongahela Basin during the 36-hour period with the depth of snow on the ground at the beginning of the storm varying from a trace to 11 inches, with the heavier amounts reported over the headwater areas of the Cheat and Youghiogheny River Basins. The flood on Tenmile Creek (tributary of West Fork River) was described as one of the worst in the history at Wallace, W. Va. Water was reported as high as 5 feet in the streets and caused damage to several homes and affected traffic.

The Little Kanawha River exceeded flood stage slightly at Glenville, W. Va., on the 30th from the 1- to 2-inch rainfall during the period from the 28th to the 30th. The runoff was high, averaging nearly 2 inches, due to snowmelt and rain falling on frozen ground.

The moderate to heavy rains on the 28th and 29th caused Paint Creek to exceed flood stage for a few hours on the 30th.

The heavy rainfall on the 29th and 30th caused the Green and Barren Rivers in Kentucky to rise to above flood stage on the 30th. They were still in flood and rising as the month ended. The rainfall during the 2-day period averaged 5.9 inches in the area from Franklin to Bowling Green to Munfordville.

The flooding in the Cumberland River Basin was due to heavy rainfall (4.1 inches) during the period from the 28th to the 30th. The excessive rains caused creeks in the Nashville area to go out of their banks and kept the Fire Department busy pumping water out of basements. A large barge loaded with about 2,500 barrels of bulk cement broke loose and drifted in against Cheatham Dam and sank.

The flooding in the Tennessee River Basin along the Duck River was due to heavy rain (3 inches) during the 24-hour period ending on the morning of the 30th. Flooding was limited to lowlands and to a few basements, and damages resulting therefrom were negligible.

Lower Mississippi Basin.--The Mississippi River reached a record low stage of -5.4 feet on the 24th at Memphis, Tenn. The previous record was -3.6 feet on November 21, 1951. At Vicksburg, Miss., it reached a low January stage of -5.6 feet on the 28th, which was the lowest January stage on record with the exception of -6.2 feet recorded in 1940.

PACIFIC SLOPE DRAINAGE

Floods occurred again on the West Coast for the second consecutive month. Some of the same areas that were hit in December were hit again in January. However, the floods were not as severe and occurred in two separate periods. The first floods were moderate and occurred from the 14th to the 16th in the area from San Francisco and Sacramento northward into extreme southwestern Oregon. Yuba City, Calif., which was inundated to depths of 6 to 8 feet during the December floods, was evacuated until danger of a break in the levee on Feather River, repaired since the December flood, had passed. About 10 days later, severe floods occurred in southern California. In the Los Angeles area, where the total storm precipitation was nearly 8 inches, flow was record high at several gaging stations. A few peak discharges in the upper Salinas River Basin exceeded those of December, but were not record breaking.

CALIFORNIA COAST DRAINAGE

Storm of January 13-15

The weather in California and southern Oregon during January continued similar to the weather in mid-December which resulted in record-breaking floods. Frontal systems moved across the area at frequent intervals and brought enough precipitation to maintain relatively high stages on most streams from San Francisco and Sacramento northward. Conditions, therefore, were favorable for high runoff when the first major storm moved across the area on the 13th, 14th, and 15th. Most stations in the Sierras recorded 4 to 7 inches of rain which extended to high elevations. Some snowmelt occurred from the fringe area of the snowpack between 5,000 and 6,000 feet, but most of the runoff was due to rain alone.

The flooding in the Russian Basin was due to rainfall averaging 4.5 inches. One of the heaviest amounts recorded was 6.65 inches at Willits Howard Forest Ranger Station. Only light flooding occurred in the headwaters on the evening of the 15th. Further downstream at Guerneville, the crest was 5.5 feet above flood stage. This was considerably less than the crest during December which was 18.6 feet above flood stage. Damage was light and consisted primarily of damage to riverbank cabins and property in resort areas.

Local flooding occurred to many communities in the San Francisco Bay area. Low-lying areas in Marin County were hardest hit, particularly in Tamalpais Valley where hundreds of people were evacuated over the 2-day period due to high tides and runoff from the heavy rains. Serious landslides occurred at Bolinas on the coast.

Light to moderate flooding occurred on the Smith and Eel Rivers between the 14th and 16th. The flood crests were considerably lower than during December. The Eel River, for example, crested 6.4 feet lower at Fernbridge than the previous month. Extensive damage occurred as most of the roads, hills, and banks were still waterlogged from the December floods. Temporary bridges and much of the repair work to both county and state roads were destroyed. The Northwestern Pacific Railroad was kept closed another week or two, due to bad slides.

On the Upper Sacramento River, the peak tributary inflow below Shasta Dam was much greater than at Christmastime. A considerable amount of local flooding occurred near the small creeks in the upper Sacramento Valley, but the only flooding along the main stem was at Red Bluff. Overflow continued at all fixed sill weirs most of the month.

On the Feather River at Nicolaus, Calif., the levee break during the December floods had been only partially closed, and was washed out again with renewed flooding in Reclamation District 1001. Houses and ranch buildings in the 30,000-acre district were under as much as 20 to 25 feet of water for approximately 6 weeks. During the high stages of midmonth, water was backed up through the levee cut on the right bank of the Feather and Verona into Levee District No. 1 of Sutter County.

Yuba City on the Yuba River was evacuated by State Civil Defense on the 14th. The "bow levee" at the Gum Tree break site had been built to an elevation of 68 to 70 feet and held during the current flood.

Moderately high peak flows occurred on the Cosumnes, Mokelumne, and Stanislaus Rivers with some minor flooding occurring through the old levee breaks.

In southern Oregon, the Rogue and Umpqua Rivers rose rapidly, but crested slightly below flood stage.

Storm of January 25-27

The second, flood-producing storm occurred on January 25-27 in the coastal sections of southern California and in the San Joaquin Basin. This storm was similar to the storm of December 31, 1933-January 1, 1934, both as to storm type and amounts. Total rainfall ranged from 4 to 9 inches along the coast, 9 to 13 inches in the foothills and mountains, and 1/2 to 2 inches in desert areas.

Most of the flooding was due to overflow of storm drains and small creek areas on the coastal plain. Very little runoff occurred in foothill and mountain areas due to the soil moisture deficiency resulting from a period of over 3 weeks with no measurable rain. Major stream channels generally carried from one-fourth to one-half of their capacity, but some damage occurred, due to undercutting at the interface between paved and unsurfaced channel sections. The largest single catastrophe was the flooding and fire at the Ford Motor Company plant at Long Beach, Calif. Some 1,500 people were evacuated from their homes during the height of the storm. Considerable damage resulted from the partial inundation of many homes in low-lying sections in the communities of El Segundo, Torrance, Gardena, Venice, Lawndale, Wilmington, Playa del Rey, and Manhattan Beach. Streets, highways, and commercial establishments were also damaged.

Stream flow in the San Joaquin Basin was considerably less than during December and most flooding occurred on agricultural land. The Chowchilla and Fresno Rivers inundated land around Chowchilla and Madera, but the heaviest uncontrolled runoff was from the Kaweah and Tule Rivers. Additional damage was sustained by levee systems of these rivers, but most inhabited areas were saved from flooding by constant repairs to protective systems. Highway 99, to the southeast of Visalia, was flooded for a short time, temporarily restricting travel. A stream normally used for irrigation purposes, and running under one of the main streets of Visalia, became blocked and flooded about one-third of the city, causing damage to homes and business establishments.

A minor but rapid rise occurred on the north fork of the Kern River on the morning of the 25th. Peak flow was 7,000 c.f.s., at Kern River Powerhouse #3. Minor flooding occurred on the lower Caliente Creek and on the lowlands east of Highway 99 on Poso Creek, beginning on the 25th and continuing into the 27th.

Columbia River Basin.--Precipitation in the Columbia Basin during January was well above normal, except in three small areas in the northern portion. In the remaining areas, January precipitation varied generally between 150 and 250 percent of normal. In the Bitterroot Basin in Montana and the lower Kootenai, the precipitation ranged from 70 to 100 percent of normal. This was the fourth consecutive month with precipitation over the lower half of the basin averaging considerably above normal.

Several tributaries of the Willamette River exceeded flood stage during the month. The only flooding along the Willamette was at Harrisburg, Albany, and Oregon City, Oreg. Damages were confined mostly to areas that have no surface drainage.

FLOOD STAGE DATA

Table 5

(All dates in January unless otherwise specified)

JANUARY 1956

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	Ft.			Ft.	
Pemigewassett: Plymouth, N. H.	11	10	10	11.1	10
Suncook: North Chichester, N. H.	10	10	11	12.2	10
Nashua: East Pepperell, Mass.	8	10	13	10.2	11
Merrimack: Lawrence, Mass.	20	11	11	21.5	11
MISSISSIPPI SYSTEM					
Ohio Basin					
West Fork: Weston, W. Va.	17	30	30	17	30
Clarksburg, W. Va.	7	30	30	7.2	30
Cheat: Parsons, W. Va.	11	30	30	11.0	30
Monongahela: Lock 5, Brownsville, Pa.	23	30	31	24.0	30
Lock 4, Charleroi, Pa.	24	30	31	27.1	30
Lock 2, Braddock, Pa.	26	30	31	27.3	31
McKeesport, Pa.	12	30	31	12.5	31
Little Kanawha: Glenville, W. Va.	23	30	30	23.4	30
Paint Creek: Bourneville, Ohio	10	30	30	11.15	30
Barren: Bowling Green, Ky.	28	30	1/		
Green: Munfordville, Ky.	28	30	1/		
Brownsville, Ky., Lock 6	28	30	1/		
Woodbury, Ky., Lock 4	33	30	1/		
Cumberland: Nashville, Tenn.	40	31	1/		31
Clarksville, Tenn.	46	30	Feb. 2	49.2	31, Feb. 1
Duck: Shelbyville, Tenn.	719	30	30	721.3	30
Shelbyville (nr), Tenn.	21	30	30	22.3	30

* Provisional
1/ Continued at end of month

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
PACIFIC SLOPE DRAINAGE	Ft.			Ft.	
San Joaquin: Newman, Calif.	16	27	31	16.9	30
Sacramento: Red Bluff, Calif.	23	14	15	23.7	15
Moulton Weir, Calif.	76.8	1	7		
		7	22	82.5	17
		23	30		
Colusa Weir, Calif.	61.8	1	31	68.9	17
Tisdale Weir, Calif.	45.5	1	31	50.5	17
Fremont Weir, Calif.	33.8	1	31	38.3	17
Rio Vista, Calif.	9	25	25	9.6	25
		26	26	9.8	26
		27	27	9.2	27
Russian: Hopland Largo Station, Calif.	21	15	15	21.6	15
Guerneville, Calif.	29	8	[illegible]	30.0	[illegible]
		15	16	34.6	16
Smith: Fort Dick, Calif.	30.5	15	15	32.0	15
Redwood Creek: Orick, Calif.	19	15	15	20.0	15
Eel: Fernbridge, Calif.	17.5	14	16	21.3	16
Columbia Basin					
North Fork: Westfir, Oreg.		15	15	12.0	15
Marys: Philomath, Oreg.		4	5	20.7	4
Santiam: Jefferson, Oreg.	13	4	5	13.8	4-5
		7	7	13.0	7
		15	16	18.1	16
South Yamhill: Whiteson, Oreg.	38	4	7	45.0	4-5
Pudding: Aurora, Oreg.		5	8	20.6	5
Molalla: Canby (nr), Oreg.	11	4	5	12.0	4
		15	15	12.85	15
Tualatin: Dilley, Oreg.	12	3	8	12.35	17
		5	11	34.4	5
		18	22	30.4	18,19

RAWINSONDE DATA

Average monthly values

Table 20

JANUARY 1953

ALBANY, N. Y.
(1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	- 4.6	73	333	3.5
1,000	31	113			326	3.2
950	31	522	- 6.3	74	339	6.9
900	31	937	- 6.8	76	352	7.5
850	31	1,383	- 6.6	78	356	7.1
800	31	1,857	- 6.3	72	347	6.6
750	31	2,366	- 7.1	67	331	6.4
700	31	2,897	- 9.4	65	325	6.4
650	31	3,472	-12.4	64	308	6.3
600	31	4,074	-15.8	60	299	7.1
550	31	4,727	-19.8	56	293	7.7
500	31	5,426	-24.3	51	287	8.5
450	31	6,192	-29.9	47	266	7.9
400	31	7,014	-36.0	43	260	9.7
350	31	7,927	-42.9		258	9.6
300	30	8,944	-50.1		259	12.8
250	30	10,119	-53.8		264	10.3
200	30	11,551	-53.1		271	14.4
175	30	12,412	-52.3		276	14.7
150	28	13,410	-53.1		277	14.3
125	27	14,583	-54.9		275	11.3
100	25	15,993	-57.6		274	10.5
80	22	17,394	-59.1		268	11.4
60	16	19,194	-59.1		268	10.9
50	16	20,338	-59.0		258	10.0
40	13	21,748	-58.6			
30	9	23,537	-58.2			

ALBUQUERQUE, N. MEX
(838 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	6.2	44	93	0.2
1,000	31	139				
950	31	572				
900	31	1,025				
850	31	1,499				
800	31	1,998	6.1	38	273	2.5
750	31	2,529	2.9	39	275	5.3
700	31	3,078	- .9	43	276	7.1
650	31	3,671	- 4.9	46	283	8.3
600	31	4,290	- 8.5	47	282	11.0
550	31	4,963	-12.6	43	281	11.8
500	31	5,681	-17.6	42	278	13.4
450	31	6,470	-23.0	44	278	16.1
400	31	7,313	-29.3	42	279	14.6
350	31	8,251	-36.7	38	289	13.3
300	30	9,296	-45.2		290	16.0
250	29	10,484	-54.0		290	17.8
200	28	11,893	-59.4			
175	28	12,728	-59.5			
150	28	13,692	-59.9			
125	23	14,816	-61.3			
100	21	16,199	-64.1			
80	16	17,554	-62.7			
60	13	19,334	-62.2			
50	12	20,470	-60.4			
40	9	21,886	-57.4			
30	9	23,710	-55.3			

ANCHORAGE, ALASKA
([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	-12.9	[illegible]	32	0.5
1,000	31	49			22	1.6
950	31	[illegible]	- 9.1	[illegible]	19	4.6
900	31	[illegible]	[illegible]	47	39	4.9
850	31	1,306	[illegible]	45	52	3.7
800	31	1,773	-11.2	46	67	2.4
750	31	2,269	-13.4	44	59	2.8
700	31	2,788	-16.5	12	66	3.4
650	31	3,345	-20.3	41	61	2.4
600	31	3,929	-24.1	46	78	1.6
550	31	4,563	-28.1	44	83	1.9
500	30	5,232	-33.0	13	94	2.4
450	30	5,972	-37.7		109	2.4
400	30	6,770	-42.5		83	2.9
350	30	7,661	-47.8		126	5.2
300	29	8,658	-51.7		127	4.9
250	28	9,839	-53.4		74	3.4
200	28	[illegible]	-51.8		241	3.2
175	26	12,143	-51.4		260	5.6
150	25	13,137	-51.0		254	5.2
125	25	14,321	-51.2		271	8.2
100	22	15,779	-50.9		281	9.4
80	22	17,228	-51.7		273	11.5
60	18	19,101	-52.5		283	14.2
50	18	20,275	-53.2		288	16.1
40	16	21,728	-53.3		289	16.6
30	12	23,550	-55.2			

ANNETTE, ALASKA
(1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	0.5	[illegible]	88	5.7
1,000	31	66			92	5.6
950	31	478	- 2.2	68	119	6.3
900	31	902	[illegible]	71	138	6.7
850	31	1,349	- 7.4	74	152	6.6
800	31	1,819	-10.0	74	[illegible]	5.4
750	31	2,317	-12.7	59	173	6.4
700	31	[illegible]	-15.9	64	183	5.2
650	31	3,397	-19.7	57	191	4.4
600	31	3,981	-23.5	[illegible]	216	5.7
550	31	4,614	-27.9	47	209	5.4
500	31	5,289	-32.3	44	226	5.7
450	30	6,025	-37.1		[illegible]	5.6
400	30	6,827	-42.5		319	5.3
350	30	7,717	-48.3		314	2.3
300	30	[illegible]	-52.2		297	3.2
250	30	9,894	-53.6		270	1.3
200	30	11,335	-50.7		281	2.9
175	30	12,205	-50.6			
150	30	13,208	-50.9			
125	29	14,390	-51.6			
100	29	15,832	-52.8			
80	29	17,266	-54.3			
60	25	19,121	-55.6			
50	25	20,279	-56.4			
40	21	21,703	-57.4			
30	14	23,502	-59.6			

ATHENS, GA.
([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	4.7	67	320	2.8
1,000	31	[illegible]				
950	31	567	5.9	[illegible]	323	3.8
900	31	1,006	4.8	51	326	4.2
850	31	1,171	3.7	49	317	5.7
800	31	1,963	3.3	44	311	8.5
750	31	[illegible]	1.1	[illegible]	300	10.5
700	31	3,037	- 1.7	39	[illegible]	12.6
650	31	3,632	- 5.0	36	299	14.6
600	30	4,251	- 8.8	32	298	18.2
550	30	4,926	-13.1	35	297	20.4
500	30	5,639	-17.9	[illegible]	[illegible]	22.5
450	30	[illegible]	-23.7		[illegible]	[illegible]
400	30	7,269	-30.0	37	[illegible]	27.4
350	30	8,205	-37.3	40	[illegible]	28.7
300	30	9,251	-45.1		[illegible]	[illegible]
250	30	10,446	-52.7		283	34.7
200	29	11,878	-56.1		281	35.5
175	29	[illegible]	-56.2		280	33.0
150	29	13,702	-57.3		[illegible]	[illegible]
125	27	14,840	-59.9		[illegible]	28.0
100	23	16,222	-62.3		[illegible]	21.4
80	19	17,590	-62.4		286	[illegible]
60	13	19,372	-60.6		281	7.5
50	16	20,507	-58.9		272	5.9
40	[illegible]	21,914	-56.6		267	4.5
30	12	23,760	-53.5		286	3.4

BARROW, ALASKA
(1023 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	-27.7	57	213	0.7
1,000	31	171	-23.1	70	245	1.6
950	31	557	-19.9	64	271	2.8
900	31	950	-19.1	61	293	3.4
850	31	1,375	-19.4	60	295	3.8
800	31	1,825	-20.1	57	305	3.5
750	31	2,309	-21.6	58	299	4.2
700	31	2,808	-23.7	57	304	5.1
650	31	3,356	-26.3	54	311	5.7
600	31	3,921	-29.5	52	308	6.3
550	31	4,545	-33.1	46	306	8.1
500	31	5,201	-37.1		306	9.5
450	31	5,931	-41.4		303	11.4
400	31	6,714	-45.9		304	11.0
350	31	7,593	-50.4		303	12.9
300	31	8,589	-54.4		296	12.2
250	29	9,761	-57.2		289	12.3
200	29	11,169	-57.2		278	14.8
175	28	12,018	-57.2		278	14.6
150	27	12,994	-56.7			
125	26	14,154	-57.5			
100	23	15,582	-58.3			
80	22	16,981	-60.3			
60	14	18,777	-60.8			
50	10	19,911	-62.4			
40	5	21,216	-67.3			
30						
20						

BETHEL, ALASKA
(1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	-19.5	74	13	4.9
1,000	31	118			29	6.1
950	31	511	-13.4	60	28	7.4
900	31	920	-11.4	56	19	7.3
850	31	1,359	-10.4	49	10	8.3
800	31	1,825	-11.1	46	1	8.2
750	31	2,323	-12.9	40	359	8.4
700	31	2,842	-15.3	35	355	8.8
650	31	3,404	-18.1	35	355	7.8
600	31	3,993	-21.4	36	358	8.4
550	31	4,629	-25.5	36	359	7.1
500	31	5,314	-30.3	38	6	6.0
450	31	6,059	-35.6		2	6.4
400	31	6,865	-41.1		10	7.0
350	31	7,761	-46.5		28	3.4
300	31	8,771	-51.3		26	3.1
250	30	9,951	-54.6		338	3.9
200	25	11,351	-52.8		339	3.6
175	25	12,213	-51.8		325	5.1
150	22	13,218	-50.5		310	5.9
125	21	14,412	-50.6		283	5.2
100	18	15,855	-50.7		285	6.3
80	16	17,316	-51.6		298	7.1
60	14	19,169	-52.8			
50	13	20,352	-53.9			
40	10	21,806	-53.8			
30						
20						

BISMARCK, N DAK.
(960 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	-15.1	80	46	0.9
1,000	31	189				
950	31	585	-13.8	75	66	.6
900	31	996	- 8.7	68	268	2.0
850	31	1,441	- 5.7	59	291	2.5
800	31	1,917	- 5.2	50	298	4.3
750	31	2,428	- 7.0	49	292	5.7
700	31	2,958	- 9.6	46	290	8.0
650	31	3,532	-12.9	43	291	9.0
600	31	4,132	-16.5	44	285	9.0
550	31	4,784	-20.8	40	283	9.8
500	31	5,478	-25.5	38	285	10.9
450	31	6,245	-30.7	34	289	13.7
400	31	7,060	-36.7		285	14.7
350	31	7,970	-43.7		281	15.3
300	30	8,986	-50.4		282	15.9
250	30	10,160	-55.0		280	15.0
200	30	11,582	-55.4		285	15.7
175	28	12,444	-54.6		284	14.7
150	27	13,431	-54.2		286	16.1
125	27	14,595	-55.5		284	13.7
100	27	16,011	-56.9		286	12.6
80	26	17,424	-58.6		298	11.5
60	24	19,229	-59.3		295	9.6
50	19	20,365	-60.7			
40	16	21,746	-60.6			
30	10	23,523	-61.0			
20						

BOISE, IDAHO
(915 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	1.0	77	141	4.2
1,000	31	143				
950	31	565				
900	31	999	2.5	67	141	4.1
850	31	1,460	.8	63	181	4.0
800	31	1,944	- 2.2	65	228	5.1
750	31	2,460	- 5.6	64	247	7.2
700	31	2,991	- 9.2	65	260	9.4
650	30	3,569	-12.7	59	263	11.2
600	30	4,167	-16.5	55	260	13.0
550	30	4,819	-20.5	56	269	15.8
500	30	5,515	-25.1	55	282	19.2
450	30	6,280	-30.2	54	275	19.3
400	30	7,101	-35.7	52	277	19.8
350	30	8,016	-42.3		288	24.1
300	30	9,043	-48.7			
250	30	10,223	-54.5			
200	28	11,652	-56.3			
175	26	12,501	-54.7			
150	21	13,480	-54.0			
125	17	14,665	-55.9			
100	11	16,074	-56.7			
80	8	17,492	-57.5			
60						
50						
40						
30						
20						

BROWNSVILLE, TEX.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	15.7	88	94	1.3
1,000	31	153	17.4	76	107	2.3
950	31	592	15.6	69	157	4.1
900	31	1,048	14.2	61	182	3.1
850	31	1,529	12.6	50	230	1.9
800	31	2,036	11.4	32	260	4.0
750	31	2,573	8.7	27	267	4.2
700	31	3,140	5.4		272	5.1
650	31	3,744	1.4		279	6.0
600	31	4,380	- 2.8		277	7.3
550	31	5,061	- 7.4		281	6.8
500	31	5,798	-12.6		274	7.4
450	31	6,599	-18.6		280	8.6
400	31	7,460	-25.4		275	8.7
350	31	8,412	-33.0		286	9.2
300	31	9,476	-41.5		286	10.6
250	31	10,690	-49.3		279	15.3
200	31	12,127	-55.9		269	21.2
175	31	12,971	-58.5		271	20.5
150	31	13,934	-61.1		270	18.5
125	29	15,059	-65.4		269	19.0
100	29	16,398	-70.0		266	18.4
80	23	17,712	-72.0			
60	21	19,419	-67.1			
50	20	20,528	-62.8			
40	19	21,906	-58.7			
30	16	23,720	-55.4			
20	[illegible]	26,283	-52.5			

BUFFALO, N. Y.
(995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	182	- 4.6	82	319	2.1
1,000	31	142				
950	31	546	- 5.7	75	325	3.6
900	31	968	- 7.2	76	333	4.6
850	31	1,414	- 6.9	75	331	5.2
800	31	1,887	- 7.4	73	332	5.9
750	31	2,388	- 9.0	71	328	6.8
700	31	2,920	-10.9	68	322	7.7
650	31	3,491	-13.8	61	312	8.6
600	31	4,091	-16.9	52	309	9.2
550	31	4,741	-21.1	48	304	9.7
500	31	5,436	-25.9	44	305	10.3
450	31	6,193	-31.7	42	311	11.6
400	31	7,013	-37.7		311	12.9
350	31	7,919	-44.4		302	11.6
300	31	8,937	-50.5		297	12.0
250	30	10,114	-54.6		294	14.4
200	30	11,544	-53.5		289	14.6
175	29	12,399	-53.1		284	13.5
150	29	13,389	-54.1		282	14.2
125	28	14,553	-55.6		277	12.1
100	28	15,964	-58.1		276	11.8
80	26	17,365	-59.1		277	8.7
60	25	19,167	-59.6		274	8.2
50	24	20,302	-59.6		271	8.6
40	20	21,694	-59.1		266	9.9
30	17	23,495	-58.5			
20	10	26,050	-56.5			
15	5	27,829	-54.0			

BURRWOOD, LA.
(1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	12.2	83	22	2.9
1,000	30	160	12.6	68	7	3.4
950	30	593	10.7	59	334	3.4
900	30	1,039	10.6	50	329	3.9
850	30	1,515	9.8	42	316	4.7
800	30	2,016	7.7	40	305	7.6
750	30	2,550	5.0	34	292	9.1
700	30	3,106	2.4	31	289	10.9
650	30	3,704	- .8	29	284	12.3
600	29	4,333	- 4.9		284	13.2
550	29	5,011	- 9.3		285	14.7
500	29	5,742	-14.4		285	16.5
450	28	6,539	-20.2		286	16.1
400	27	7,388	-27.1		288	16.9
350	27	8,335	-34.5		286	17.9
300	27	9,393	-42.9			
250	27	10,598	-51.3			
200	23	12,026	-57.2			
175	23	12,864	-59.1			
150	23	13,825	-61.3			
125	22	14,945	-64.8			
100	20	16,293	-68.6			
80	18	17,617	-68.9			
60	15	19,344	-64.6			
50	14	20,461	-61.6			
40	13	21,855	-58.4			
30	9	23,678	-54.9			
20	5	26,334	-51.0			
15						

CARIBOU, ME.
(989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	191	- 6.0	81	334	4.4
1,000	31	104				
950	31	507	- 6.4	79	7	6.1
900	31	928	- 7.0	82	40	6.3
850	31	1,374	- 6.2	85	65	4.7
800	31	1,848	- 6.8	81	57	4.3
750	31	2,356	- 8.5	75	57	2.1
700	31	2,883	-11.0	71	77	1.0
650	31	3,457	-13.9	67	224	.4
600	31	4,053	-17.3	62	220	2.0
550	31	4,705	-21.3	57	212	2.8
500	31	5,396	-26.0	52	222	3.9
450	31	6,163	-31.1	53	222	4.5
400	31	6,976	-36.6	51	225	6.7
350	31	7,887	-42.9		222	7.4
300	31	8,910	-49.7		227	7.8
250	31	10,083	-55.5		231	10.3
200	28	11,479	-54.8		257	8.9
175	23	12,333	-53.3		267	8.7
150	22	13,325	-53.8		272	9.3
125	20	14,503	-55.8		273	11.9
100	18	15,910	-57.3		277	11.8
80	15	17,285	-59.0		283	15.0
60	14	19,078	-60.0		277	16.4
50	12	20,208	-60.6		281	17.6
40	8	21,587	-61.3			
30	5	23,376	[illegible]			
20						
15						

CHARLESTON, S. C.
(1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	13	5.6	75	299	2.6
1,000	31	137	8.1	61	293	2.7
950	31	562	7.0	54	301	5.4
900	31	1,003	4.7	53	300	7.2
850	31	1,468	3.8	47	293	8.6
800	31	1,960	2.8	41	281	10.2
750	31	2,488	.7	38	278	12.1
700	31	3,032	- 2.0	37	280	13.9
650	31	3,626	- 5.4	36	278	15.3
600	31	4,242	- 9.1	33	284	16.5
550	31	4,915	-13.1	31	280	20.6
500	31	5,630	-17.9		282	20.8
450	31	6,415	-23.7		280	22.1
400	31	7,259	-30.0	34	277	22.8
350	31	8,196	-37.2	36	270	25.4
300	31	9,245	-44.5			
250	31	10,445	-51.7			
200	31	11,877	-56.1			
175	31	12,725	-56.5			
150	31	13,700	-57.9			
125	31	14,842	-60.8			
100	30	16,218	-63.8			
80	30	17,583	-64.4			
60	26	19,348	-61.6			
50	26	20,484	-59.2			
40	26	[illegible]	-57.1			
30	20	23,723	-55.3			
20	7	26,360	-52.2			
15						

COLD BAY, ALASKA
(1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	- 6.9	87	328	4.0
1,000	31	100			331	5.7
950	31	505	- 7.6	72	346	8.6
900	31	918	- 9.1	66	353	10.8
850	31	1,359	- 9.8	61	351	11.2
800	31	1,826	-10.4	50	357	13.5
750	31	2,329	-12.0	40	354	9.9
700	31	2,847	-13.9	37	9	10.1
650	31	[illegible]	-16.8	36	356	10.0
600	30	4,004	-19.9	37	[illegible]	10.3
550	30	4,648	-23.9	36	14	10.5
500	30	5,333	-28.8			
450	30	6,089	-34.3			
400	30	6,893	-39.7		339	12.2
350	30	7,795	-44.7			
300	30	[illegible]	-49.7			
250	30	9,994	-53.3			
200	28	11,411	-53.3			
175	26	12,259	-50.6			
150	23	13,255	-49.8			
125	18	14,433	-49.3			
100	16	15,922	-50.0			
80	12	17,359	-50.8			
60	7	19,276	-51.9			
50						
40						
30						
20						
15						

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

COLUMBIA, MO.
(992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	238	- 1.7	63	356	1.0
1,000	31	175				
950	31	584	- 1.7	59	346	1.2
900	31	1,015	- .9	57	308	1.7
850	31	1,472	- .3	53	312	3.6
800	31	1,956	- 1.0	51	304	6.0
750	31	2,471	- 3.1	50	304	7.0
700	31	3,013	- 5.8	50	299	8.2
650	31	3,590	- 9.0	47	295	11.0
600	30	4,209	-12.6	47	295	12.9
550	30	4,862	-16.8	48	292	15.5
500	30	5,577	-21.4	43	294	17.7
450	30	6,348	-27.0	43	293	20.3
400	30	7,183	-33.0	41	294	24.1
350	30	8,108	-40.2		292	27.2
300	30	9,141	-48.1		290	28.2
250	30	10,323	-54.7		286	29.9
200	29	11,738	-56.5		285	30.2
175	29	12,586	-56.2		285	28.3
150	28	13,564	-56.6		284	25.1
125	28	14,716	-58.5		284	20.1
100	27	16,114	-61.4		286	16.4
80	27	17,495	-61.3		289	12.1
60	25	19,277	-61 2		285	7.5
50	24	20,412	-60.1		279	6.3
40	20	21,832	-58.8		272	5.4
30	14	23,650	-56.5		264	6.4

DODGE CITY, KANS.
(926 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	792	- 0.6	58	136	2.5
1,000	31	172				
950	31	591				
900	31	1,024	1.7	48	132	2.4
850	31	1,486	2.7	43	191	4.2
800	31	1,975	1.7	39	223	5.3
750	31	2,500	- .4	41	257	7.6
700	31	3,042	- 2.9	42	273	9.2
650	31	3,627	- 6.2	43	275	9.4
600	31	4,247	-10.3	42	283	10.6
550	31	4,910	-14.7	41	284	13.0
500	31	5,626	-19.7	40	283	14.7
450	31	6,405	-25.3	37	276	17.4
400	31	7,242	-31.6	35	274	18.2
350	31	8,173	-38.9		274	22.0
300	31	9,212	-47.2		269	19.8
250	31	10,395	-54.8		280	20.5
200	31	11,805	-58.5		276	20.7
175	30	12,648	-58.0		275	23.1
150	30	13,619	-57.9		272	20.5
125	29	14,759	-60.1		273	19.3
100	26	16,151	-62.8		273	15.0
80	24	17,513	-63.2			
60	16	19,283	-61.3			
50	14	20,429	-59.9			
40	13	21,828	-58.4			
30	6	23,654	-57.0			

EL PASO, TEX.
(883 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,195	10.4	38	352	1.3
1,000	31	135				
950	31	575				
900	31	1,031				
850	31	1,509	11.4	32	252	2.3
800	31	2,012	8.3	33	273	5.4
750	31	2,549	5.1	34	273	6.5
700	31	3,102	2.0	30	273	7.8
650	31	3,698	- 1.9	31	274	8.2
600	31	4,327	- 5.9	31	281	9.7
550	31	5,001	-10.2		284	10.9
500	31	5,731	-15.3	34	283	10.9
450	31	6,524	-21.0	35	279	10.6
400	31	7,378	-27.8		284	10.5
350	31	8,321	-35.3		279	10.6
300	31	9,375	-43.7		288	11.8
250	30	10,572	-53.3			
200	30	11,983	-59.8			
175	29	12,819	-60.2			
150	29	13,779	-61.1			
125	27	14,899	-63.9			
100	23	16,262	-66.6			
80	21	17,608	-67.1			
60	18	19,356	-63.4			
50	18	20,482	-60.6			
40	16	21,882	-58.2			
30	10	23,704	-55.1			

ELY, NEV.
(807 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,908	- 0.5	61	200	2.4
1,000	31	151				
950	31	580				
900	31	1,026				
850	31	1,486				
800	31	1,977	1.4	55	197	2.5
750	31	2,501	- .3	51	204	3.8
700	31	3,044	- 4.0	49	243	6.9
650	31	3,629	- 7.6	49	258	10.0
600	31	4,243	-11.5	49	264	12.0
550	31	4,909	-15.5	47	271	14.8
500	31	5,618	-20.2	44	275	16.5
450	31	6,397	-25.6	43	283	18.8
400	31	7,234	-31.4	45	281	19.0
350	31	8,166	-38.4	48	281	19.2
300	31	9,207	-46.3			
250	30	10,392	-54.2			
200	30	11,801	-59.2			
175	30	12,638	-58.4			
150	29	13,615	-57.9			
125	28	14,766	-59.4			
100	27	16,157	-60.9			
80	25	17,541	-61.1			
60	20	19,317	-60.1			
50	19	20,458	-59.0			
40	18	21,855	-58.6			
30	12	23,696	-56.9			

FAIRBANKS, ALASKA
(1002 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	135	-29.2	63	16	0.6
1,000	31	151			40	.8
950	31	530	-20.5	57	88	2.5
900	31	928	-18.7	56	93	3.5
850	31	1,357	-15.6	56	93	3.0
800	31	1,814	-15.5	54	113	2.2
750	31	2,305	-16.9	52	120	.5
700	31	2,815	-19.0	50	231	.9
650	31	3,371	-22.0	48	255	1.2
600	31	3,948	-25.4	47	302	1.3
550	31	4,579	-29.0	47	323	2.3
500	31	5,250	-33.1	46	309	3.2
450	31	5,993	-37.9		288	4.7
400	31	6,785	-42.7		294	5.1
350	31	7,675	-48.2		254	6.6
300	31	8,678	-53.1		263	9.4
250	30	9,832	-55.2		270	7.1
200	29	11,253	-53.8		267	6.3
175	29	12,112	-53.1		268	7.2
150	28	13,093	-52.8		270	7.9
125	27	14,265	-53.0		269	9.9
100	26	15,697	-53.9		272	13.7
80	24	17,137	-54.8		281	13.5
60	23	18,975	-56.2		292	14.6
50	19	20,148	-57.2			
40	13	21,652	-55.9			
30	8	23,628	-53.0			

FORT HUACHUCA, ARIZ.
(857 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,428	11.6	29	240	3.0
1,000	31	115				
950	31	559				
900	31	1,017				
850	31	1,497			243	2.4
800	31	2,003	9.1	34	235	4.0
750	31	2,538	5.5	34	248	4.1
700	31	3,093	2.0	30	267	5.1
650	31	3,689	- 1.3	32	279	5.9
600	31	4,320	- 5.4	32	273	8.2
550	31	4,996	- 9.8	35	275	11.1
500	31	5,726	-14.5	34	273	12.9
450	30	6,518	-20.3	35	273	12.3
400	27	7,376	-27.4	36	271	13.5
350	22	8,338	-35.2		269	16.0
300	16	9,392	-43.7		269	18.5
250	13	10,581	-53.5		269	21.5
200	8	11,986	-61.5			
175						
150						
125						
100						
80						
60						
50						
40						
30						

FORT WORTH, TEX.
(998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	178	7.1	58	347	1.3
1,000	29	161			355	1.8
950	29	590	8.0	51	8	1.2
900	29	1,030	7.4	48	269	1.0
850	29	1,501	7.4	42	259	3.4
800	29	1,999	6.2	39	271	5.7
750	29	2,531	3.7	37	276	7.7
700	29	3,083	1.0	38	270	9.7
650	29	3,678	- 2.6	36	275	10.7
600	29	4,305	- 6.5	37	279	12.0
550	29	4,982	-11.0	38	281	14.0
500	29	5,704	-16.0	36	277	16.0
450	28	6,499	-22.0	34	278	17.2
400	27	7,349	-28.9		283	18.4
350	27	8,289	-36.7		280	19.5
300	26	9,333	-45.2		278	21.8
250	26	10,525	-54.0		277	24.6
200	26	11,937	-58.9		272	26.7
175	24	12,775	-57.7		270	27.4
150	22	13,753	-58.4		271	27.5
125	21	14,886	-62.2		270	24.8
100	18	16,257	-65.6		269	20.4
80	15	17,595	-66.1		276	13.9
60	9	19,370	-64.5			
50	5	20,454	-61.9			
40	5	21,842	-59.8			
30						

GLASGOW, MONT.
(936 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	696	-14.4	85	116	2.7
1,000	31	184				
950	31	576				
900	31	992	- 8.7	67	191	1.2
850	31	1,439	- 5.3	62	266	3.6
800	31	1,915	- 5.6	58	271	4.8
750	31	2,425	- 7.5	58	278	6.5
700	31	2,954	-10.2	55	279	6.9
650	31	3,529	-13.6	54	264	6.9
600	31	4,125	-17.5	54	263	8.4
550	31	4,773	-21.9	52	266	9.2
500	31	5,465	-26.6	49	270	11.8
450	31	6,220	-32.0	45	275	13.2
400	31	7,039	-38.0		273	12.9
350	31	7,945	-44.4		266	13.8
300	31	8,962	-50.7		267	15.7
250	31	10,134	-55.3		274	16.6
200	31	11,556	-54.9		273	14.7
175	30	12,412	-54.2		276	15.3
150	30	13,399	-54.2		283	12.7
125	27	14,563	-54.6		280	11.6
100	26	15,989	-55.9		284	9.0
80	25	17,408	-57.5		292	10.8
60	21	19,227	-58.2		283	9.7
50	17	20,390	-58.3		313	5.6
40	12	21,809	-58.7			
30	8	23,647	-59.6			

GRAND JUNCTION, COLO.
(852 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,474	2.4	61	81	1.1
1,000	31	154				
950	31	586				
900	31	1,027				
850	31	1,493	3.9	47	64	.7
800	31	1,985	3.0	47	182	1.1
750	31	2,512	- .2	46	240	3.4
700	31	3,053	- 4.3	51	246	7.1
650	31	3,639	- 8.1	52	259	8.7
600	31	4,250	-12.1	52	268	10.8
550	31	4,913	-16.4	53	272	13.3
500	31	5,619	-20.8	52	273	15.5
450	31	6,399	-26.0	52	283	17.1
400	31	7,232	-32.0	52	284	18.8
350	31	8,161	-38.9		282	18.9
300	31	9,199	-46.9		288	16.9
250	30	10,385	-54.7			
200	29	11,798	-58.9			
175	29	12,636	-58.0			
150	29	13,608	-57.7			
125	27	14,749	-59.2			
100	27	16,137	-61.7			
80	26	17,512	-61.9			
60	20	19,300	-61.1			
50	15	20,440	-60.1			
40	10	21,845	-58.8			
30	7	23,675	-56.7			

GREAT FALLS, MONT.
(885 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,123	- 6.0	69	227	4.1
1,000	31	150				
950	31	564				
900	31	992				
850	31	1,440	- 3.5	51	233	7.5
800	31	1,917	- 4.9	58	246	8.6
750	31	2,428	- 7.3	64	254	9.7
700	31	2,958	-10.3	61	260	9.8
650	31	3,531	-13.7	54	264	8.9
600	31	4,128	-17.6	57	260	9.2
550	31	4,775	-22.0	55	257	10.9
500	31	5,469	-26.8	51	256	13.4
450	31	6,227	-32.4	51	259	14.0
400	31	7,041	-38.2	49	260	14.4
350	31	7,946	-44.7		261	18.8
300	30	8,964	-50.3		261	22.0
250	30	10,139	-54.5		260	21.5
200	30	11,560	-54.9		266	18.3
175	30	12,415	-54.2		269	18.0
150	30	13,401	-54.6		270	16.2
125	30	14,567	-55.1		268	15.2
100	30	15,985	-56.5		270	14.1
80	29	17,397	-56.9		274	11.3
60	26	19,207	-58.2		274	9.7
50	26	20,353	-58.5		273	10.4
40	21	21,755	-58.4		290	10.5
30	15	23,570	-58.5		299	8.4

GREEN BAY, WIS
(996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	210	- 7.8	77	352	1.4
1,000	31	175			23	3.8
950	31	580	- 6.1	68	352	3.1
900	31	1,000	- 6.0	61	2	2.2
850	31	1,447	- 6.1	57	349	2.8
800	31	1,921	- 6.6	51	333	4.3
750	31	2,430	- 8.5	48	316	5.4
700	31	2,955	-10.9	43	318	6.4
650	30	3,528	-14.0	43	312	6.7
600	30	4,126	-17.2	42	309	8.1
550	30	4,777	-21.0		304	8.5
500	30	5,470	-25.6		302	10.2
450	30	6,233	-30.9		303	10.3
400	30	7,051	-36.6		295	10.7
350	30	7,962	-43.2		296	10.5
300	30	8,983	-49.8		294	11.3
250	30	10,161	-54.1		286	13.5
200	29	11,586	-53.5		289	13.8
175	29	12,444	-53.2		288	15.3
150	29	13,436	-53.7		289	14.7
125	29	14,604	-54.6		283	13.9
100	29	16,022	-57.1		288	12.9
80	29	17,431	-58.0		286	11.2
60	26	19,244	-58.7		281	9.5
50	22	20,402	-58.8		274	10.4
40	21	21,800	-58.6		274	10.4
30	10	23,617	-57.3			
20						

GREENSBORO, N. C.
(984 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	273	1.0	67	315	2.2
1,000	31	139				
950	31	558	2.5	50	312	5.5
900	31	990	.6	51	332	8.2
850	31	1,448	.0	49	343	8.0
800	31	1,932	- .9	49	333	7.2
750	31	2,453	- 2.9	47	316	8.4
700	31	2,990	- 5.3	45	309	10.7
650	31	3,576	- 8.3	42	302	12.8
600	31	4,185	-11.9	41	299	13.6
550	31	4,851	-16.3	39	297	15.4
500	31	5,556	-21.0	38	294	16.6
450	31	6,333	-26.6	38	289	19.5
400	31	7,165	-32.7	37	290	20.2
350	31	8,091	-39.4		282	17.2
300	31	9,129	-46.4			
250	31	10,321	-52 7			
200	31	11,748	-55.4			
175	31	12,601	-54.8			
150	31	13,584	-55.9			
125	31	14,736	-58.8			
100	31	16,127	-61.3			
80	31	17,510	-61.1			
60	29	19,294	-60.1			
50	27	20,433	-59.0			
40	25	21,832	-57.6			
30	21	23,651	-56.1			
20	7	26,249	-54.0			

HATTERAS, N. C.
(1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	4.1	84	310	3.1
1,000	31	108			317	4.2
950	31	530	3.3	61	323	8.4
900	31	963	1.7	60	321	7.0
850	31	1,423	1 2	60	298	6.8
800	31	1,910	- .3	59	289	9.4
750	31	2,433	- 1.7	50	289	11.5
700	31	2,972	- 4.1	45	290	12.5
650	31	3,560	- 7.4	46	288	13.7
600	31	4,172	-10.9	43	288	15.0
550	31	4,838	-14.9	40	287	17.1
500	30	5,553	-19.8	38	288	14.8
450	30	6,335	-25.3	37	296	14.2
400	30	7,171	-31.6	36	304	11.5
350	30	8,100	-38.8		315	10.4
300	30	9,140	-46.1			
250	30	10,335	-51.8			
200	29	11,763	-55.0			
175	28	12,610	-54.1			
150	28	13,595	-55.6			
125	28	14,750	-58.1			
100	28	16,143	-61.2			
80	27	17,525	-61.5			
60	25	19,312	-59.8			
50	24	20,453	-58.8			
40	21	21,853	-56.8			
30	18	23,698	-54.7			
20	6	26,266	-53.6			

HILO, T. H.
(1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	11	24.3	75	134	3.0
1,000	31	109	23.2	75	135	3.5
950	31	557	20.0	77	149	4.6
900	31	1,020	16.9	80	170	3.9
850	31	1,506	14.1	79	191	3.6
800	31	2,017	11.8	72	179	3.0
750	31	2,565	9.9	57	174	2.5
700	31	3,127	7.0	49	200	2.6
650	31	3,737	3.6	48	218	3.2
600	31	4,379	- .2	46	233	4.2
550	31	5,075	- 4.2	39	236	5.8
500	31	5,817	- 8.4		247	7.9
450	31	6,637	-13.8		250	10.5
400	31	7,512	-19.9	39	261	10.4
350	31	8,487	-27.3		269	13.0
300	31	9,579	-35.4		274	18.6
250	31	10,822	-44.9		274	21.3
200	31	12,277	-55.9		281	22.7
175	29	13,120	-61.5		295	20.7
150	25	14,072	-67.8		294	19.3
125	19	15,159	-74.5		302	8.6
100	10	16,469	-78.9			
80	7	17,719	-78.8			
60	5	19,409	-70.4			
50						
40						
30						
20						

INTERNAT. FALLS, MINN.
(977 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	360	-12.7	68	181	0.7
1,000	31	184				
950	31	582	-10.7	68	182	1.1
900	31	994	- 9.4	68	216	2.0
850	31	1,438	- 7.6	63	242	2.7
800	31	1,909	- 8.2	56	259	2.9
750	31	2,411	-10.3	57	271	3.6
700	31	2,937	-12.5	57	275	3.9
650	31	3,502	-15.8	56	279	5.8
600	31	4,098	-18.9	52	282	7.4
550	30	4,739	-23.0	47	291	8.4
500	30	5,433	-27.8	46	293	8.8
450	30	6,189	-32.7		291	11.0
400	30	7,001	-38.4		289	12.2
350	29	7,915	-44.7		291	12.9
300	28	8,931	-51.5		288	13.2
250	28	10,099	-55.8		294	16.2
200	26	11,511	-54.7		294	15.9
175	25	12,360	-54.0		289	15.5
150	23	13,345	-53.9		285	15.2
125	22	14,517	-54.8		286	13.9
100	14	15,974	-56.9		288	10.5
80	9	17,362	-58.8			
60	7	19,184	-58.8			
50	5	20,320	-59.9			
40						
30						
20						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

JANUARY 1956

JACKSONVILLE, FLA. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	7.9	78	286	1.1
1,000	31	146	10.9	62	280	2.3
950	31	576	9.2	56	295	5.6
900	31	1,020	7.6	50	300	6.5
850	31	1,489	6.4	44	296	6.9
800	31	1,985	5.0	41	291	8.5
750	31	2,515	2.8	37	290	11.5
700	31	3,065	.2	34	293	12.8
650	30	3,658	- 3.2	33	289	15.4
600	30	4,284	- 6.8	31	288	17.3
550	30	4,960	-11.2	29	287	19.7
500	30	5,682	-16.2		285	21.3
450	30	6,472	-22.0		285	23.3
400	30	7,321	-28.8		284	25.3
350	30	8,262	-36.1		282	27.3
300	30	9,314	-43.9		281	29.7
250	30	10,515	-51.7		277	33.5
200	30	11,945	-56.4		275	37.8
175	29	12,793	-57.5		276	38.3
150	29	13,761	-59.7		277	36.9
125	29	14,891	-63.1		277	32.9
100	28	16,247	-66.7		276	25.2
80	24	17,592	-66.7		273	17.8
60	22	19,338	-62.9		276	11.1
50	20	20,470	-60.1		263	5.3
40	17	21,870	-57.3		251	4.9
30	12	23,698	-54.7		259	6.2
20	5	26,288	-52.9			

KING SALMON, ALASKA (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	-18.7	68	8	5.1
1,000	31	68			357	5.4
950	31	463	-12.1	60	4	6.8
900	31	872	- 9.5	59	7	6.5
850	31	1,313	- 9.6	56	6	7.4
800	31	1,780	-10.7	54	4	8.2
750	31	2,278	-13.2	52	2	7.8
700	31	2,797	-16.0	48	359	9.2
650	31	3,356	-19.1	44	359	10.5
600	31	3,943	-22.0	45	360	11.7
550	31	4,584	-26.1	47	1	12.4
500	30	5,253	-30.8	46	1	13.1
450	30	5,999	-35.9		2	14.7
400	29	6,814	-40.6		2	17.3
350	29	7,710	-46.4		357	14.9
300	28	8,710	-50.9		343	15.1
250	28	9,888	-53.0		337	11.6
200	28	11,329	-51.7		329	10.5
175	26	12,198	-51.2		338	14.5
150	21	13,220	-51.4		330	12.4
125	13	14,438	-52.5		327	21.7
100	8	15,878	-54.4			
80	7	17,313	-54.4			
60	5	19,161	-57.1			
50	5	20,308	-58.7			

KOTZEBUE, ALASKA (1022 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	-24.8	70	64	2.5
1,000	31	167	-20.3	65	52	3.1
950	31	557	-16.3	57	33	3.6
900	31	958	-15.3	51	13	3.4
850	31	1,390	-14.7	47	343	4.2
800	31	1,848	-15.7	43	345	5.3
750	31	2,344	-17.5	41	346	6.2
700	31	2,848	-19.6	42	313	6.4
650	31	3,404	-22.6	43	334	7.0
600	31	3,979	-25.7	43	323	6.5
550	31	4,613	-29.0	43	315	8.3
500	31	5,281	-32.9		310	9.2
450	31	6,025	-37.8		311	10.0
400	31	6,819	-43.0		302	10.8
350	31	7,707	-48.4		293	10.4
300	31	8,710	-52.5		294	11.3
250	30	9,882	-55.2		288	10.8
200	30	11,302	-55.3		279	9.3
175	30	12,155	-54.2		276	10.9
150	30	13,142	-54.0		275	11.2
125	28	14,308	-53.0		274	16.4
100	28	15,745	-53.3		275	16.1
80	27	17,181	-54.2		277	15.6
60	25	19,031	-54.8		278	18.3
50	21	20,206	-54.8		275	22.7
40	15	21,598	-55.5		271	26.1
30	6	23,486	-56.1			

LAKE CHARLES, LA. (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	10.8	74	79	1.0
1,000	31	161	11.8	66	69	1.7
950	31	590	10.6	62	106	.4
900	31	1,040	10.3	55	283	1.2
850	31	1,515	9.6	45	290	3.5
800	31	2,017	7.5	42	285	6.2
750	31	2,552	5.0	35	293	7.4
700	31	3,106	2.2	32	293	9.1
650	31	3,704	- 1.2	29	293	11.1
600	31	4,334	- 4.9	27	290	12.1
550	31	5,014	- 9.2		291	12.9
500	31	5,743	-14.2		282	15.1
450	31	6,544	-20.1		284	16.8
400	31	7,396	-26.7		292	16.6
350	31	8,344	-34.5		288	19.8
300	31	9,402	-43.0		287	19.6
250	31	10,606	-51.8		291	23.8
200	30	12,030	-56.9		287	25.3
175	30	12,872	-58.2		283	26.5
150	29	13,845	-59.7			
125	29	14,974	-63.6			
100	26	16,335	-66.6			
80	25	17,680	-68.3			
60	25	19,422	-63.7			
50	22	20,545	-61.3			
40	21	21,939	-57.7			
30	17	23,764	-54.9			
20	7	26,359	-52.9			

LANDER, WYO. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,696	[illegible]	67	298	0.6
1,000	31	166				
950	31	579				
900	31	1,013				
850	31	1,467				
800	31	1,947	- 2.2	53	198	.6
750	31	2,464	[illegible]	[illegible]	250	3.1
700	31	3,003	[illegible]	42	264	5.3
650	31	3,579	-10.4	[illegible]	[illegible]	8.9
600	31	4,189	[illegible]	44	[illegible]	12.5
550	31	4,845	-18.5	[illegible]	275	[illegible]
500	31	5,547	-23.5	40	280	13.6
450	31	6,312	-29.0	41	274	15.7
400	31	7,141	-35.2	[illegible]	[illegible]	15.6
350	31	8,058	-41.9		273	18.5
300	31	9,085	-48.6		[illegible]	17.0
250	31	10,265	-54.9		264	21.3
200	31	11,680	-57.4		272	17.5
175	31	12,526	-56.4		280	19.6
150	31	13,504	-56.3		275	14.0
125	30	14,659	-56.9			
100	30	16,067	-58.6			
80	29	17,467	-59.2			
60	26	19,265	-59.4			
50	23	20,409	-58.5			
40	19	21,812	-58.3			
30	13	23,657	-56.4			

LAS VEGAS, NEV. (939 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	660	9.1	37	239	2.6
1,000	31	130				
950	31	564				
900	31	1,014	12.1	32	214	1.7
850	31	1,490	9.5	34	218	3.1
800	31	1,990	6.3	36	237	4.3
750	31	2,524	2.9	38	257	5.8
700	31	3,072	.0	36	266	7.7
650	31	3,666	- 3.8	37	267	8.9
600	31	4,288	- 8.0	40	268	10.8
550	31	4,962	-12.3	42	274	14.7
500	31	5,681	-17.4	45	272	16.1
450	31	6,471	-23.3	46	270	19.4
400	31	7,312	-29.5	45	273	21.7
350	31	8,250	-37.0	46	276	24.5
300	30	9,294	-45.4		279	27.1
250	29	10,478	-54.8		277	29.6
200	29	11,878	-61.5		273	30.3
175	28	12,703	-60.7		271	28.9
150	27	13,668	-59.6		267	26.7
125	27	14,802	-61.9		266	21.6
100	25	16,177	-63.9		265	16.8
80	22	17,543	-63.1		269	11.9
60	21	19,319	-61.9		262	7.4
50	19	20,449	-60.3		270	3.5
40	18	21,843	-58.7		282	2.3
30	12	23,688	-55.9		272	2.4
20	9	26,281	-53.5			
15	5	28,170	-49.9			

LITTLE ROCK, ARK. (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	4.3	65	19	1.0
1,000	31	166	4.9	59	14	1.6
950	31	590	3.8	56	16	1.8
900	31	1,023	3.5	53	326	1.7
850	31	1,487	3.9	49	302	3.9
800	31	1,979	3.0	43	302	6.2
750	31	2,506	.7	43	292	9.2
700	31	3,051	- 1.9	47	290	10.6
650	31	3,640	- 5.2	45	286	12.6
600	31	4,262	- 8.6	42	288	13.5
550	31	4,934	-12.7	39	286	16.3
500	31	5,652	-17.4	39	283	18.0
450	31	6,441	-23.3		286	18.1
400	31	7,283	-29.7		286	19.9
350	30	8,225	-37.0		278	21.8
300	30	9,272	-45.3		272	24.6
250	30	10,464	-53.9		291	26.4
200	29	11,877	-58.0			
175	29	12,718	-57.8			
150	27	13,697	-58.6			
125	27	14,834	-62.0			
100	25	16,207	-64.4			
80	24	17,569	-64.4			
60	19	19,325	-62.1			
50	18	20,464	-59.7			
40	17	21,868	-57.7			
30	10	23,706	-55.1			

MAZATLAN, MEXICO (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	14	21.2	79		
1,000	28	116	21.0	76		
950	28	572	21.3	52		
900	28	1,028	19.6	41		
850	28	1,517	16.6	38		
800	28	2,030	13.2	36		
750	28	2,579	9.5	36		
700	28	3,138	5.8			
650	28	3,748	2.0			
600	28	4,381	- 1.9			
550	28	5,069	- 6.7			
500	28	5,804	-11.7			
450	26	6,608	-17.4			
400	26	7,473	-24.1			
350	24	8,432	-31.8			
300	22	9,503	-40.2			
250	22	10,721	-49.6			
200	19	12,145	-57.4			
175	16	12,975	-59.7			
150	11	13,927	-62.4			
125	6	15,012	-66.3			
100	6	16,348	-70.8			

MC GRATH, ALASKA (1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	103	-26.5	64	3	0.4
1,000	26	135			49	1.6
950	26	515	-21.0	62	37	6.1
900	26	913	-16.5	56	49	10.1
850	26	1,344	-14.4	55	46	11.9
800	26	1,804	-14.1	53	40	11.4
750	26	2,297	-15.6	49	34	11.6
700	26	2,810	-17.7	47		
650	25	3,360	-21.0			
600	25	3,939	-24.3			
550	23	4,561	-28.1			
500	23	5,237	-32.0			
450	23	5,983	-36.9			
400	23	6,780	-42.0			
350	21	7,669	-47.5			
300	20	8,662	-52.8			
250	18	9,862	-55.4			
200	18	11,285	-54.1			
175	18	12,143	-53.2			
150	18	13,134	-53.4			
125	18	14,309	-52.9			
100	18	15,744	-54.1			
80	17	17,175	-54.8			
60	17	19,005	-56.7			
50	15	20,156	-58.1			
40	12	21,611	-57.1			
30	7	23,581	-54.8			

MEDFORD, ORE (967 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	4.9	87	173	1.5
1,000	31	119				
950	31	545	5.9	74	175	2.3
900	31	982	4.2	69	184	4.8
850	31	1,444	1.2	72	204	6.6
800	31	1,930	- 1.9	71	223	9.6
750	31	2,446	- 4.4	62	241	11.6
700	31	2,982	- 7.2	58	245	14.2
650	31	3,562	-10.5	55	248	16.0
600	31	4,169	-14.6	57	251	15.1
550	31	4,826	-18.8	52	259	14.1
500	31	5,526	-23.5	49	260	16.5
450	31	6,295	-29.0	46	266	17.3
400	31	7,120	-34.8		262	18.9
350	31	8,039	-41.4			
300	31	9,068	-48.4			
250	31	10,250	-54.6			
200	31	11,670	-55.9			
175	31	12,520	-54.7			
150	31	13,505	-55.0			
125	31	14,667	-56.0			
100	28	16,083	-58.4			
80	28	17,484	-58.7			
60	27	19,289	-58.3			
50	26	20,431	-58.3			
40	23	21,823	-58.2			
30	11	23,654	-56.6			

MIAMI, FLA. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	15.5	81	322	1.3
1,000	31	147	16.4	71	311	1.6
950	31	584	14.0	67	301	2.8
900	31	1,037	11.5	63	292	2.9
850	31	1,513	9.8	51	288	4.1
800	31	2,015	8.0	38	291	4.9
750	31	2,551	5.9		287	6.6
700	31	3,108	3.2		279	7.9
650	31	3,707	- .1		286	9.8
600	31	4,342	- 3.9		286	11.4
550	31	5,021	- 8.4		278	12.9
500	31	5,755	-13.6		279	15.3
450	31	6,558	-19.5		279	14.6
400	30	7,418	-26.0		277	17.8
350	30	8,370	-33.2		281	20.4
300	30	9,437	-40.6		285	19.0
250	30	10,655	-48.9		278	21.2
200	27	12,102	-56.7		279	27.6
175	27	12,940	-59.7		274	30.8
150	27	13,898	-62.6		283	32.3
125	27	15,010	-67.2			
100	26	16,342	-71.1			
80	25	17,655	-72.2			
60	24	19,366	-66.1			
50	24	20,482	-62.1			
40	21	21,874	-58.4			
30	20	23,695	-55.4			
20	11	26,291	-52.4			
15	6	28,156	-51.3			

MIDLAND, TEXAS (918 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	871	7.1	47	121	1.0
1,000	31	152				
950	31	586				
900	31	1,033	9.8	40	166	1.4
850	31	1,507	9.3	34	260	4.2
800	31	2,008	8.1	32	274	7.0
750	31	2,545	4.9	32	275	7.1
700	31	3,096	1.4	33	280	8.3
650	31	3,696	- 2.1	32	280	10.0
600	31	4,320	- 6.1	33	278	11.6
550	31	4,999	-10.4	29	277	12.9
500	31	5,722	-15.9	30	278	14.9
450	31	6,516	-21.7	32	276	16.0
400	31	7,364	-28.5	34	281	16.3
350	31	8,305	-36.2	35	282	17.4
300	31	9,356	-44.6		276	17.4
250	31	10,551	-53.8		276	17.5
200	31	11,963	-59.0		273	18.6
175	31	12,800	-59.3		271	21.6
150	31	13,762	-60.5		256	24.8
125	29	14,893	-63.3		264	23.6
100	27	16,248	-66.6		252	16.9
80	24	17,587	-67.0			
60	21	19,327	-63.9			
50	21	20,452	-61.0			
40	20	21,850	-58.2			
30	9	23,698	-55.6			

NANTUCKET, MASS. (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	14	0.2	82	343	3.9
1,000	30	81			328	5.0
950	30	496	- 1.3	77	334	6.5
900	30	922	- 2.0	71	313	4.3
850	30	1,376	- 2.9	63	298	5.0
800	30	1,855	- 4.0	56	285	6.4
750	30	2,369	- 6.2	60	296	6.5
700	30	2,900	- 8.6	58	285	8.2
650	30	3,481	-11.1	54	286	8.2
600	30	4,083	-14.2	51	279	9.8
550	30	4,741	-17.9	49	260	9.0
500	30	5,444	-23.1	48	246	7.8
450	30	6,216	-28.7	43	256	9.0
400	30	7,040	-34.8		235	7.2
350	30	7,957	-42.1		224	6.1
300	30	8,981	-49.7		214	7.0
250	30	10,160	-53.6		178	11.1
200	29	11,590	-52.8			
175	28	12,459	-52.3			
150	28	13,452	-53.4			
125	27	14,623	-55.4			
100	25	16,037	-57.6			
80	22	17,435	-58.1			
60	20	19,243	-59.0			
50	18	20,384	-58.7			
40	15	21,798	-58.0			
30	12	23,620	-57.5			

NASHVILLE, TENN. (999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	1.8	78	344	1.8
1,000	31	168			352	1.6
950	31	586	1.2	61	332	3.3
900	31	1,016	.2	58	[illegible]	4.9
850	31	1,475	.6	51	341	5.7
800	31	1,961	.0	46	322	7.6
750	31	2,484	- 1.7	44	316	9.5
700	31	3,023	- 3.9	41	309	11.7
650	31	3,609	- 7.1	38	303	12.1
600	31	4,224	-10.9	40	290	14.5
550	31	4,893	-14.8	42	289	17.2
500	31	5,601	-19.7	41	285	18.8
450	31	6,385	-25.3	37	283	20.2
400	31	7,219	-31.4		278	20.9
350	31	8,149	-38.6		299	18.3
300	31	9,189	-46.5			
250	31	10,377	-54.2			
200	31	11,794	-56.8			
175	31	12,639	-56.9			
150	31	13,614	-57.1			
125	31	14,761	-59.5			
100	29	16,151	-61.9			
80	24	17,533	-62.4			
60	23	19,315	-60.9			
50	22	20,453	-59.7			
40	18	21,866	-57.5			
30	13	23,711	-54.6			
20	6	26,308	-54.5			

NOME, ALASKA (1021 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	-19.5	71	58	2.6
1,000	31	160	-16.3	61	55	2.5
950	31	554	-14.6	54	38	2.8
900	31	957	-13.0	42	12	4.1
850	31	1,392	-12.5	37	1	6.2
800	31	1,854	-13.6	36	357	6.5
750	31	2,348	-15.0	37	351	4.6
700	31	2,862	-17.4	38	[illegible]	3.7
650	31	3,418	-20.5	39	327	5.1
600	31	4,002	-23.8	11	322	[illegible]
550	31	4,636	-27.5		322	5.9
500	31	[illegible]	-31.7		329	7.3
450	30	6,055	-36.5		313	6.8
400	30	6,850	-41.8		313	8.9
350	30	7,743	-47.2		289	7.4
300	30	8,751	-51.8		300	8.9
250	30	9,923	-54.7		301	8.6
200	30	11,313	-55.3		291	6.8
175	30	12,198	-53.4		275	7.6
150	30	13,191	-52.3		277	10.1
125	30	[illegible]	-52.2		[illegible]	10.7
100	29	15,800	-52.3		270	15.6
80	29	17,238	[illegible]		275	14.9
60	28	19,092	-53.7		272	16.6
50	25	20,274	-53.8		278	18.9
40	[illegible]	[illegible]	-55.0		277	18.5
30	17	23,640	-53.3			
20	[illegible]	[illegible]	-49.1			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

NORFOLK, VA. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	2.5	75	345	3.9
1,000	31	114			336	5.0
950	31	535	1.3	62	329	8.0
900	31	962	-.1	61	330	9.0
850	31	1,419	-.7	63	326	8.8
800	31	1,903	-1.7	63	313	9 1
750	31	2,422	-3.5	57	306	10.0
700	31	2,958	-5.6	51	300	11.4
650	31	3,543	-8.8	50	293	12.7
600	31	4,151	-12.3	46	288	14.2
550	31	4,815	-16.4	43	283	15.6
500	31	5,521	-21.4	43	280	18.0
450	31	6,298	-27.2	44	278	19.3
400	31	7,126	-33.2	43	279	21.9
350	31	8,051	-39.8		280	26 3
300	30	9,089	-46.8		282	31.7
250	28	10,277	-52.5		277	35.3
200	28	11,707	-54.8		277	33.5
175	28	12,562	-53.8		278	32.1
150	26	13,540	-55.1		279	26.8
125	26	14,699	-57.0		274	23.3
100	23	16,098	-59.8		273	17.2
80	21	17,490	-61.1		271	14.2
60	19	19,282	-59.9		266	10.2
50	18	20,423	-58.8		259	9.1
40	15	21,825	-57.6		265	11.0
30	11	23,641	-57.5		257	10.7

NORTH PLATTE, NEBR. (919 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	-5.8	78	93	1.0
1,000	31	177				
950	31	589				
900	31	1,014	-2.7	66	119	.8
850	31	1,467	-1 7	56	271	2.6
800	31	1,950	-1.5	50	289	5.4
750	31	2,466	-3.3	46	290	7.4
700	31	3,005	-6.3	47	288	7.3
650	31	3,584	-9.7	49	277	9.2
600	31	4,195	-13.2	50	284	11.2
550	31	4,854	-17.4	49	285	12.5
500	31	5,559	-22.2	49	284	14.3
450	31	6,333	-27.9	46	286	15.4
400	31	7,160	-34.0	41	283	17.0
350	31	8,080	-40.9		280	18.6
300	31	9,110	-48.5		282	19.9
250	31	10,289	-55.1		277	19.5
200	31	11,703	-57.4		286	17.8
175	29	12,552	-57.3		283	17.4
150	29	13,527	-56.6		286	17.5
125	28	14,678	-57.7		285	14.6
100	27	16,077	-60.3		287	10.8
80	24	17,470	-61.3		295	7.4
60	18	19,249	-60.4			
50	15	20,393	-60.0			
40	14	21,800	-58.8			
30	8	23,590	-58.3			

OAKLAND, CALIF. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	10.0	86	227	0.4
1,000	31	151	10.4	77	204	.8
950	31	580	7.9	76	209	2.6
900	31	1,021	5.8	71	228	3.2
850	31	1,488	3.9	62	248	3.9
800	31	1,979	2.0	55	253	6.1
750	31	2,503	-.7	48	255	8.9
700	30	3,044	-3.7	43	257	11.7
650	29	3,631	-7.0	44	259	13.3
600	29	4,248	-11.0	45	263	15.5
550	29	4,917	-14.8	46	265	18.3
500	29	5,627	-19.7	46	269	20.9
450	28	6,413	-25.0	49	267	23.1
400	28	7,250	-30.8	47	268	26.1
350	28	8,183	-38.3		269	29.6
300	28	9,225	-46.3		268	34.4
250	28	10,413	-54.9		274	35.8
200	28	11,816	-60.9		271	35.2
175	28	12,647	-59.7		273	32.0
150	27	13,604	-58.7		274	26.6
125	25	14,748	-60.0		274	20.5
100	23	16,132	-61.7		272	14.6
80	21	17,507	-61.6		269	11.0
60	18	19,295	-60.3		271	5.6
50	16	20,435	-60.0		286	3.5
40	13	21,821	-58.9		326	2.9
30	7	23,637	-57.1			

OKLAHOMA CITY, OKLA. (973 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	392	2.1	63	45	1.5
1,000	31	168				
950	31	585	3.9	52	57	2.2
900	31	1,025	5.0	43	41	2.0
850	31	1,492	5.0	39	337	1.6
800	31	1,985	3.8	35	296	3.5
750	31	2,514	1.4	37	283	6.3
700	31	3,060	-1.0	36	286	9.0
650	31	3,650	-4.6	39	288	10.2
600	31	4,272	-8.6	39	285	10.9
550	31	4,942	-12.6	38	284	13.5
500	31	5,662	-17.3	40	285	15.6
450	31	6,451	-23.0	41	286	17.3
400	31	7,293	-29.7	39	286	18.2
350	31	8,229	-37.5		288	18.5
300	31	9,273	-46.0		292	20.5
250	31	10,461	-54.5		295	20.9
200	31	11,872	-58.7		287	23.2
175	31	12,711	-58.7		282	21.8
150	30	13,681	-59.4		276	23.0
125	29	14,821	-61.6		273	19.8
100	29	16,194	-64.3		269	16.6
80	27	17,550	-64.2			
60	22	19,308	-62.3			
50	21	20,445	-60.1			
40	19	21,845	-58.4			
30	10	23,696	-56.3			

OMAHA, NEBR. (973 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	403	-7.3	73	19	1.6
1,000	31	184				
950	31	594	-6.0	67	11	1.7
900	31	1,012	-2.6	60	313	2.3
850	31	1,467	-1.5	54	301	2.9
800	31	1,949	-2.3	51	297	4.5
750	31	2,467	-4.2	49	299	6.9
700	31	3,001	-6.6	49	296	9.1
650	30	3,579	-10.3	50	300	11.1
600	28	4,185	-14.1	45	298	13.1
550	28	4,843	-18.5	44	296	14.6
500	28	5,544	-23.4	46	292	15.9
450	28	6,314	-28.6	46	293	18.7
400	28	7,139	-34.4	42	292	21.8
350	28	8,059	-41.2		292	25.4
300	28	9,087	-48.7		290	26.9
250	28	10,268	-54.1		290	28.9
200	27	11,693	-56.1		286	28.2
175	27	12,541	-55.5		287	24.8
150	26	13,517	-55.0		285	21.8
125	25	14,681	-56.8		283	18.1
100	24	16,087	-59.4		280	15.1
80	22	17,479	-59.0		287	11.2
60	21	19,283	-59.4		291	9.0
50	18	20,429	-58.6		298	6.9
40	16	21,832	-58.8		298	6.7
30	10	23,613	-58.3			

PHOENIX, ARIZ (976 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	341	13.9	49	38	0.1
1,000	31	133				
950	31	574	17.3	33	66	.3
900	31	1,030	14.8	32	119	.2
850	31	1,509	11.3	34	229	1.6
800	31	2,012	7.9	37	243	3.5
750	31	2,545	4.3	40	252	4.9
700	31	3,098	.9	40	266	6.5
650	31	3,694	-2.5	37	270	8.2
600	31	4,320	-6.4	38	282	10.6
550	31	4,995	-10.7	37	285	12.0
500	31	5,720	-15.9	37	281	13.2
450	31	6,511	-21.6	42	283	14.6
400	31	7,362	-28.2	42	289	16.2
350	30	8,302	-35.6	43	294	18.1
300	30	9,354	-44.0		290	17.4
250	30	10,551	-53.1		291	20.8
200	30	11,960	-60.1		280	18.7
175	29	12,791	-60.6		284	17.1
150	28	13,750	-60.8		278	15.8
125	27	14,879	-63.2			
100	26	16,241	-65.5			
80	24	17,601	-65.7			
60	20	19,351	-63.8			
50	20	20,474	-61.5			
40	18	21,868	-59.0			
30	7	23,709	-56.5			

PITTSBURGH, PA. (975 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	353	-2.7	81	299	2.9
1,000	31	151				
950	31	562	-3.4	76	293	4.1
900	31	985	-5.4	75	311	5.6
850	31	1,433	-4.8	68	320	5.9
800	31	1,910	-5.3	63	320	6.5
750	31	2,420	-6.8	59	311	7.9
700	31	2,952	-8.8	55	300	10.2
650	31	3,527	-11.9	50	300	10.6
600	31	4,131	-15.7	48	301	11.4
550	31	4,783	-19.9	45	293	13.3
500	31	5,482	-24.8	41	292	15.7
450	31	6,244	-30.4	42	291	17.8
400	31	7,066	-36.8	39	285	20 2
350	31	7,976	-43.7		282	23.4
300	31	8,997	-50.1		282	24.0
250	31	10,172	-54.6		289	27.0
200	30	11,600	-54.0		288	24.3
175	28	12,456	-53.4		288	18.1
150	25	13,450	-54.8		280	20.3
125	24	14,613	-56.7		280	18.3
100	24	16,018	-59.1		276	15.1
80	21	17,403	-60.2		273	11.9
60	18	19,203	-59.8		275	10.6
50	15	20,363	-59.6		269	11.1
40	8	21,746	-58.0			

PORTLAND, ME. (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	20	-2.9	76	346	3.4
1,000	31	94			334	4.1
950	31	504	-4.4	74	351	8.0
900	31	924	-4.2	75	5	7.0
850	31	1,374	-4.5	72	353	5.5
800	31	1,851	-5.5	63	330	4.9
750	30	2,362	-7.4	59	315	5.1
700	30	2,892	-10.2	57	306	6.1
650	29	3,465	-13.7	55	299	7.5
600	29	4,062	-16.8	51	281	7.0
550	29	4,715	-20.4	47	269	8.8
500	29	5,410	-24.7	48	259	9.9
450	29	6,173	-29.8	49	252	12.1
400	29	6,999	-35.7		257	13.4
350	28	7,914	-42.6		252	13.8
300	28	8,936	-49.8		243	13.0
250	25	10,102	-54.7		241	15.8
200	22	11,514	-53.8		264	17.6
175	21	12,367	-52.8		268	16.4
150	21	13,360	-53.2		261	15.5
125	19	14,539	-54.8		256	15.4
100	14	15,954	-57.2		261	14.9
80	7	17,340	-59.3			
60	6	19,104	-61.4			

RAPID CITY, S. DAK. (905 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	966	-5.2	74	28	0.9
1,000	31	171				
950	31	581				
900	31	1,009			6	.9
850	31	1,461	-2.1	58	263	3.0
800	31	1,943	-2.8	55	278	4.4
750	31	2,456	-4.8	52	283	5.5
700	31	2,992	-8 1	52	281	7.0
650	31	3,567	-11.7	55	279	9.3
600	31	4,173	-15.4	56	284	10.6
550	31	4,825	-19.8	53	280	11.7
500	31	5,525	-24.5	52	281	13.5
450	31	6,289	-30.0	53	281	15.3
400	30	7,103	-36.3	55	278	17.3
350	30	8,016	-43.0		278	19.7
300	30	9,038	-50.2		277	22.9
250	29	10,204	-55.9		273	21.5
200	27	11,620	-55.9		272	22.7
175	27	12,470	-55.6		275	20.0
150	24	13,454	-55.6		273	18.6
125	14	14,646	-56.2		278	14.7

ST. CLOUD, MINN. (983 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	316	-12.9	76	286	0.6
1,000	31	182				
950	31	584	-9.6	73	121	.6
900	31	998	-5.8	61	207	.7
850	31	1,446	-5.4	56	270	2.0
800	31	1,921	-6.1	49	274	3.0
750	31	2,427	-7.7	49	280	4.6
700	31	2,959	-10.0	47	284	6.0
650	31	3,531	-13.2	47	286	7.1
600	31	4,132	-16.7	46	283	7.2
550	31	4,783	-20.6	43	291	7.5
500	31	5,479	-25.2	36	287	8.1
450	31	6,240	-30.7		286	8.9
400	31	7,062	-36.6		289	10.3
350	31	7,974	-43.3		284	10.8
300	31	8,996	-49.7		290	13.8
250	30	10,176	-54.4		288	14.8
200	30	11,602	-54.8		287	14.4
175	29	12,454	-53.5		291	15.0
150	29	13,445	-53.8		286	14.0
125	29	14,613	-55.0		283	12.3
100	28	16,036	-56.9		283	11.5
80	28	17,444	-58.2		286	10.1
60	24	19,259	-58.8		288	9.2
50	19	20,403	-58.5		278	11.2
40	15	21,789	-58.9			
30	8	23,605	-58.9			

ST. PAUL IS., ALASKA (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	-5.0	87	53	2.2
1,000	31	140			56	2.0
950	31	547	-7.5	80	12	1.6
900	31	961	-7.1	67	303	3.0
850	31	1,406	-7.4	57	318	4.6
800	31	1,878	-8.4	50	319	5.2
750	31	2,387	-10.7	42	335	4.1
700	31	2,904	-13.7	39	348	4.9
650	31	3,474	-16.9	41	341	7.1
600	31	4,060	-20.4	43	338	5.4
550	31	4,707	-24.1	42	319	4.2
500	31	5,388	-28.6		309	4.0
450	31	6,145	-33.8		314	5.7
400	31	6,950	-39.5		294	7.8
350	31	7,851	-45.6		292	8.1
300	31	8,862	-51.9			
250	31	10,029	-56.3			
200	30	11,430	-56.6			
175	27	12,256	-53.7			
150	24	13,229	-51.6			
125	22	14,399	-50.8			
100	19	15,855	-50.6			
80	17	17,307	-51.5			
60	16	19,187	-51.2			
50	13	20,388	-51.0			
40	9	21,885	-50.2			
30	6	23,789	-51.3			
20						

SAN ANTONIO, TEX. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	10.6	62	19	1.7
1,000	31	158				
950	31	592	11.8	57	94	1.8
900	31	1,040	10.8	53	172	.8
850	31	1,516	10.2	48	246	2.9
800	31	2,020	8 8	36	278	6.1
750	31	2,558	6.1	31	278	8.3
700	31	3,113	3.0	31	273	8.7
650	31	3,712	-.7	30	276	10.1
600	31	4,344	-4.7		276	11.2
550	31	5,022	-9.0		282	12.6
500	31	5,753	-14.4		273	11.7
450	31	6,549	-20.6		271	14.5
400	31	7,402	-27.6		273	13.0
350	29	8,342	-35.4		275	14.4
300	29	9,395	-43.9		285	14.5
250	29	10,594	-52.6		282	15.5
200	29	12,013	-58.2		273	22.4
175	29	12,849	-59.9		269	25.8
150	28	13,811	-61.3		268	27.4
125	28	14,931	-65.1		266	25.5
100	26	16,275	-68.3		274	15.5
80	24	17,610	-69.3			
60	22	19,347	-65.2			
50	20	20,467	-62.3			
40	17	21,857	-58.7			
30	14	23,680	-55.7			
20	10	26,287	-53.0			

SAN JUAN, P. R. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	23	22.0	80	97	1.6
1,000	31	136	22.8	74	98	3.0
950	31	584	19.9	75	75	4.4
900	31	1,046	16.5	76	66	3.1
850	31	1,531	13.7	68	76	2.2
800	31	2,040	11.1	59	51	1.6
750	31	2,582	9.2	46	346	.4
700	31	3,146	6.9	32	281	2.5
650	31	3,755	3.6		265	4.0
600	31	4,396	-.2		276	5.1
550	31	5,088	-4.7		275	6.6
500	31	5,829	-9.4		274	8.6
450	31	6,646	-14.8		274	11.4
400	31	7,517	-20.9		275	16.7
350	30	8,491	-26.7		269	19.4
300	30	9,586	-34.6		267	25.8
250	30	10,833	-44.6		267	27.9
200	30	12,289	-55.5		271	29.6
175	30	13,129	-60.6		280	28.9
150	30	14,075	-66.5		276	25.7
125	30	15,161	-72.3		276	21.8
100	28	16,455	-78.1		276	14.1
80	25	17,724	-78.9		205	.5
60	23	19,390	-70.2		101	3.5
50	22	20,485	-65.3		126	3.6
40	22	21,856	-60.9		117	1.2
30	19	23,669	-55.5			
20	11	26,267	-51.2			

SANTA MARIA, CALIF. (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	74	10.5	86	318	0.4
1,000	31	152	10.7	83	325	1.2
950	31	581	10.5	72	339	2.7
900	31	1,029	8.7	63	323	2.7
850	31	1,501	7.2	53	301	4.2
800	31	1,998	4.9	45	295	6.4
750	31	2,528	2.5		286	8.5
700	31	3,077	-.6	45	278	10.2
650	31	3,669	-4.1	46	266	11.9
600	31	4,292	-7.9	43	263	14.2
550	31	4,965	-12.0	48	264	16.3
500	31	5,687	-16.2	51	252	16.4
450	31	6,480	-21.7	53	254	17.9
400	31	7,329	-27.8	50	252	19.2
350	31	8,273	-35.4	47	250	17.8
300	31	9,325	-44.2		250	22.4
250	31	10,520	-54.2			
200	29	11,929	-61.8			
175	29	12,755	-61.4			
150	29	13,711	-60.6			
125	28	14,843	-62.0			
100	26	16,218	-64.2			
80	22	17,583	-63.2			
60	18	19,351	-61.8			
50	18	20,482	-60.4			
40	12	21,892	-58.4			
30	6	23,714	-56.8			

S. STE. MARIE, MICH. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	-8.5	83	50	1.6
1,000	30	177	-11.3			
950	30	579	-7.5	66	65	2.5
900	30	997	-7.1	66	34	2.5
850	30	1,442	-7.5	63	4	2.8
800	30	1,913	-8.6	60	345	3.1
750	30	2,415	-10.1	54	347	4.3
700	30	2,941	-12.5	51	331	4.8
650	30	3,508	-15.5	49	324	5.7
600	30	4,103	-18.7	48	312	6.2
550	30	4,750	-22.2	43	303	7.3
500	30	5,442	-26.3	39	304	8.3
450	30	6,202	-31.8	40	300	9.4
400	30	7,017	-37.7		301	10.1
350	30	7,924	-44.5		308	11.2
300	29	8,938	-51.4		294	11.5
250	27	10,102	-55.3		303	13.7
200	26	11,531	-53.5		293	13.9
175	26	12,390	-53.1		286	13.7
150	25	13,374	-53.9		289	15.1
125	24	14,538	-55.1		287	14.6
100	23	15,956	-57.2		284	15.2
80	20	17,355	-58.7		290	13.9
60	17	19,153	-59.9		290	14.7
50	17	20,291	-60.2		291	16.5
40	13	21,707	-59.8		289	15.4
30	7	23,545	-59.2			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	SHREVEPORT, LA. * (1009 MB.)						SPOKANE, WASH (929 MB.)						TACUBAYA, MEXICO (773 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	20	77	6.9	74	40	2.2	31	722	- 1.5	87	135	0.9	14	2,306	14.7			
1,000--	20	147	7.5	68	49	2.1	31	128					14	55				
950----	20	573	6.2	68	108	2.0	31	548					14	510				
900----	20	1,010	6.1	63	226	2.1	31	973	- .7	77	171	3.3	14	984				
850----	20	1,478	5.9	61	279	5.4	31	1,427	- 2.9	74	204	5.5	14	1,484				
800----	20	1,973	4.1	58	275	7.7	31	1,906	- 5.5	71	223	7.0	14	2,009				
750----	20	2,502	1.7	57	275	9.1	31	2,415	- 8.7	72	236	6.6	14	2,559	13.1			
700----	20	3,049	- .9	51	270	11.5	31	2,940	-12.4	72	242	8.2	14	3,131	8.9			
650----	20	3,639	- 4.4	50	267	12.8	31	3,512	-15.8	68	247	10.2	14	3,749	4.0			
600----	20	4,262	- 8.3	51	266	14.6	31	4,101	-19.7	60	248	11.6	14	4,384	- 1.2			
550----	20	4,934	-12.3	45	262	17.5	31	4,746	-23.9	56	251	12.8	14	5,066	- 6.8			
500----	20	5,654	-17.1		260	20.5	31	5,431	-28.4	51	250	15.1	12	5,805	-11.8			
450----	20	6,447	-22.7		261	20.6	31	6,184	-33.8	50	253	16.1	12	6,611	-17.3			
400----	19	7,288	-29.6		262	21.7	31	6,994	-39.4		256	18.3	12	7,475	-23.8			
350----	19	8,225	-37.2		264	24.8	31	7,897	-45.0		261	20.7	11	8,436	-31.0			
300----	18	9,276	-45.3		262	27.1	31	8,914	-50.0		264	19.7	10	9,526	-39.4			
250----	17	10,467	-54.3		259	30.4	31	10,094	-53.4		270	18.5	8	10,733	-50.4			
200----	12	11,896	-59.9		271	33.5	31	11,525	-53.6		269	17.3	7	12,154	-59.1			
175----	9	12,716	-59.1				31	12,385	-52.7		266	17.8	6	12,999	-60.1			
150----	6	13,668	-58.6				31	13,378	-53.2		266	16.0	5	13,954	-62.6			
125----							31	14,549	-54.3		268	14.5						
100----							29	15,969	-55 6		262	12.7						
80-----							29	17,386	-56.5		274	11.7						
60-----							29	19,206	-57.2		286	8.6						
50-----							25	20,366	-57.4		299	8.1						
40-----							24	21,781	-57.8		307	7.5						
30-----							14	23,600	-57.3		321	8.6						
20-----							13	26,155	-57.8		317	10.7						
15-----							7	28,021	-56.1									

Standard pressure surface (mb.)	TAMPA, FLA. (1018 MB.)						TATOOSH ISLAND, WASH. (1005 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	11.4	80	329	1.2	31	31	4.8	84	110	6.6
1,000--	31	154	13.3	70	328	2.2	31	71			113	7.5
950----	31	586	11.9	67	308	4.2	31	492	3.0	72	134	8.1
900----	31	1,036	10.1	52	302	5.1	31	925	.2	75	163	8.7
850----	31	1,510	9.2	37	296	6.4	31	1,380	- 2.8	76	182	10.7
800----	31	2,011	7.6	34	291	8.6	31	1,858	- 5.7	73	192	9.3
750----	31	2,548	5.2	31	296	9.8	31	2,365	- 8.6	66	195	8.8
700----	31	3,101	2.1	29	286	11.2	31	2,893	-11.8	59	211	8.7
650----	31	3,700	- 1.4	29	286	11.5	30	3,462	-15.8	51	223	9.6
600----	30	4,325	- 5.2	27	278	12.8	30	4,054	-19.6	50	234	10.1
550----	30	5,005	- 9.6		282	13.6	30	4,694	-23.9	51	244	11.6
500----	30	5,731	-14.7		281	15.0	30	5,383	-28.8	49	249	13.6
450----	30	6,528	-20.7		278	16.3	30	6,131	-34.2	49	259	14.8
400----	30	7,379	-27.5		279	19.3	30	6,944	-39.9		251	18.6
350----	30	8,326	-34.8		282	20.7	29	7,845	-45.9		250	21.6
300----	30	9,386	-42.1		284	24.7	29	8,859	-50.5		254	23.6
250----	30	10,598	-49.7		282	29.1	29	10,039	-52.9		260	20.8
200----	29	12,032	-56.8				28	11,484	-51.6		259	17.2
175----	28	12,873	-59.0				28	12,350	-51.2		254	16.4
150----	27	13,834	-62.0				23	13,356	-51.1		264	15.9
125----	27	14,950	-66.3				22	14,542	-51.9		265	14.3
100----	26	16,290	-70.1				22	15,980	-54.0		268	12.1
80-----	26	17,610	-70.8				21	17,413	-54.9		279	9.0
60-----	24	19,329	-66.0				19	19,254	-54.9		280	8.3
50-----	24	20,445	-62.0				19	20,417	-55.2		290	7.9
40-----	23	21,837	-58.8				17	21,853	-55.6		308	6.8
30-----	18	23,653	-55.4				12	23,690	-55.3			
20-----	9	26,230	-53.1									
15-----												

Standard pressure surface (mb.)	TOPEKA, KANS. (990 MB.)						WASHINGTON, D. C. (1004 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	270	- 3.9	64	4	1.4	31	88	0.5	66	323	3.2
1,000--	31	186					31	122			306	3.3
950----	31	596	- 3.0	58	[illegible]	2.2	31	535	- .8	64	326	7.5
900----	31	1,023	- .7	54	326	1.4	31	964	- 2.7	67	337	8.0
850----	31	1,480	.0	52	311	3.3	31	1,417	- 1.9	63	343	7.2
800----	31	1,965	- .6	50	304	4.9	31	1,898	- 3.1	62	328	7.5
750----	31	2,485	- 3.1	49	298	7.4	31	2,413	- 5.1	60	320	8.4
700----	31	3,023	- 5.4	48	294	9.5	31	2,947	- 7.5	57	314	9.4
650----	31	3,604	- 8.8	46	295	10.9	31	3,524	-10.5	50	308	9.4
600----	30	4,214	-12.9	48	294	13.6	31	4,132	-13.9	45	305	11.2
550----	30	4,875	-17.0	48	294	15.5	31	4,790	-18.1	43	300	12.0
500----	30	5,580	-21.6	49	289	18.1	31	5,492	-22.9	42	288	14.8
450----	30	6,359	-26.7	49	285	20.7	31	6,258	-28.4	41	290	13.7
400----	30	7,188	-32.7	45	286	23.0	31	7,090	-34.6	41	292	13.7
350----	30	8,113	-39.9		285	26.1	31	8,008	-41.3		293	15.2
300----	30	9,148	-47.6		287	30.0	31	9,037	-48.0		287	19.5
250----	30	10,330	-54.8		289	30.9	31	10,223	-53.0		297	16.0
200----	28	11,743	-57.4		286	28.7	30	11,660	-53.5		294	16.5
175----	28	12,588	-56.6		285	26.2	30	12,518	-53.2		290	15.3
150----	28	13,564	-56.8		282	25.0	30	13,508	-54.3		285	17.0
125----	27	14,718	-58.2		282	22.0	28	14,670	-56.4		289	15.0
100----	27	16,113	-60.8		282	16.4	26	16,071	-58.7		286	12.4
80-----	25	17,495	-61.1		282	12.5	25	17,472	-59.9		285	9.4
60-----	23	19,286	-60.7		287	8.8	23	19,265	-60.0		295	9.1
50-----	21	20,419	-60.7		291	7.5	21	20,406	-59.2		285	10.1
40-----	13	21,830	-58.9		301	5.7	17	21,819	-57.8		273	9 6
30-----	8	23,674	-57.0				15	23,634	-56.6		269	12.4
20-----							9	26,224	-54.9			
15-----							5	28,116	-52.6			

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1003 MB.)						YUMA, ARIZ. (1003 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	12	- 3.1	80	103	3.7	30	105	16.9	34	241	0.2
1,000--	30	34			107	4.8	30	128	17.2	35	224	.2
950----	30	449	- 2.5	66	107	7.4	30	570	16.4	31	295	1.2
900----	30	870	- 4.9	65	119	5.7	30	1,023	13.6	31	279	1.7
850----	31	1,320	- 7.4	63	119	4.7	30	1,502	10.7	31	276	3.6
800----	31	1,789	-10.2	60	107	3.5	30	2,004	7.8	33	272	4.4
750----	31	2,288	-13.1	56	98	3.0	30	2,539	4.8	35	275	5.9
700----	31	2,806	-16 3	55	136	1.9	30	3,092	1.7	35	280	8.1
650----	31	3,366	-19.7	53	154	2.6	30	3,688	- 1.8	31	279	8.8
600----	31	3,949	-23.5	51	184	1.6	30	4,318	- 5.9	31	282	10.4
550----	31	4,583	-27.8	51	254	.5	29	4,991	-10.5	34	275	11.9
500----	30	5,265	-32.6	48	271	2.2	29	5,719	-15.7	42	274	13.6
450----	30	6,008	-37.5		263	3.8	29	6,509	-21.5	45	274	16.6
400----	30	6,803	-42.7		267	4.8	29	7,362	-28.2	42	281	18.7
350----	30	7,693	-48.3		325	2.1	28	8,303	-35.7	49	279	20.5
300----	30	8,697	-52.5		346	3.8	28	9,356	-44.2		283	22.8
250----	27	9,864	-53.2		293	4.8	27	10,555	-53.8		281	22.9
200----	26	11,299	-51.6		323	5.8	27	11,957	-61.8		278	25.8
175----	22	12,184	-51.4		305	6.7	27	12,780	-63.0		268	23.2
150----	18	13,184	-51.0		315	7.9	23	13,738	-62.6		282	23.9
125----	14	14,363	-51.5		322	7.5	14	14,843	-63.6		251	23.6
100----	10	15,878	-50.4				5	16,209	-67.3			
80-----	7	17,310	-51.4									
60-----												
50-----												
40-----												
30-----												
20-----												
15-----												

* Observations started January 11, 1956.

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

Note: Effective with this issue the publication of upper air wind resultant data for constant height levels, (Tables 21 and 22) has been discontinued. Table 20 has been expanded to include monthly mean wind resultants for all pressure surfaces having at least 10 wind observations at all rawin stations.

It is believed that the publication of wind data for the same surfaces as raob data will be beneficial to more users than the previous method of presenting raob data for constant height levels.

The National Weather Records Center will continue the processing of data for constant height levels, and will have these available in its archives.

RADIOSONDE DATA

Average monthly values

Table 20 *Air Force Data for September 1955

Standard pressure surface (mb)	DENVER, COLO. (834 MB.)				FT. WORTH, TEXAS (993 MB.)				OGDEN, UTAH (853 MB.)				RANTOUL, ILL. (990 MB.)				ROME, N. Y. (1001 MB.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
SURFACE	30	1,661	17.0	43	30	178	26.6	59	30	1,450	19.0	32	30	227	18.4	64	30	146	12.7	74
1,000--	30	73			30	116			30	62			30	138			30	156		
950----	30	535			30	571	25.5	59	30	517			30	589	20.5	52	30	594	14.2	67
900----	30	1,006			30	1,044	22.3	62	30	991			30	1,047	17.5	54	30	1,046	11.5	68
850----	30	1,496			30	1,539	18.7	66	30	1,485	19.9	31	30	1,533	14.5	56	30	1,522	8.9	65
800----	30	2,018	18.8	37	30	2,057	15.2	65	30	2,006	17.7	30	30	2,043	11.8	50	30	2,022	6.6	58
750----	30	2,572	14.7	41	30	2,603	12.0	58	30	2,556	13.2	34	30	2,586	9.3	39	30	2,556	4.9	43
700----	30	3,147	10.7	42	30	3,177	8.7	52	30	3,129	8.7	38	30	3,150	6.3	37	30	3,110	2.6	41
650----	30	3,763	6.0	42	30	3,789	5.1	46	30	3,739	3.9	40	30	3,758	2.5	35	30	3,711	- .3	37
600----	30	4,409	.8	46	30	4,436	1.2	41	30	4,381	- 1.0	43	30	4,396	- 1.2	34	30	4,344	- 3.8	35
550----	30	5,099	- 4.9	48	30	5,124	- 3.4		30	5,066	- 6.2	42	30	5,084	- 5.3		30	5,025	- 7.2	
500----	30	5,841	-10.7	45	30	5,878	- 7.9		30	5,806	-11.7	40	30	5,826	-10.3		30	5,761	-12.4	
450----	30	6,652	-16.3	36	30	6,695	-13.2		30	6,607	-17.7	39	30	6,640	-16.0		30	6,563	-17.8	
400----	30	7,518	-22.7		30	7,576	-19.1		30	7,472	-24.3	35	30	7,506	-22.3		30	7,430	-23.8	
350----	30	8,481	-30.3		30	8,556	-25.9		30	8,429	-31.9		30	8,472	-29.8		30	8,391	-29.2	
300----	30	9,558	-38.3		30	9,655	-33.6		30	9,498	-40.0		30	9,551	-38.3		30	9,464	-39.5	
250----	30	10,787	-46.3		30	10,908	-43.0		30	10,720	-47.4		30	10,782	-46.6		30	10,688	-47.8	
200----	30	12,242	-53.8		30	12,377	-53.8		30	12,171	-53.8		30	12,236	-54.0		30	12,135	-55.3	
175----	30	13,091	-57.9		30	13,223	-59.7		30	13,022	-56.8		30	13,086	-57.5		30	12,982	-57.7	
150----	30	14,052	-62.0		30	14,172	-65.6		29	13,984	-59.5		30	14,049	-61.2		29	13,947	-60.2	
125----	30	15,169	-65.1		30	15,267	-70.7		29	15,115	-62.4		30	15,172	-64.2		28	15,078	-61.5	
100----	24	16,499	-65.8		30	16,581	-72.0		27	16,488	-62.6		30	16,530	-65.3		27	16,461	-61.9	
80-----	19	17,848	-63.6		30	17,906	-68.2		27	17,865	-61.8		29	17,892	-63.1		25	17,844	-60.6	
60-----	16	19,637	-59.3		29	19,656	-63.0		26	19,656	-59.5		22	19,676	-59.5		23	19,647	-58.2	
50-----	16	20,783	-57.3		28	20,787	-60.3		24	20,805	-57.7		21	20,817	-57.7		20	20,811	-57.0	
40-----	15	22,205	-54.7		27	22,194	-56.7		21	22,227	-55.7		20	22,230	-56.0		20	22,228	-55.4	
30-----	13	24,051	-52.8		26	24,029	-53.4		18	24,063	-53.0		17	24,086	-52.3		17	24,079	-52.6	
20-----	11	26,678	-50.1		24	26,654	-49.3		8	26,660	-49.7		15	26,726	-50.3		5	26,711	-48.8	
15-----	9	28,554	-48.1		18	28,549	-47.4						9	28,571	-48.3					
10-----	5	31,258	-43.9																	

* October data for the above Air Force stations will be included in the February 1956 issue of this publication

Note: All observations scheduled at 0300, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature and humidity data may be missing for one or more pressure surfaces of some observations. The temperature values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by radiosondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees centigrade and relative humidity in percent.

RAWIN DATA

Average monthly resultant winds

Table 22 *Air Force data for September 1955

Altitude (meters) m.s.l.	Denver, Colo. (1,661 m)			Ft. Worth, Tex. (178 m.)			Ogden, Utah (1,450 m.)			Rantoul Ill. (227 m.)			Rome, N. Y. (146 m.)		
	No. of observations	Direction	Speed	No. of observations	Direction	Speed	No. of observations	Direction	Speed	No. of observations	Direction	Speed	No. of observations	Direction	Speed
Surface	30	146	1.4	30	102	0.7	30	35	1.3	30	44	0.8	30	141	0.5
500	--	---	---	30	145	6.0	--	---	-	29	123	1.7	29	239	2.0
1,000	--	---	---	30	149	6.1	-	-	-	29	209	1.6	29	260	4.4
1,500	--	---	---	30	164	4.8	30	35	1.3	28	248	3.5	29	271	6.8
2,000	28	192	.6	30	172	4.1	30	308	1.3	28	267	4.4	29	276	8.2
2,500	28	227	1.5	30	179	2.8	30	275	2.0	28	273	5.5	30	277	9.6
3,000	28	236	3.0	30	192	1.7	30	257	4.2	28	289	6.8	30	280	10.0
4,000	27	260	4.7	30	280	1.6	29	243	6.8	28	286	8.0	29	277	14.7
5,000	27	262	7.7	30	321	2.7	29	242	9.1	29	288	9.6	29	278	16.4
6,000	29	272	9.4	30	317	4.4	29	245	10.9	29	283	10.5	29	281	17.3
8,000	29	276	13.1	30	274	7.1	29	257	14.4	29	278	15.2	29	272	21.1
10,000	30	268	16.7	30	264	11.8	30	257	18.8	29	277	20.0	28	276	27.0
12,000	30	263	22.9	30	268	15.3	30	259	22.6	30	278	22.7	28	269	31.3
14,000	30	268	21.8	30	273	14.9	28	263	20.4	30	278	21.4	26	273	26.7
16,000	25	261	15.8	30	276	7.8	27	264	14.4	30	283	14.8	25	273	19.4
18,000	19	252	7.2	30	159	1.2	26	269	5.2	26	279	7.9	23	279	12.4
20,000	16	263	2.3	28	81	5.8	25	310	.9	21	283	3.8	20	281	4.8
22,000	14	323	1.2	27	90	9.5	20	359	1.7	20	296	1.3	19	285	3.2
24,000	13	71	.7	26	87	9.5	16	282	1.7	17	75	1.2	17	283	1.4
26,000	11	108	1.1	24	88	10.1				15	76	2.5			
28,000	10	104	1.5	17	98	9.8				10	117	1.4			

* October data for the above Air Force stations will be included in the February 1956 issue of this publication.

These free air resultant winds are based on rawin observations made near 0300 G.C.T.; directions in degrees from north (N = 360°, E = 90°, S = 180°, W = 270°); speeds in meters per second.

Note: Resultants prepared from rawins at high altitudes are biased toward lower wind speeds. Values appearing in this table should therefore be used with caution when the number of observations missing is greater than three. See note following Table 22 in the January 1950 issue of the CLIMATOLOGICAL DATA, National Summary.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. JANUARY 1956

Date	Sun's zenith distance								
	A.M.				0.0°	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	MADISON, WIS.								
	Air mass								
	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0
Jan.									
1	----	----	----	----	----	----	HK0.92	----	----
3	----	----	----	----	----	----	1.15	1.04	0.90
6	K0.64	----	----	----	----	----	----	----	----
7	----	----	----	----	----	----	1.17	----	----
8	.96	1.12	----	----	----	----	----	----	----
12	.87	.99	1.13	----	1.26	----	----	----	----
13	H .78	HK .92	1.10	-	1.28	----	1.19	----	----
21	.72	.84	----	-	----	----	----	----	----
22	----	----	----	----	----	----	1.17	1.06	.97
23	.73	.88	1.10	----	1.29	----	1.34	----	----
31	.89	----	----	----	----	----	----	----	----
Averages	.80	.95	1.11	----	1.28	----	1.16	1.05	.94
	ALBUQUERQUE, N. MEX.								
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
	Recorder Inoperative During January 1956								

Date	Sun's zenith distance								
	A.M.				0.0°	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	BLUE HILL, MASS.								
	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
Jan.									
1	----	----	1.24	----	1.29	----	1.22	1.09	0.97
2	1.05	1.16	1.26	----	1.28	----	1.16	----	----
6	----	----	----	----	----	----	1.11	.96	.88
18	----	----	1.17	----	1.30	----	1.18	1.07	.97
19	.94	1.02	1.16	----	1.28	----	----	----	----
21	----	----	1.11	----	1.24	----	1.10	.98	.90
22	.99	1.09	1.17	----	1.22	----	----	----	----
24	.93	1.04	1.17	----	1.33	----	1.19	1.06	.96
25	.97	1.07	1.19	----	1.33	----	1.18	1.07	.97
28	----	----	----	----	1.24	----	1.12	.97	.87
31	.92	1.02	1.16	----	1.30	----	1.18	1.00	.94
Averages	.97	1.07	1.18	----	1.28	----	1.16	1.03	.93
	WASHINGTON, D.C. (WBCO)								
	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Jan.									
5	----	----	----	----	1.13	----	0.99	----	----
18	0.73	0.91	0.99	1.25	----	----	1.12	0.92	----
26	----	----	----	----	1.24	1.15	1.08	.92	----
Averages	.73	.91	.99	1.25	1.18	1.15	1.06	.92	----

* Extrapolated
K Smoke
H Haze

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75, No. 3, March 1947, p. 47

SOLAR RADIATION DATA

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	42	37	9	38	18	28	37	31	17	9	12	11	[illegible]	5	14	12	[illegible]	[illegible]	[illegible]	71	[illegible]	[illegible]	[illegible]	[illegible]
Date	22	23	24	25	26	27	28		29	30	31	1	2	3	4									
Langleys	71	41	73	72	61	62	65	63	12	13	62	62	24	60	65	43								

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	170	170	11	46	20	162	129	101	19	9	11	11	10	7	15	12	30	10	6	183	223	42	[illegible]	[illegible]
Date	22	23	24	25	26	27	28		29	30	31	1	2	3	4									
Langleys	224	42	226	228	62	119	137	148	16	15	221	220	26	130	93	104								

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	582	509	5	46	12	541	473	310	16	7	8	14	10	8	13	11	15	51	8	591	436	52	601	[illegible]
Date	22	23	24	25	26	27	28		29	30	31	1	2	3	4									
Langleys	551	90	615	620	75	174	531	380	11	11	608	579	22	173	193	228								

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	188	117	10	55	20	176	175	106	20	9	11	13	10	7	14	12	32	47	7	241	120	61	[illegible]	[illegible]
Date	22	23	24	25	26	27	28		29	30	31	1	2	3	4									
Langleys	192	133	249	244	72	79	238	172	14	14	252	209	28	130	93	106								

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	44	29	17	78	40	44	53	43	37	17	17	22	16	14	28	22	62	62	6	47	59	75	51	55
Date	22	23	24	25	26	27	28		29	30	31	1	2	3	4									
Langleys	60	58	50	56	105	110	59	71	16	20	54	56	38	138	146	67								

Note: Langley is the unit used to denote one gram calorie per square centimeter

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys	16	34	35	-21	8	-2	20	-17	6	*-11	*19	16	46	-5	14	*-54	6	*54	*-18	55	-3	*57	*9	70	97	46	24	50	65	*45	51	24

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of alfalfa. The value represents the total incoming minus the total outgoing radiation of all wave lengths

* Estimated values owing to occurrence of rain during period While rain is falling, radiation is assumed to be zero.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh The instrument with which they were measured has not been checked by the Weather Bureau

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. JANUARY 1956

	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.	Dodge City, Kans.	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grandby, Colo.	Grand Junction, Colo.	Great Falls, Mont.
1956																																	
Jan. 1------	---	331	14	394	80	292	---	49	75	222	70	196	379	629	185	312	201	207	123	155	195	249	(115)	369	248	12	315	259	354	143	241	177	137
Jan. 2------	---	320	28	382	16	196	---	5	---	212	191	142	355	677	184	259	66	192	105	305	55	234	(103)	366	265	7	309	188	333	147	233	283	137
Jan. 3------	---	327	51	272	11	263	---	27	192	18	47	4	295	(679)	70	269	20	231	88	325	28	53	75	369	118	4	346	211	296	196	256	271	140
Jan. 4------	---	325	42	391	42	323	---	46	185	79	79	65	360	685	98	297	49	218	39	324	61	77	48	366	212	10	350	(142)	346	151	275	244	127
Jan. 5------	T	321	12	389	29	311	---	18	155	40	73	31	298	662	50	333	220	213	51	305	134	56	78	335	204	15	346	70	364	141	295	231	166
Jan. 6------	T	278	54	359	29	301	---	7	---	216	133	193	405	681	48	310	213	179	164	270	66	237	63	281	240	2	334	239	330	101	266	186	197
Jan. 7------	0	319	54	347	138	317	---	26	191	200	199	191	408	661	163	265	105	78	49	302	155	145	61	363	244	3	331	214	307	189	262	164	173
Average-------	T	317	36	362	49	286	---	25	160	141	113	117	371	(668)	114	292	125	188	38	284	99	150	(7[illegible])	350	219	8	333	(189)	333	153	261	222	154
Jan. 8------	1	317	40	407	114	341	---	49	173	37	176	50	337	676	50	336	145	192	223	276	188	94	95	363	278	6	337	261	365	149	293	284	150
Jan. 9------	T	311	61	413	69	346	---	61	189	18	31	10	157	676	54	340	70	239	65	320	75	54	71	367	---	16	317	97	372	181	294	---	143
Jan. 10------	1	322	36	396	109	283	---	40	176	19	30	3	398	691	34	87	39	252	53	326	42	54	48	345	211	16	366	70	352	185	300	286	105
Jan. 11------	1	338	44	381	148	294	---	37	88	22	177	3	438	669	58	215	35	71	236	313	38	64	58	365	167	27	361	57	338	99	297	---	176
Jan. 12------	0	325	27	186	41	316	---	38	194	19	129	6	438	---	67	305	49	266	18	324	192	61	90	370	155	19	360	59	335	196	286	---	174
Jan. 13------	T	255	36	382	113	330	0	38	146	15	150	22	406	680	47	333	217	262	41	205	231	78	52	294	151	29	348	113	380	161	203	146	84
Jan. 14------	3	241	74	403	8	351	---	---	49	29	38	20	402	616	36	358	292	139	19	276	72	65	65	202	118	32	272	90	356	126	78	110	152
Average-------	1	301	45	367	[illegible]6	323	---	44	145	23	105	16	368	668	50	282	121	203	94	292	120	67	69	330	180	21	337	107	357	157	250	207	141
Jan. 15------	1	312	44	388	66	298	---	71	137	64	29	51	412	660	38	350	166	42	24	208	101	83	63	341	161	40	332	111	370	---	113	233	71
Jan. 16------	4	89	57	169	36	248	---	48	140	83	58	52	243	684	83	77	117	112	242	102	59	122	89	243	205	8	362	335	63	105	139	---	148
Jan. 17------	1	198	2	394	57	328	0	48	206	8	193	6	227	---	80	346	39	79	106	165	199	47	116	212	280	35	62	217	334	141	293	290	133
Jan. 18------	1	375	85	244	144	251	0	40	212	252	74	233	387	---	100	324	215	41	139	346	132	274	97	366	185	6	110	276	306	210	---	307	188
Jan. 19------	T	355	66	216	41	35	(1)	36	127	225	33	205	387	646	118	121	77	220	83	338	92	261	70	395	71	10	397	166	106	124	299	270	214
Jan. 20------	4	---	104	377	48	57	1	51	221	80	42	64	270	630	130	191	*	148	25	338	101	108	73	350	97	16	199	151	308	119	223	147	155
Jan. 21------	4	---	50	371	23	293	1	45	226	254	70	234	199	675	73	244	---	143	49	70	130	277	101	160	267	20	46	228	345	116	309	240	117
Average-------	2	265	58	309	59	216	(T)	48	181	138	71	121	303	659	89	236	123	112	96	224	116	167	87	295	181	19	216	212	262	136	240	248	147
Jan. 22------	1	258	30	37	57	66	1	75	249	251	64	236	147	650	96	118	---	102	17	73	161	290	93	110	108	20	53	135	32	91	215	174	189
Jan. 23------	4	128	48	112	47	56	1	58	78	75	179	74	428	620	132	46	---	189	98	101	215	86	99	308	210	8	78	87	10	120	101	29	136
Jan. 24------	3	288	18	234	86	137	(2)	96	106	273	250	256	412	665	101	81	---	95	62	240	245	301	(161)	358	233	10	94	133	147	229	301	310	202
Jan. 25------	3	206	76	327	228	63	1	100	244	279	51	259	234	529	130	100	---	105	126	161	138	137	96	378	99	---	329	117	322	253	110	67	239
Jan. 26------	10	351	35	432	86	315	4	104	165	105	85	102	208	702	131	365	---	158	115	211	243	96	113	387	256	49	55	180	381	126	292	254	171
Jan. 27------	12	235	72	415	214	173	4	34	(54)	136	76	115	328	556	239	333	---	66	81	136	254	195	92	406	304	28	222	324	366	125	224	234	180
Jan. 28------	14	100	149	404	122	108	2	38	---	259	287	245	397	683	254	126	---	79	300	233	44	303	118	173	360	45	191	221	346	205	363	221	265
Average-------	7	224	61	280	120	131	(2)	72	(149)	197	142	184	308	629	155	167	---	113	114	165	186	201	(110)	303	224	27	146	171	229	164	229	184	197
Jan. 29------	13	405	157	411	116	272	2	94	261	16	125	21	353	702	51	263	---	38	264	142	114	65	156	362	364	21	148	322	342	204	374	362	193
Jan. 30------	5	407	61	360	193	182	6	42	(254)	21	284	30	80	687	124	294	---	352	220	431	170	(60)	171	224	244	6	187	155	347	182	261	348	243
Jan. 31------	15	157	64	161	205	307	6	92	(251)	291	328	293	179	669	264	290	---	---	307	185	251	(303)	205	378	287	16	129	280	153	211	238	161	270
Feb. 1------	15	120	24	199	185	8	8	30	280	292	362	275	343	518	284	66	170	49	324	202	137	315	174	336	391	9	47	303	132	209	364	309	277
Feb. 2------	9	122	28	419	103	83	8	44	271	28	306	35	76	637	---	224	57	139	318	(445)	206	70	136	205	381	24	86	361	315	139	395	395	270
Feb. 3------	16	---	6	419	176	56	(16)	51	(212)	161	303	157	68	674	279	345	301	328	298	364	331	190	108	349	376	38	68	374	278	175	380	381	236
Feb. 4------	22	408	88	231	26	610	(10)	50	225	176	252	155	398	683	284	177	65	299	204	347	264	176	97	442	370	41	102	341	226	167	391	386	183
Average-------	13	270	61	314	143	217	(8)	57	(251)	141	280	138	214	653	214	237	148	201	276	(302)	210	(168)	150	328	345	22	110	305	256	184	343	335	239

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

* Instrument inoperative from January 20th through 31st.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.- Continued

JANUARY 1956

1956	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Las Vegas, Nev.	Lemont, Ill.	Little Rock, Ark.	Los Angeles, Calif. (urban)	Los Angeles, Calif.	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Prosser 4 NE, Wash.	Rapid City, S. Dak.	Richland, Wash.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.
Jan. 1------	207	337	346	187	339	177	350	288	156	248	284	293	(192)	---	88	386	343	259	230	175	287	302	(212)	347	---	104	167	130	315	214	324	---	122
Jan. 2------	197	246	114	25	339	154	88	289	21	237	294	274	33	---	128	317	345	238	218	175	48	292	(175)	350	---	87	211	80	321	123	321	(249)	45
Jan. 3------	192	302	162	195	301	21	247	303	217	260	316	312	180	17	29	369	336	271	31	22	287	315	40	360	---	75	186	68	341	227	367	(237)	52
Jan. 4------	204	351	26	215	345	27	383	305	190	276	268	281	161	22	77	(361)	342	264	60	46	317	296	81	307	---	119	155	104	314	201	382	---	53
Jan 5------	205	344	309	197	289	26	363	204	168	262	193	211	158	24	199	443	361	266	44	167	288	318	138	163	---	84	145	48	264	152	370	212	103
Jan. 6------	188	334	301	227	318	132	337	247	214	238	254	243	192	13	146	436	288	259	227	198	280	232	(119)	278	---	99	122	131	318	182	375	298	---
Jan. 7------	164	351	252	150	200	88	155	221	183	272	238	229	197	26	37	362	353	123	174	109	189	317	(189)	246	---	124	175	126	271	171	368	254	172
Average-------	194	324	216	171	305	89	275	265	164	256	264	263	(159)	20	100	(382)	338	240	141	128	242	296	(136)	293	---	99	166	98	306	181	358	(250)	91
Jan. 8------	226	373	66	252	345	107	381	313	199	283	314	301	200	---	164	451	333	300	99	137	334	315	106	333	---	175	222	158	328	104	214	258	207
Jan. 9------	220	376	(43)	144	339	24	394	---	249	270	254	240	182	43	114	453	333	302	31	26	325	293	83	283	---	99	228	88	318	192	356	(279)	91
Jan. 10------	48	309	37	55	269	29	274	---	65	272	254	205	97	28	98	430	338	116	51	20	83	331	122	343	17	89	267	89	310	81	383	141	147
Jan. 11------	139	352	68	48	248	17	389	---	30	271	165	143	59	31	156	404	352	38	31	30	29	325	50	343	23	142	247	112	185	226	403	225	173
Jan. 12------	155	351	58	244	293	14	391	---	228	342	253	265	233	15	74	294	362	36	30	29	51	328	50	232	18	63	181	79	292	(231)	404	201	184
Jan. 13------	219	350	163	254	269	32	394	---	249	287	248	243	221	32	53	399	368	275	31	48	93	309	205	197	38	159	195	148	267	(195)	394	237	134
Jan. 14------	246	400	313	213	216	179	393	---	148	103	57	76	97	32	37	454	310	290	42	142	335	280	219	266	26	39	216	40	200	(102)	369	---	198
Average-------	179	359	(107)	173	283	57	388	---	167	261	221	210	156	30	100	412	342	194	45	62	179	312	119	285	25	109	222	102	271	(162)	360	(224)	162
Jan. 15------	219	349	375	60	251	178	346	286	133	257	116	69	75	35	97	448	221	69	89	157	157	234	214	344	47	60	204	62	196	(101)	373	---	(134)
Jan. 16------	86	275	155	125	379	155	377	233	221	283	297	295	176	51	85	425	267	147	174	156	121	272	76	298	41	102	72	99	206	(145)	350	(266)	146
Jan. 17------	224	359	345	118	352	39	204	325	44	64	319	313	30	42	97	395	237	109	(20)	133	230	139	151	382	27	181	199	148	340	(170)	56	(228)	146
Jan. 18------	238	303	348	94	341	113	61	320	122	30	293	295	74	29	33	352	383	157	264	253	271	81	222	376	214	134	264	158	329	(178)	225	(252)	135
Jan. 19------	24	62	95	107	256	127	274	158	48	148	186	192	98	23	106	349	290	35	208	126	29	325	184	346	224	49	227	52	237	(181)	396	(199)	132
Jan. 20------	110	75	283	102	292	89	391	159	76	39	47	38	99	41	115	281	219	51	111	85	54	256	131	288	141	54	161	55	76	(261)	311	103	132
Jan. 21------	219	361	161	142	318	133	180	326	254	100	294	222	239	26	47	91	67	233	257	228	217	118	220	87	187	50	222	43	298	(260)	58	---	172
Average-------	160	255	252	107	313	119	262	258	128	132	222	203	113	35	83	390	240	114	(160)	163	154	204	171	303	126	90	193	88	240	(185)	253	(210)	(142)
Jan. 22------	196	66	314	215	299	138	210	214	291	42	84	72	264	31	23	401	88	90	254	216	133	48	172	306	225	38	91	32	176	(281)	99	111	162
Jan. 23------	61	69	35	264	310	162	177	132	218	47	106	99	263	37	157	315	266	41	79	180	53	73	165	244	46	177	102	176	58	(283)	284	---	209
Jan. 24------	268	130	111	238	366	201	191	338	252	139	172	236	197	85	95	286	292	231	282	282	128	55	234	347	244	191	195	146	217	(130)	128	(261)	233
Jan. 25------	193	96	376	159	64	213	307	161	208	207	37	---	194	86	69	177	365	73	284	262	36	214	239	373	212	248	268	217	62	(148)	231	(27)	242
Jan. 26------	250	368	213	248	37	117	312	94	111	64	14	17	174	100	112	429	212	110	214	257	97	66	(143)	(272)	198	52	293	59	19	(148)	146	112	233
Jan. 27------	240	181	339	280	263	215	215	331	224	25	231	257	102	73	152	---	254	160	258	212	190	222	103	207	115	269	280	238	227	(97)	253	(350)	190
Jan. 28------	137	200	402	28	327	274	220	363	15	173	277	269	11	24	229	---	323	78	265	236	60	222	189	68	269	191	271	157	317	(110)	204	(276)	---
Average-------	192	158	256	204	238	188	233	233	188	99	131	158	172	62	119	322	257	112	234	235	100	129	(178)	(260)	187	167	214	146	154	(171)	192	(189)	212
Jan. 29------	73	192	254	7	323	44	207	358	121	25	253	254	183	13	250	---	327	2	32	22	14	45	67	387	21	188	250	210	237	(280)	216	266	135
Jan. 30------	62	160	241	272	---	16	350	219	297	263	180	173	254	23	267	---	188	68	25	9	109	386	57	409	31	232	237	233	224	(300)	---	(150)	174
Jan. 31------	204	219	288	---	403	222	---	248	314	249	327	315	286	23	291	382	292	360	308	287	386	230	240	201	317	---	311	256	307	(294)	77	(258)	231
Feb. 1------	133	43	409	74	440	233	231	278	78	14	357	374	132	60	299	408	69	21	295	259	44	274	248	387	189	---	352	244	424	(229)	66	(315)	211
Feb. 2------	44	137	324	120	450	41	96	---	130	29	331	373	303	49	285	436	169	38	43	18	14	135	102	400	66	---	319	220	431	(311)	97	(318)	177
Feb. 3------	29	112	154	274	444	202	80	---	303	25	367	362	254	83	276	262	96	54	174	181	45	130	(284)	441	---	---	329	148	396	(326)	100	(314)	290
Feb. 4------	27	68	256	183	439	75	133	395	313	40	356	358	301	49	91	289	270	17	141	45	39	83	215	448	210	---	317	113	396	(319)	471	(322)	154
Average-------	82	133	275	155	417	119	183	300	222	92	310	315	245	43	251	355	202	80	146	117	93	183	(173)	382	139	---	302	203	345	(294)	171	(277)	196

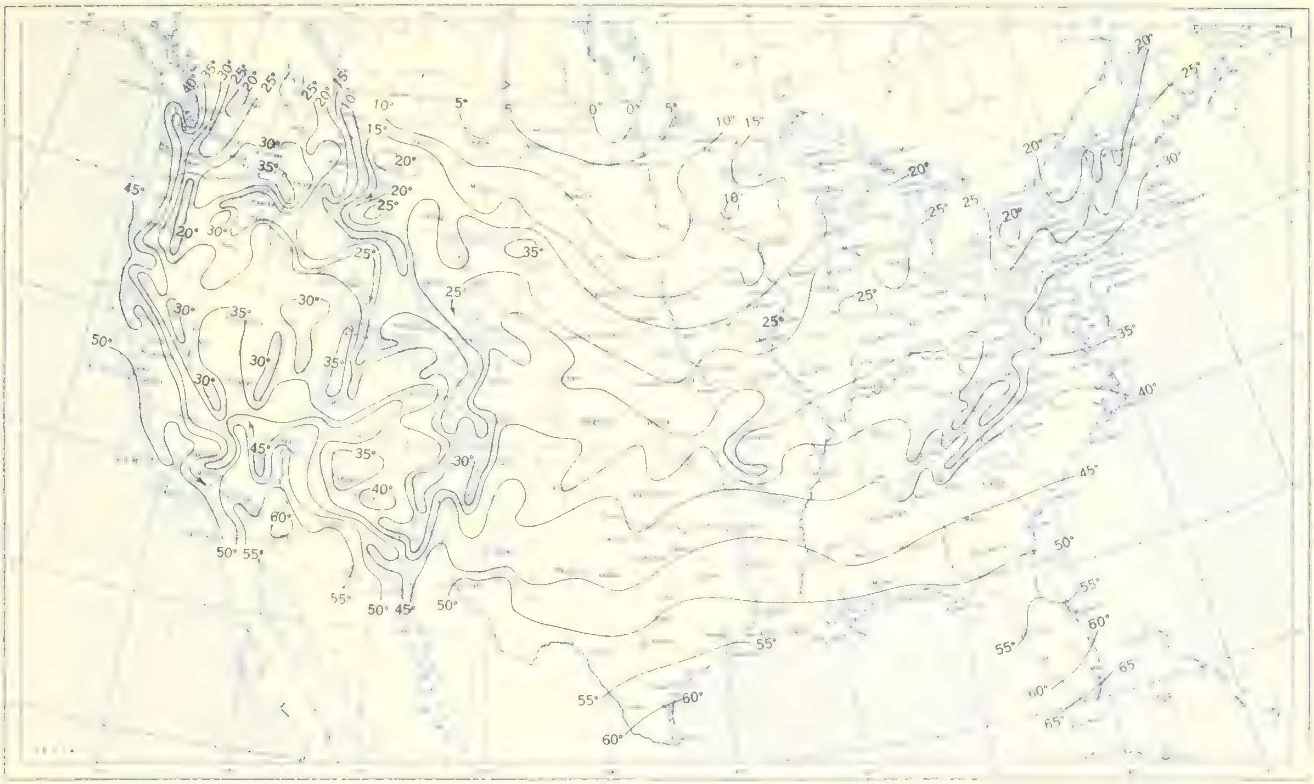
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued

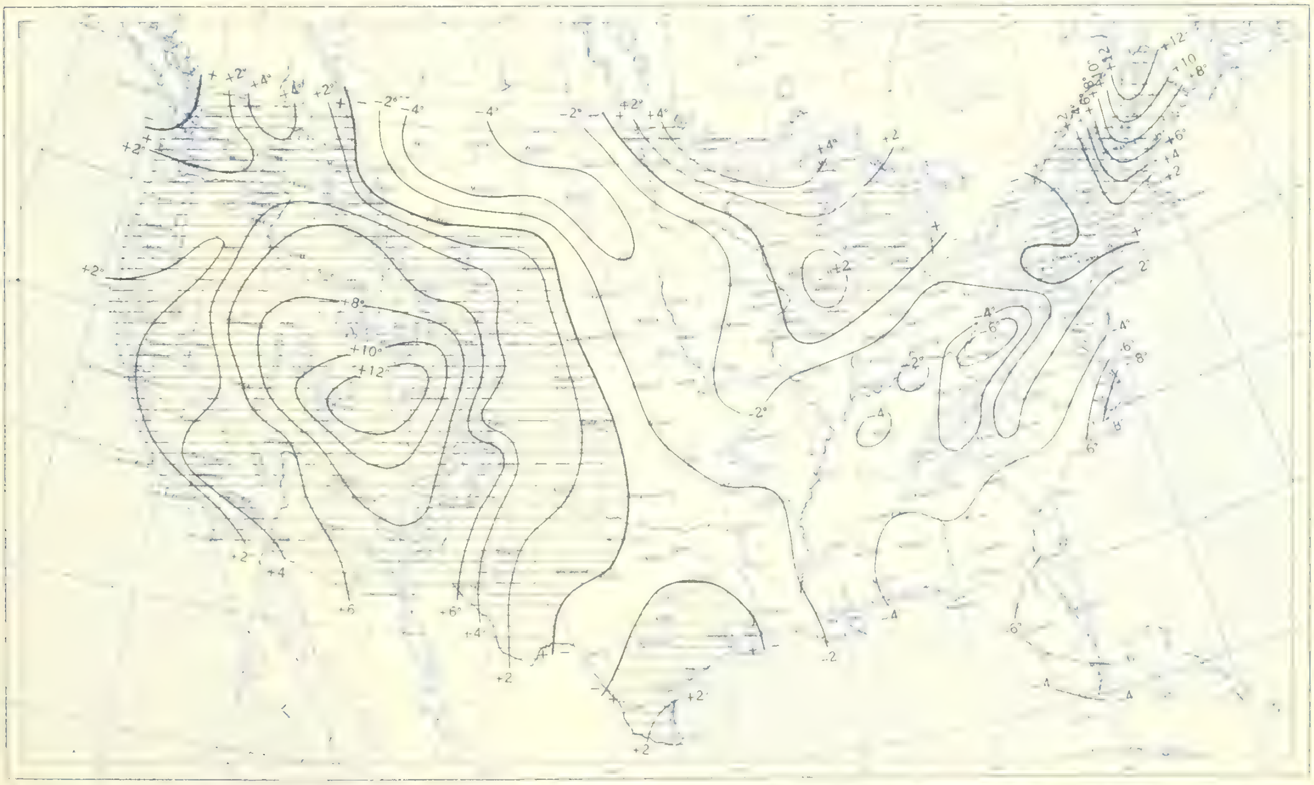
	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash.	Seattle, Wash. (U. of W.)	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island, Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
1956															
Jan. 1------	201	185	202	49	67	31	150	269	407	141	348	192	524	230	---
Jan. 2------	236	173	194	19	26	67	51	293	384	110	350	214	529	119	---
Jan. 3------	27	64	91	16	15	75	43	304	385	24	349	---	387	78	---
Jan. 4------	40	42	140	(48)	48	32	59	297	406	53	340	62	569	149	(107)
Jan. 5------	95	132	205	23	16	89	208	304	410	68	290	85	388	239	90
Jan. 6------	258	170	196	16	11	74	207	304	379	29	269	214	535	218	155
Jan. 7------	199	143	101	124	88	49	89	282	288	210	326	184	533	60	150
Average-------	151	130	161	(42)	39	60	115	293	380	91	325	158	495	156	(125)
Jan. 8------	235	155	111	103	81	55	238	297	421	184	335	---	---	---	---
Jan. 9------	31	66	28	(44)	35	171	57	280	420	34	279	27	532	29	46
Jan. 10------	32	51	10	61	68	124	19	338	412	61	323	31	493	12	(96)
Jan. 11------	52	43	20	111	90	83	38	316	310	33	338	55	490	23	150
Jan. 12------	50	22	35	78	73	143	39	314	75	89	284	58	515	44	115
Jan. 13------	80	35	69	117	86	83	140	292	125	222	204	71	429	129	109
Jan. 14------	85	81	190	35	32	40	263	264	413	238	235	97	422	246	69
Average-------	81	65	66	(78)	66	100	113	300	311	123	285	56	480	81	(97)
Jan. 15------	130	86	161	(56)	57	43	261	276	403	223	338	132	---	257	100
Jan. 16------	212	121	170	(33)	30	65	126	206	376	200	253	202	---	99	(163)
Jan. 17------	63	24	246	(65)	63	60	128	---	358	203	367	46	317	287	---
Jan. 18------	311	193	270	(112)	126	57	253	73	351	222	369	260	489	285	85
Jan. 19------	175	158	72	---	29	78	51	334	168	69	366	182	---	37	187
Jan. 20------	69	58	131	56	59	88	91	305	250	185	337	84	455	103	188
Jan. 21------	295	214	236	22	18	45	121	68	---	101	106	255	495	248	185
Average-------	179	122	184	(57)	55	62	147	210	318	172	305	166	439	188	(151)
Jan. 22------	276	156	249	(65)	54	61	114	27	---	221	274	---	526	268	176
Jan. 23------	166	178	166	(111)	32	165	289	56	---	227	253	---	314	148	(187)
Jan. 24------	317	154	270	126	114	177	295	24	386	248	334	294	489	197	94
Jan. 25------	303	229	239	(178)	225	233	148	178	317	239	372	276	480	168	107
Jan. 26------	319	128	289	108	155	90	273	34	439	242	322	252	536	315	159
Jan. 27------	257	129	218	169	153	175	218	35	412	218	179	241	529	198	94
Jan. 28------	341	209	291	11	15	99	267	40	402	108	93	274	507	285	141
Average-------	283	169	246	(110)	107	143	229	57	391	215	261	267	483	226	(137)
Jan. 29------	28	28	59	126	67	200	32	34	424	57	373	34	552	48	167
Jan. 30------	11	23	37	219	212	270	69	381	439	31	393	10	532	57	167
Jan. 31------	333	258	227	241	228	221	141	151	277	227	250	300	337	242	225
Feb. 1------	319	223	290	242	206	208	215	34	363	184	273	307	320	295	(226)
Feb. 2------	17	47	10	(130)	112	218	81	180	406	58	383	---	555	50	(222)
Feb. 3------	205	234	81	149	173	228	228	149	340	280	434	189	455	65	157
Feb. 4------	67	111	33	44	35	111	58	88	333	122	448	89	485	32	(221)
Average-------	140	132	105	(164)	147	208	117	145	369	137	365	155	462	113	(198)

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Chart I. A. Average Temperature (°F.) at Surface, January 1956.

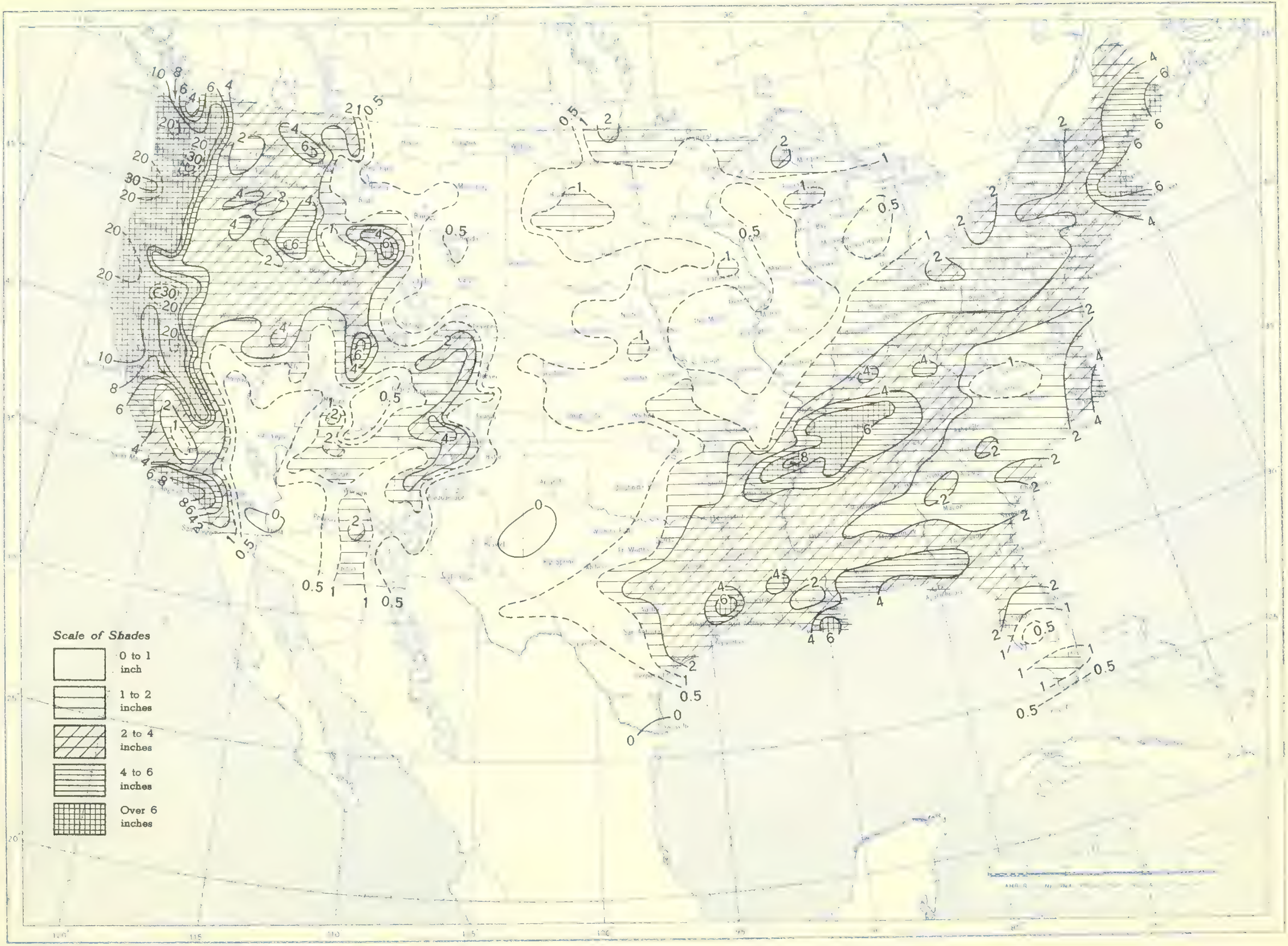


B. Departure of Average Temperature from Normal (°F.), January 1956.



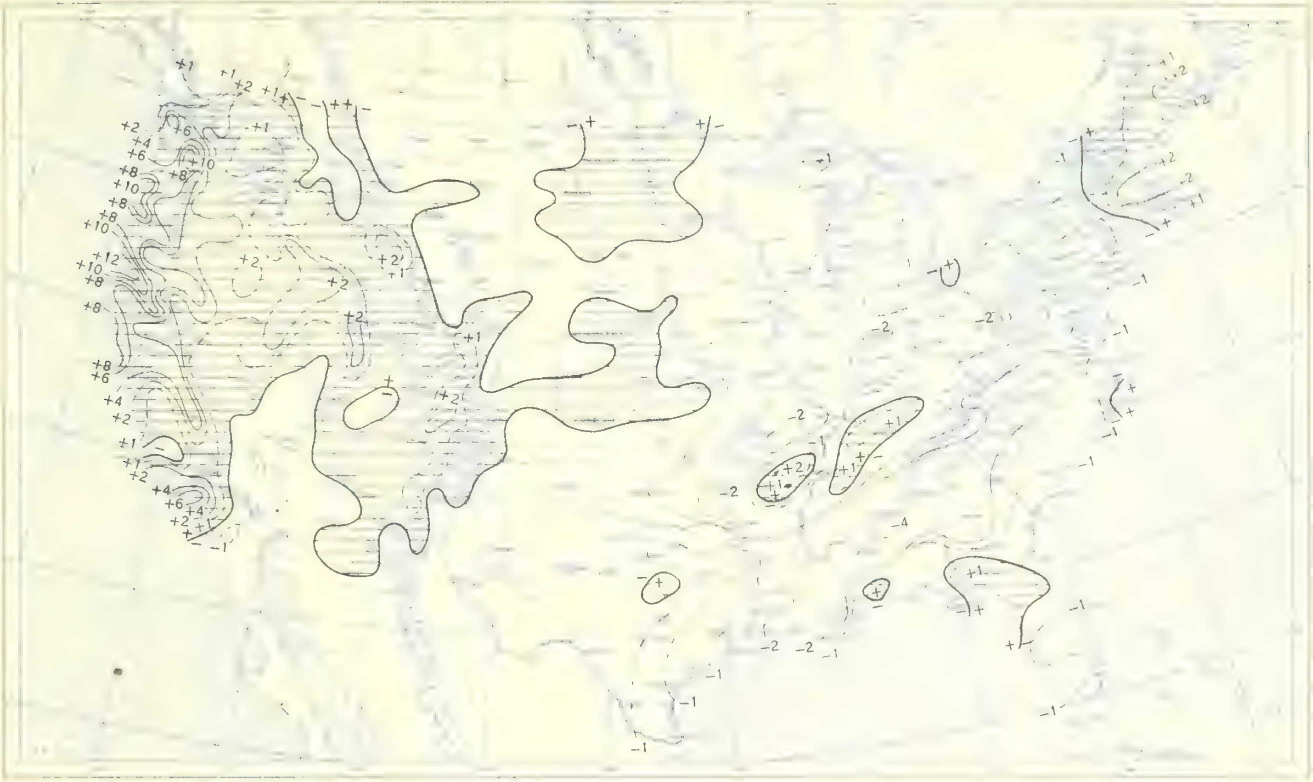
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), January 1956.

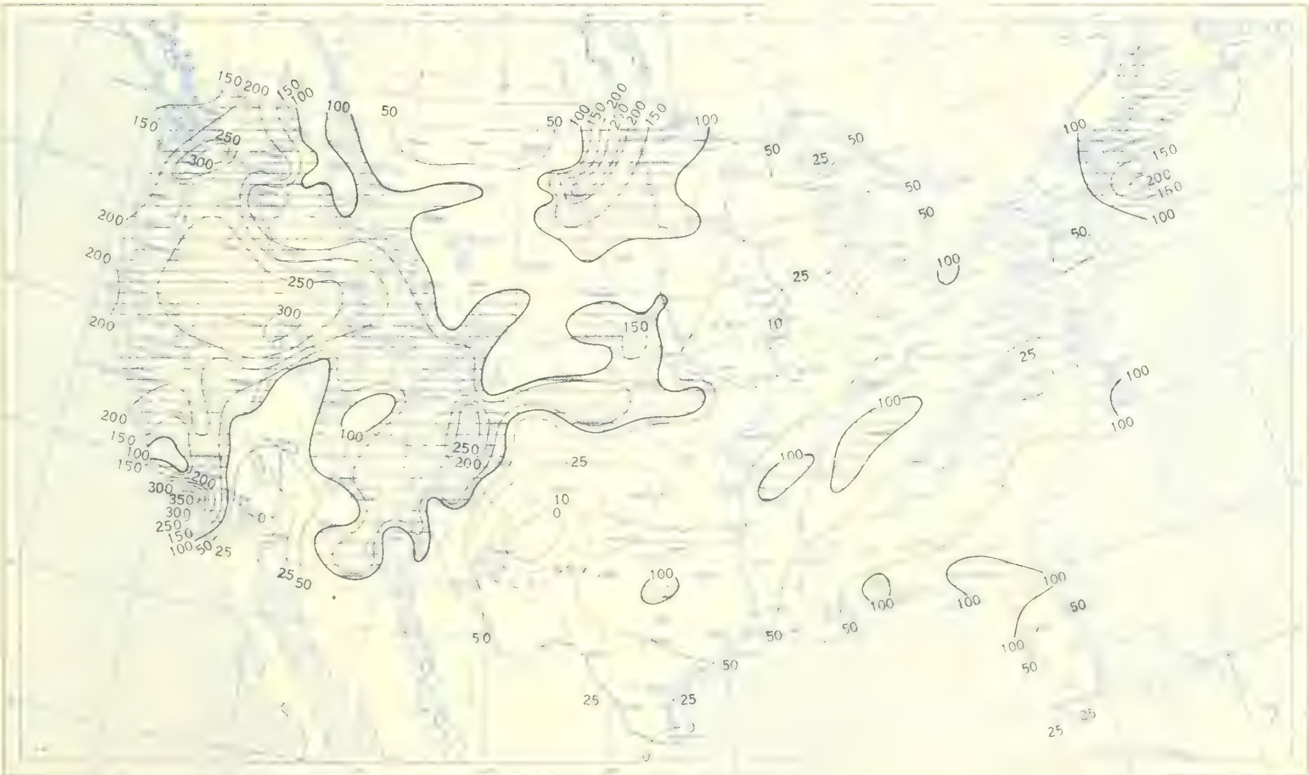


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), January 1956.

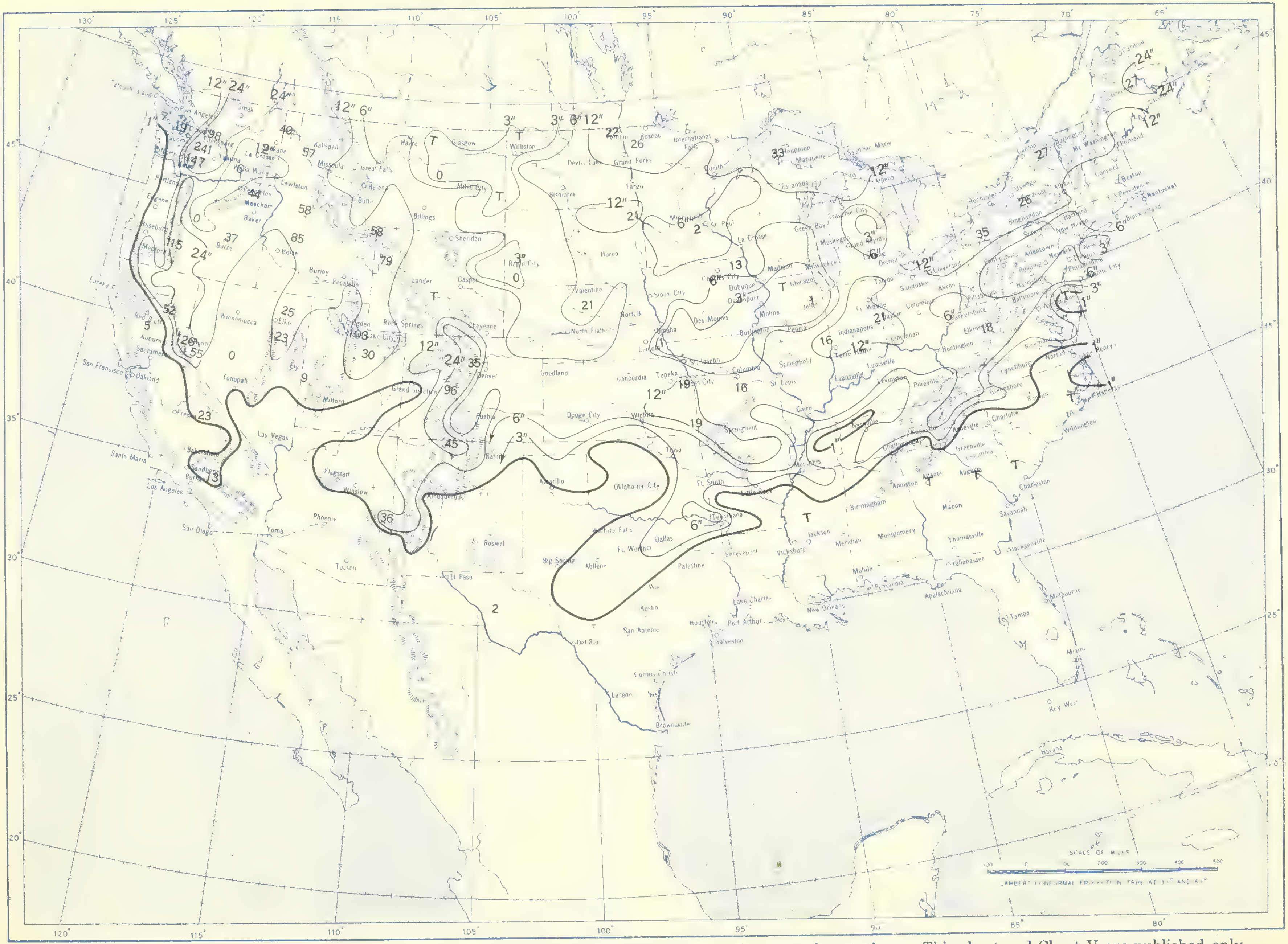


B. Percentage of Normal Precipitation, January 1956.



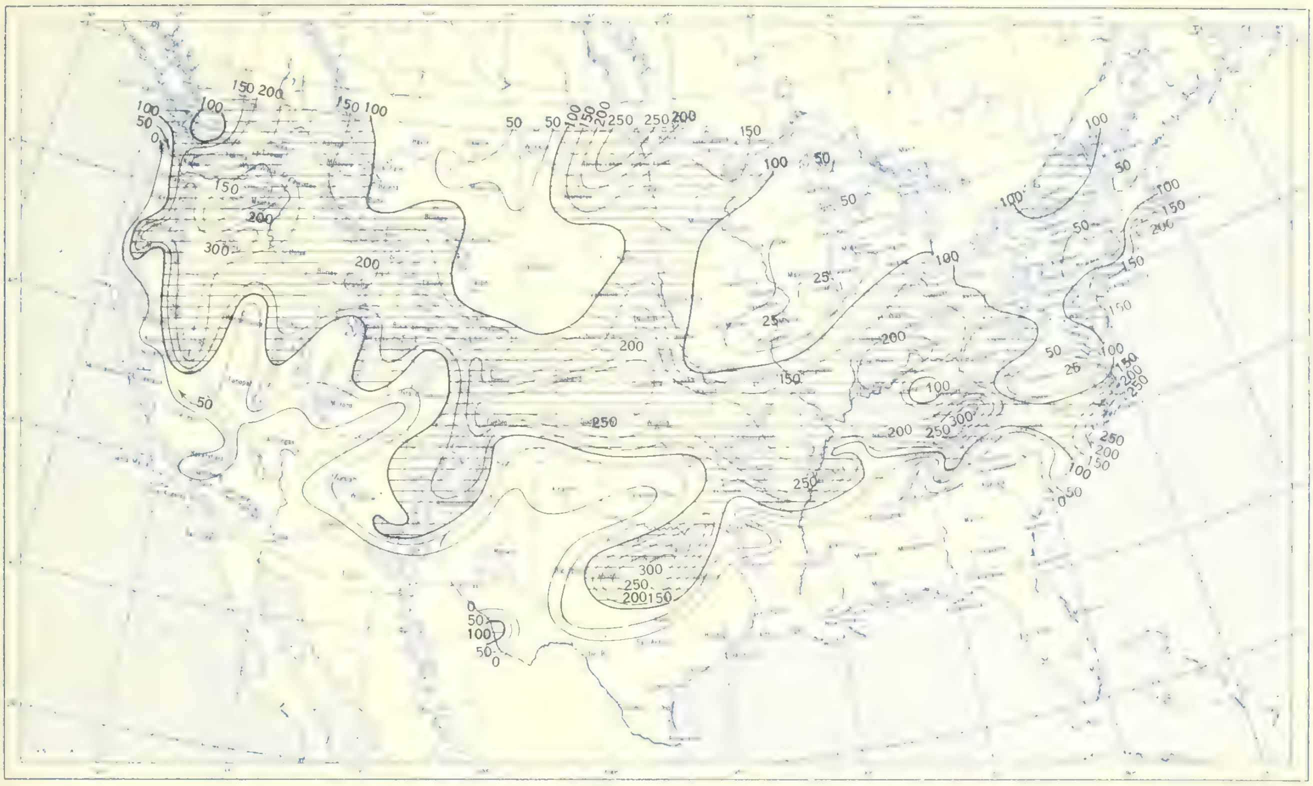
Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart IV. Total Snowfall (Inches), January 1956.

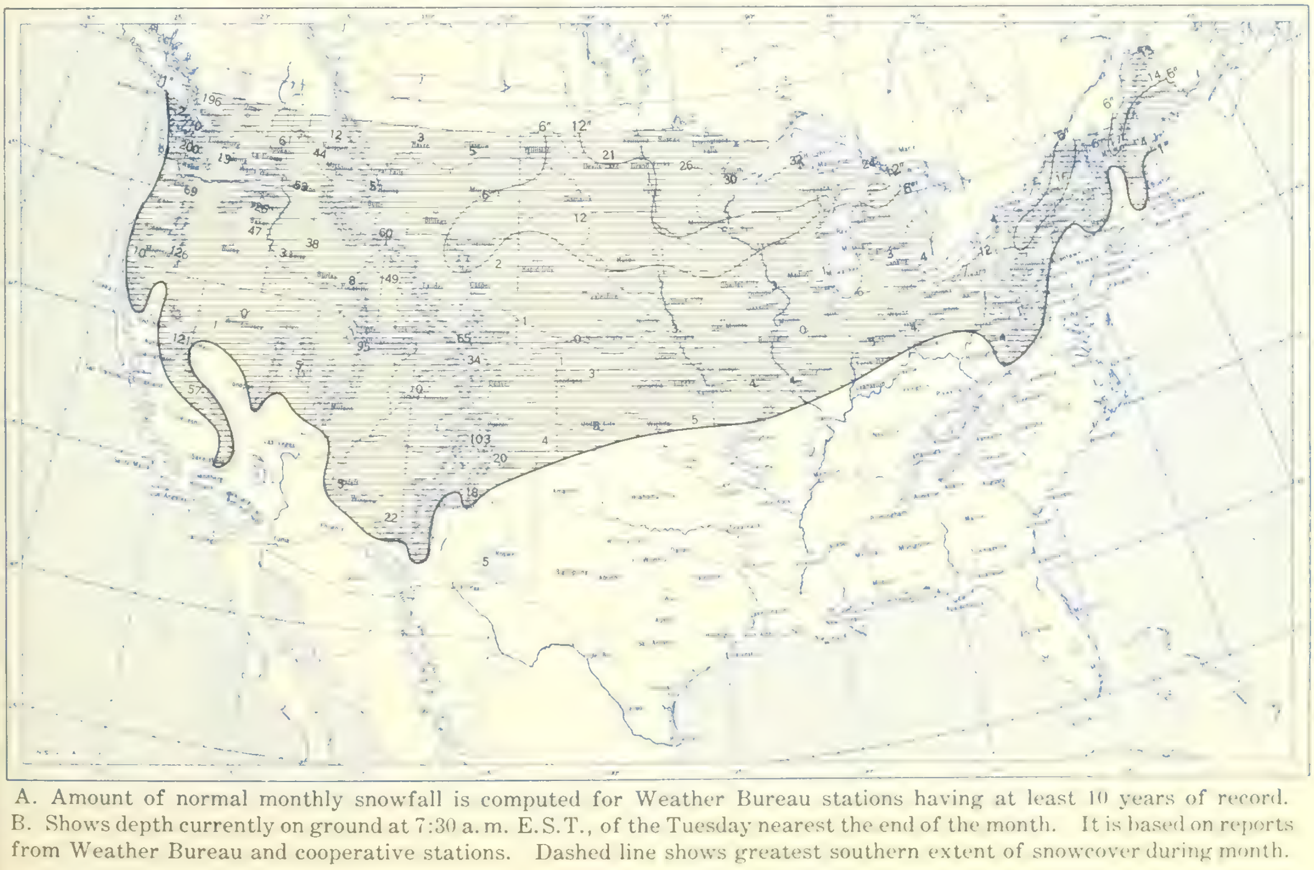


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Normal Snowfall, January 1956.

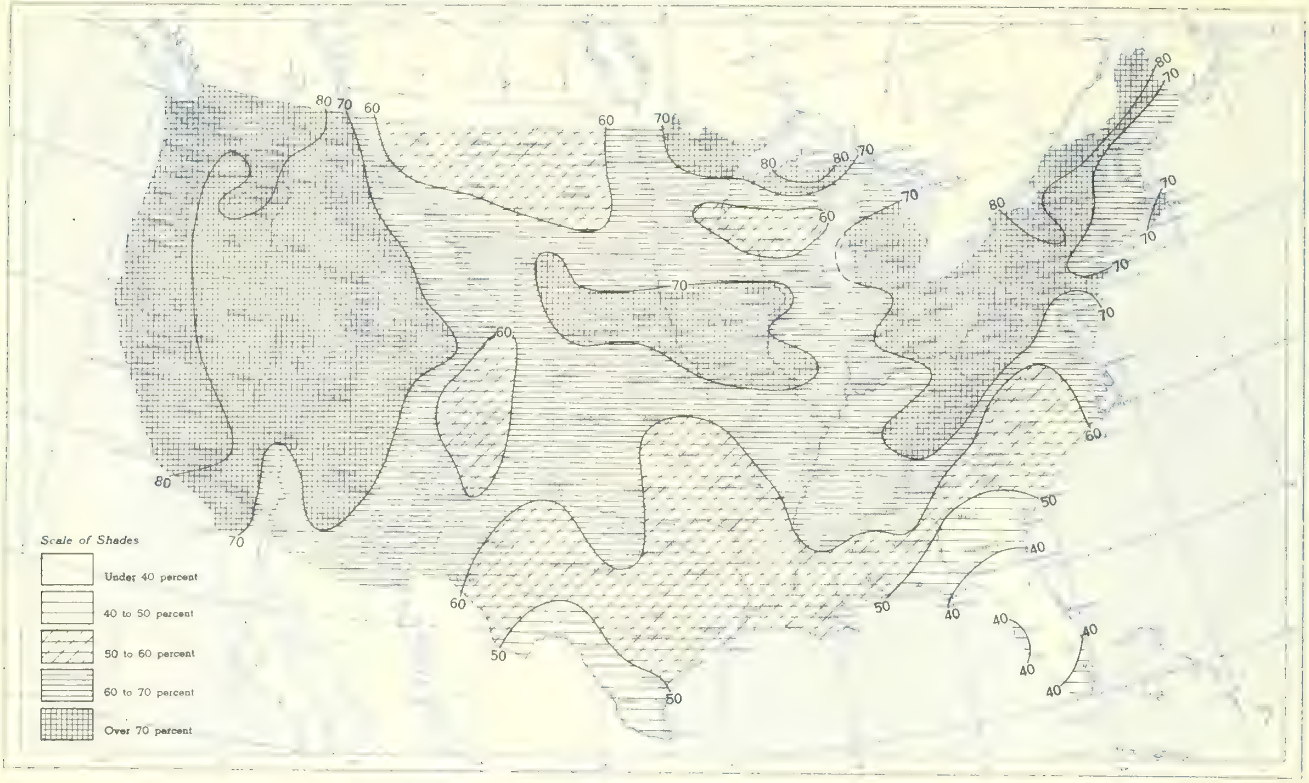


B. Depth of Snow on Ground (Inches). 7:30 a. m. E. S. T., January 30, 1956.

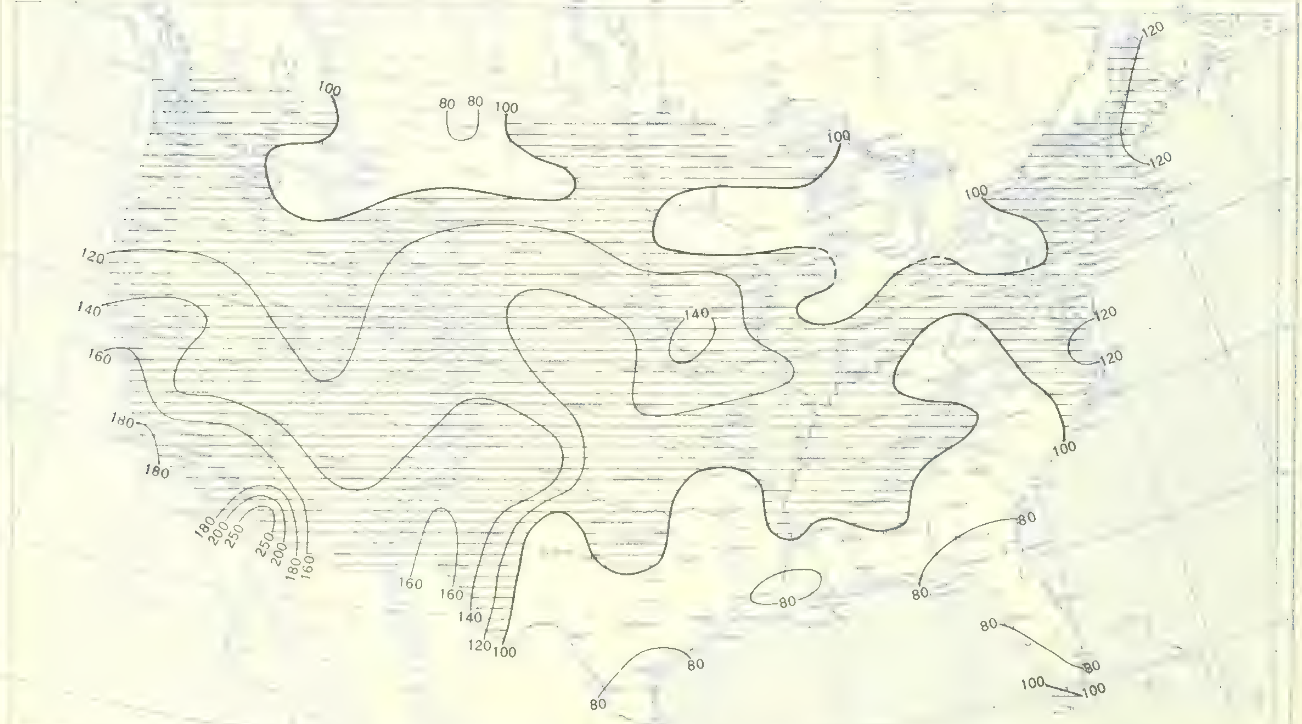


A. Amount of normal monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:30 a. m. E. S. T., of the Tuesday nearest the end of the month. It is based on reports from Weather Bureau and cooperative stations. Dashed line shows greatest southern extent of snowcover during month.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, January 1956.

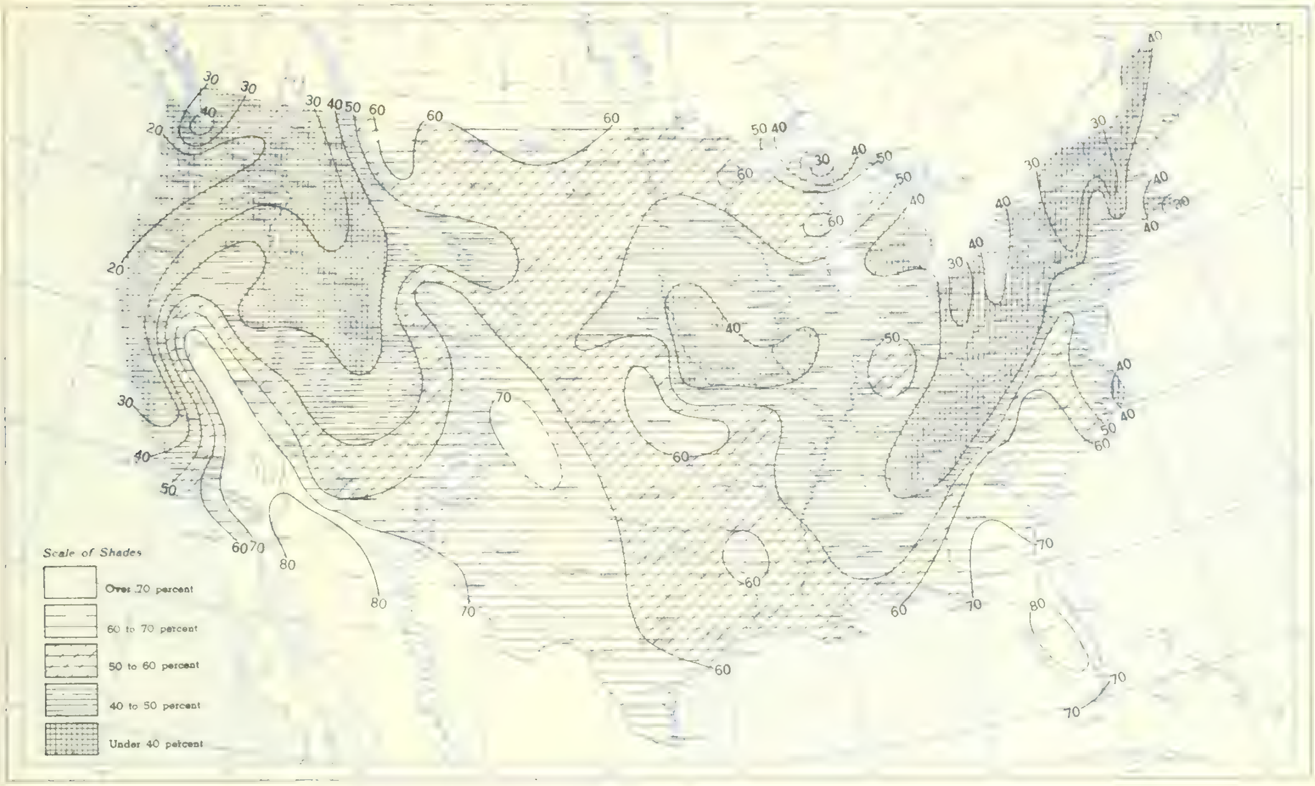


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, January 1956.

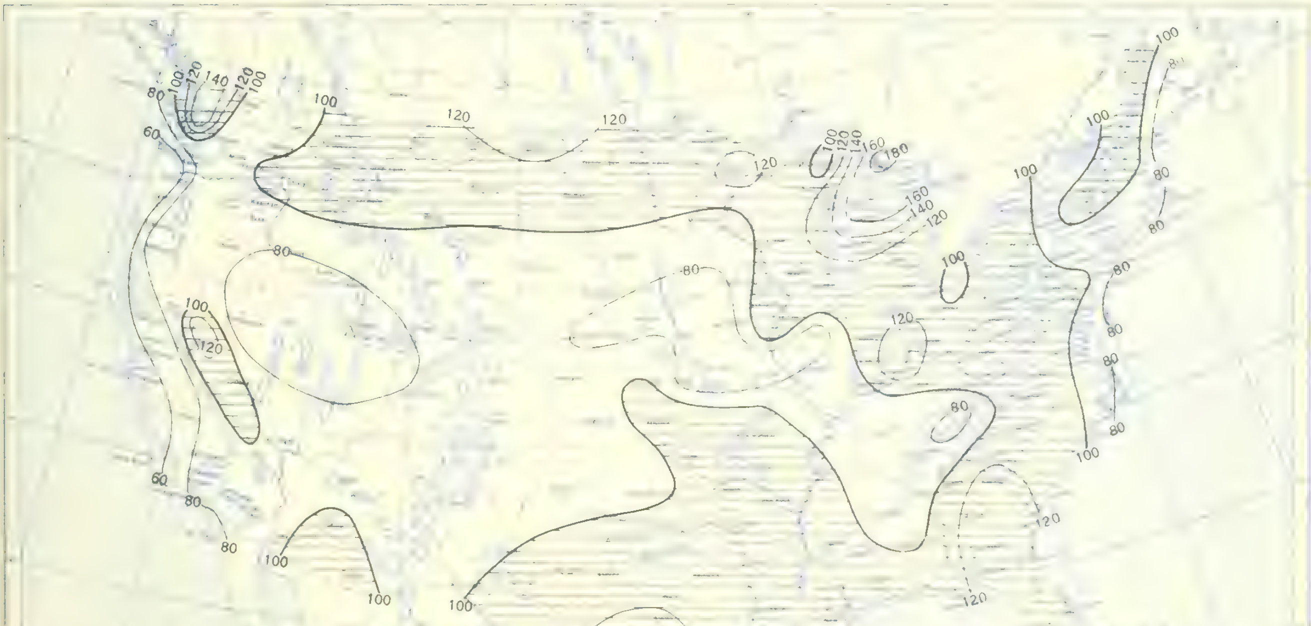


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, January 1956.



B. Percentage of Normal Sunshine, January 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, January 1956. Inset: Percentage of Mean Daily Solar Radiation, January 1956. (Mean based on period 1951-55.)

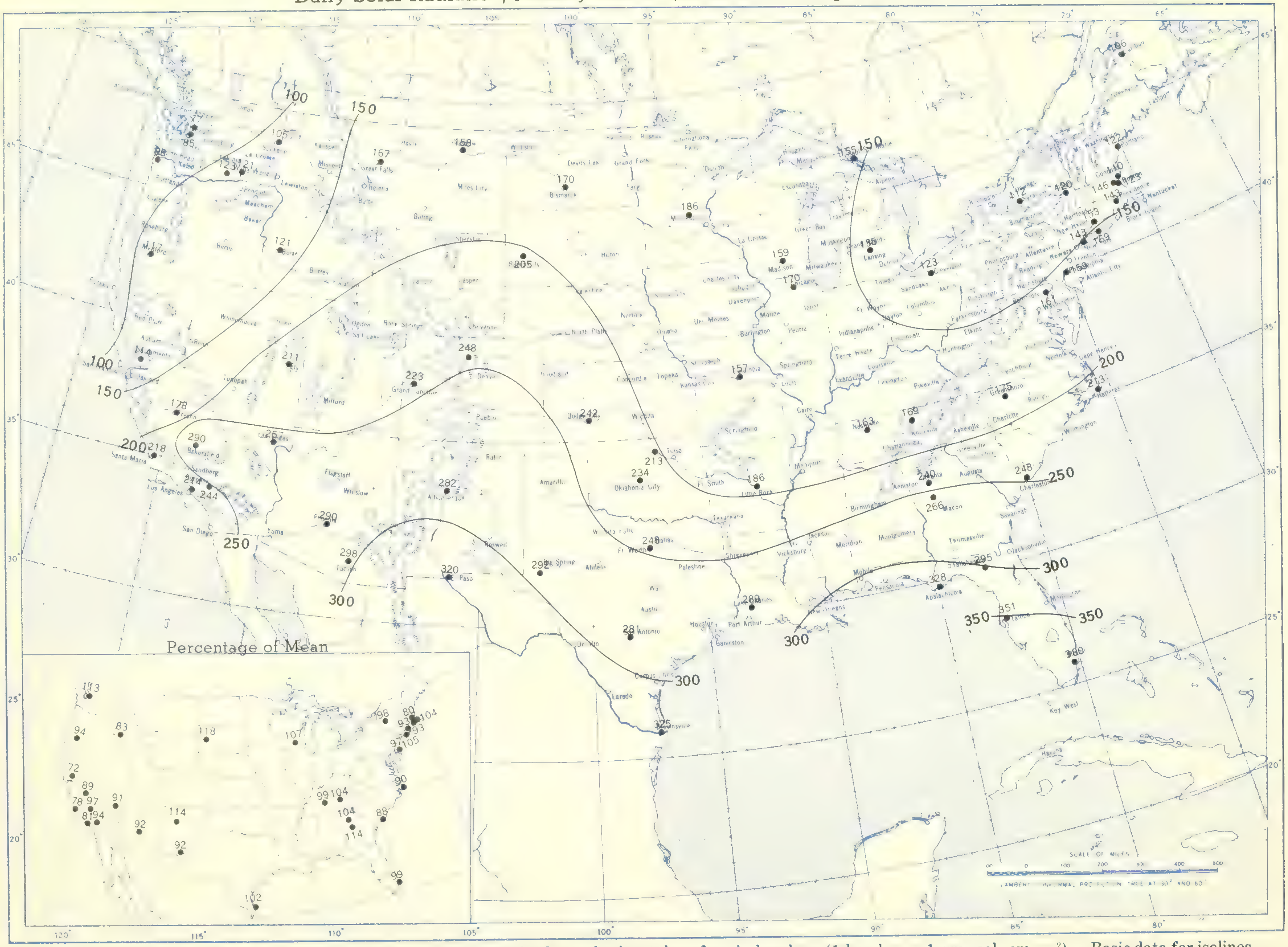
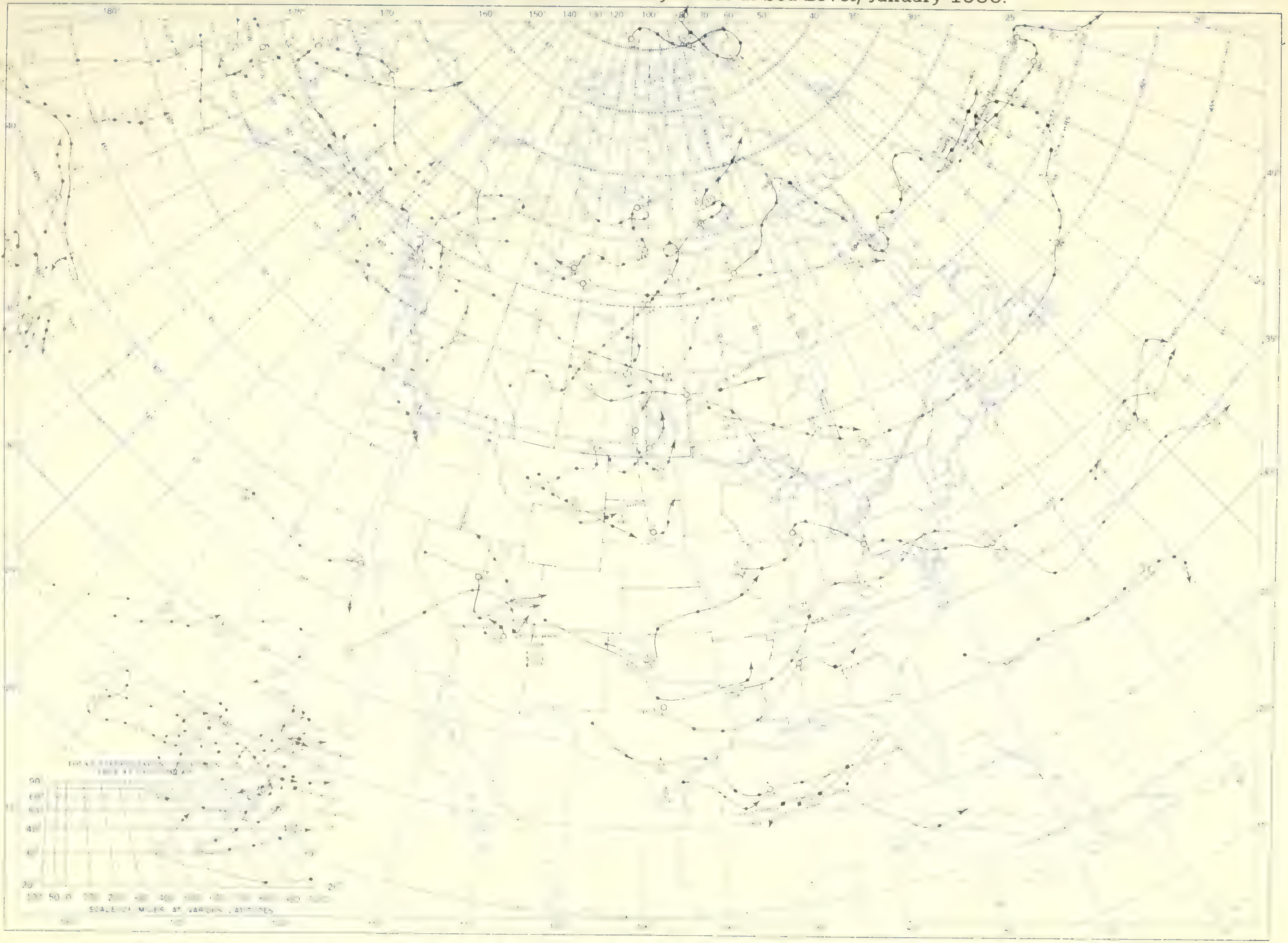


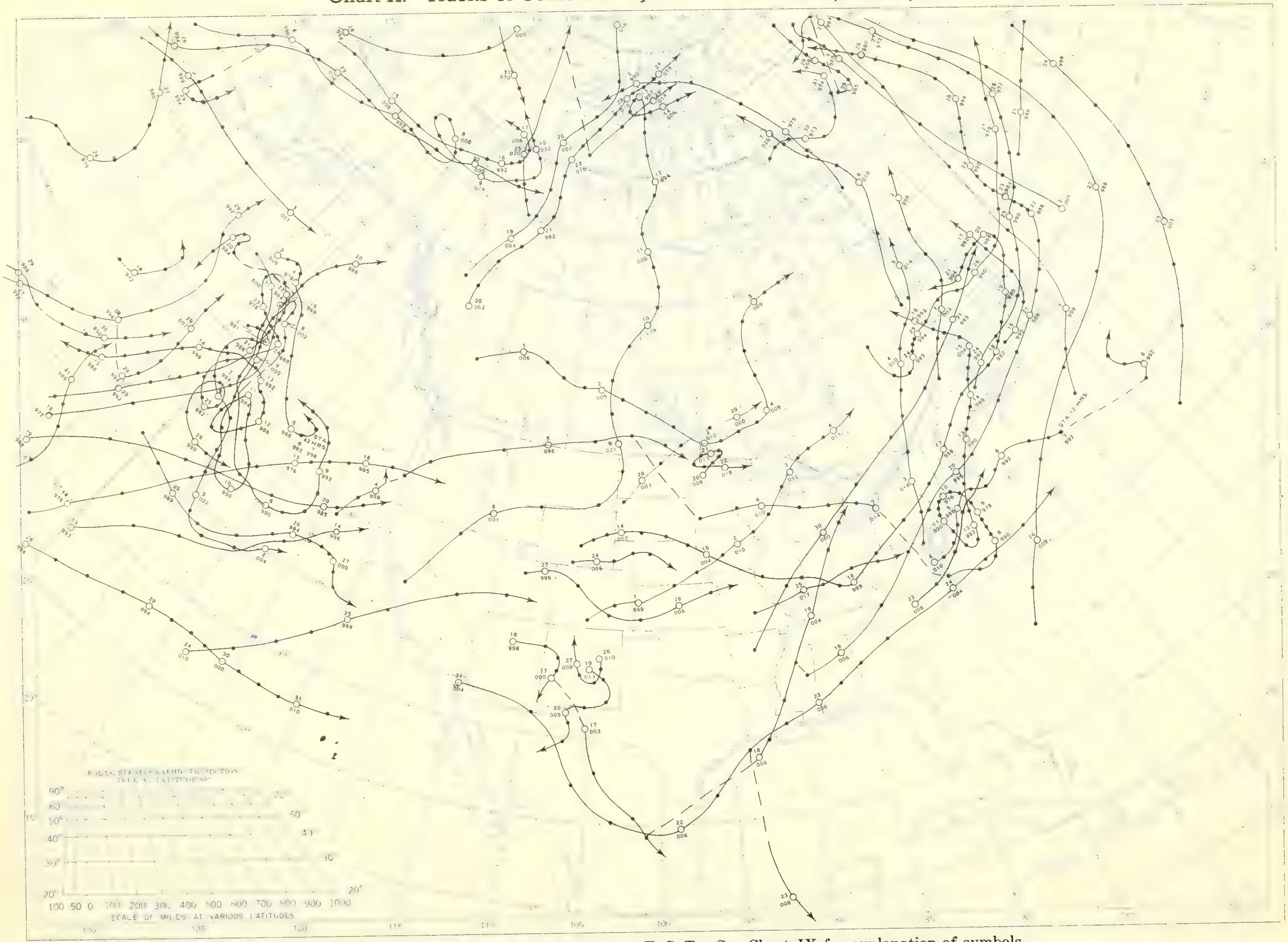
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$). Basic data for isolines

Chart IX. Tracks of Centers of Anticyclones at Sea Level, January 1956.



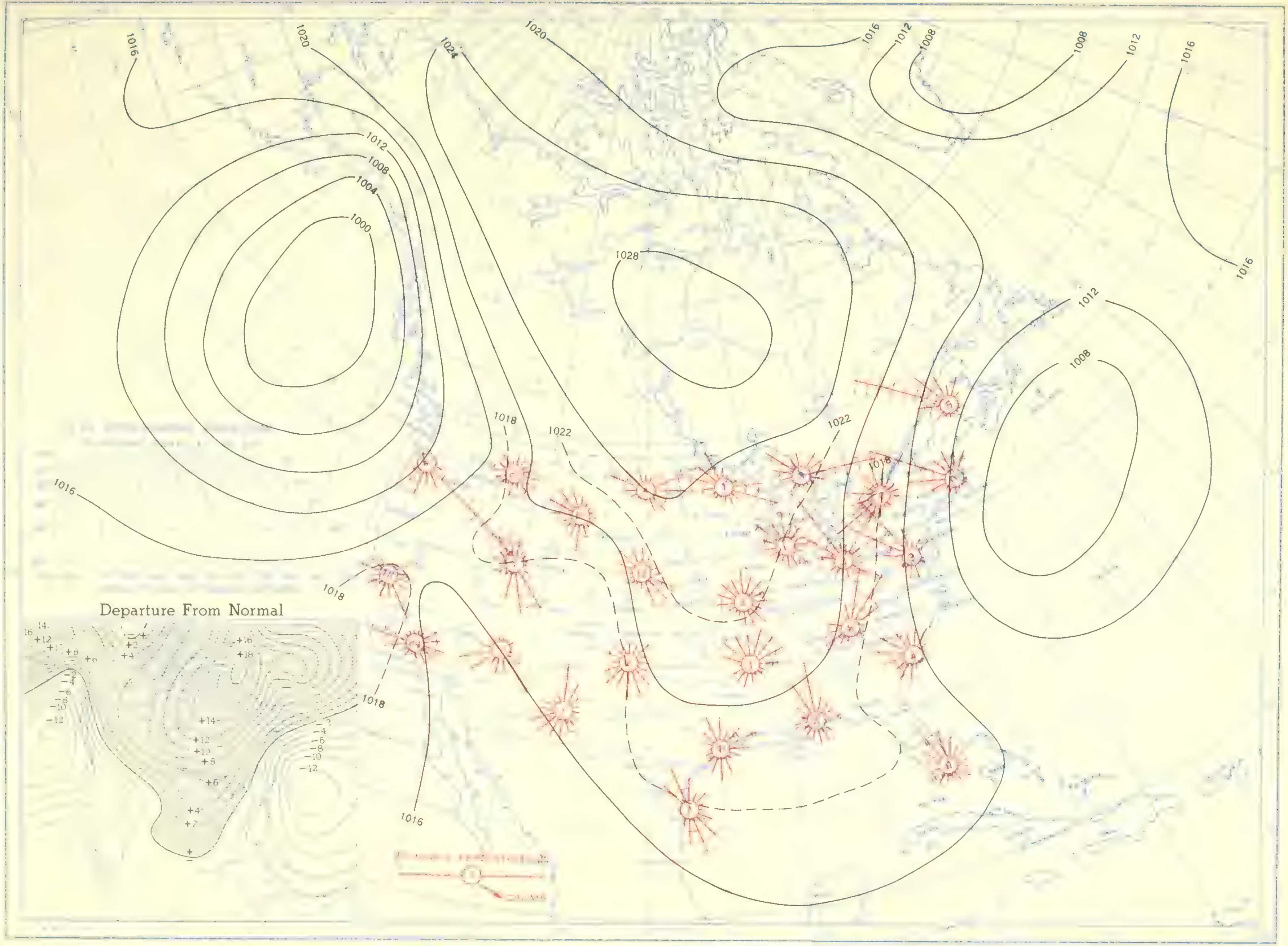
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, January 1956.



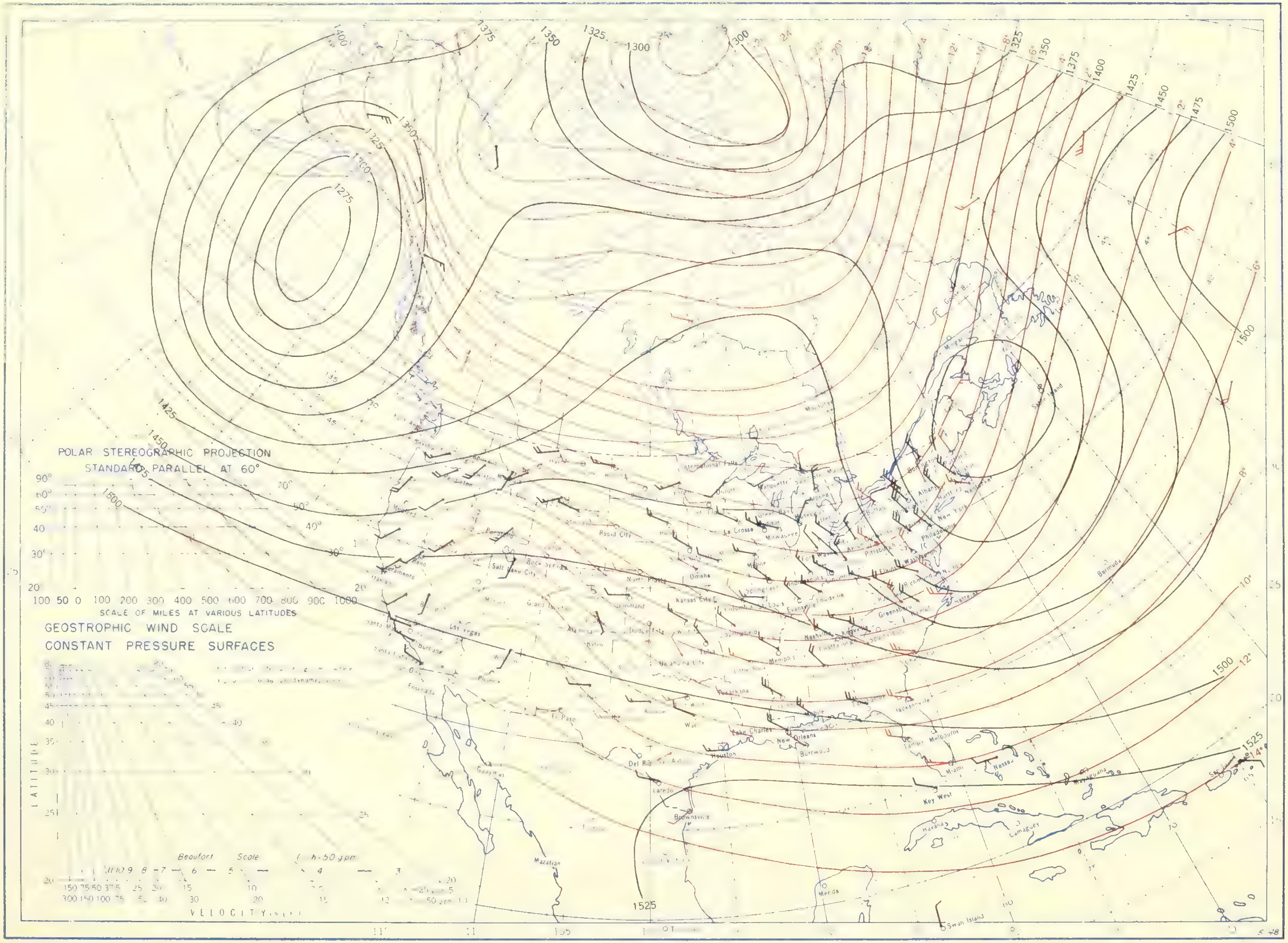
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart III. Average Sea Level Pressure (mb.) and Surface Windroses, January 1956. Inset: Departure of Average Pressure (mb.) from Normal, January 1956.



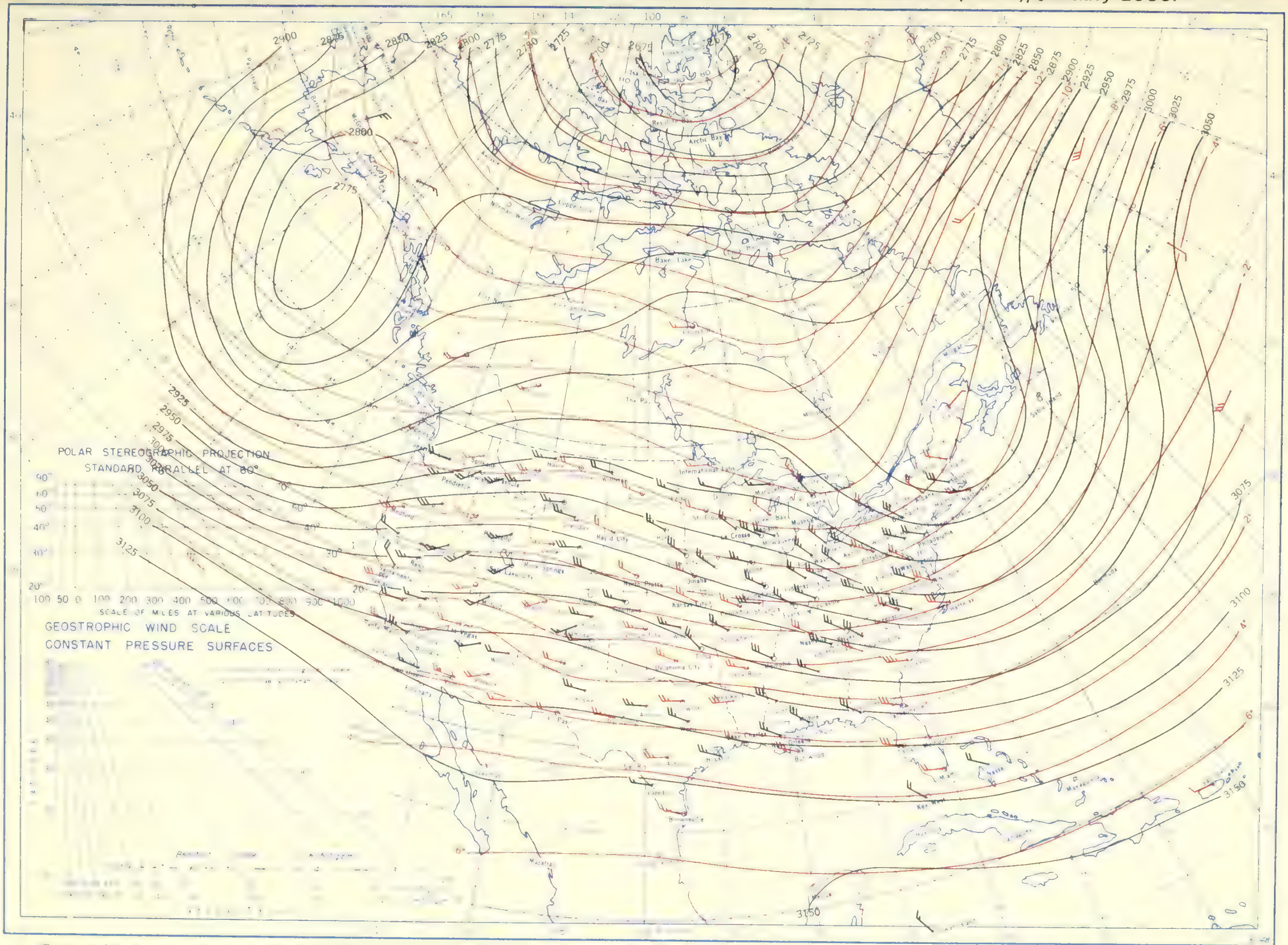
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 850-mb. Pressure Surface, Average Temperature in °C. at 850 mb., and Resultant Winds at 1500 Meters (m.s.l.), January 1956.



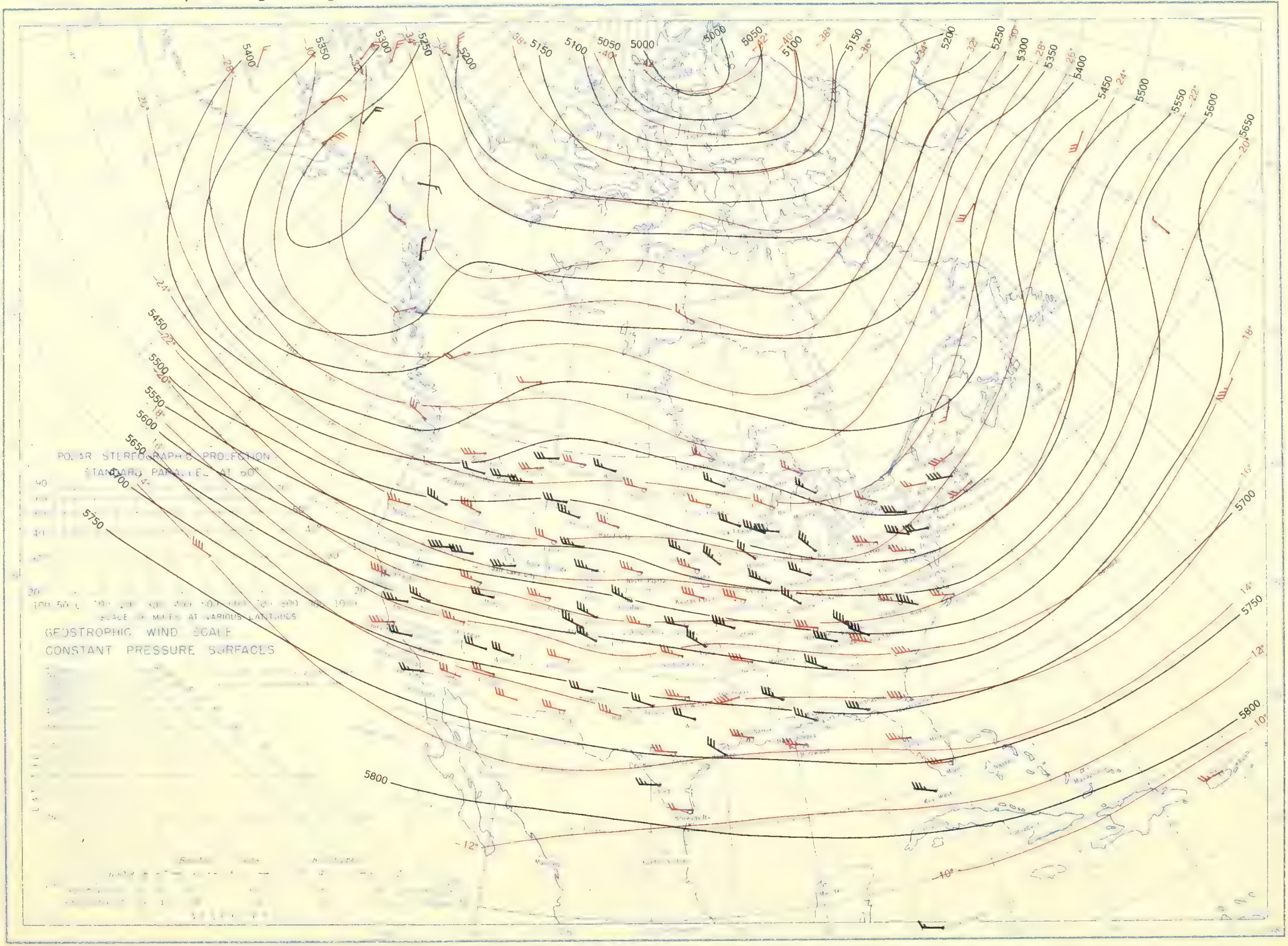
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 700-mb. Pressure Surface, Average Temperature in ° C. at 700 mb., and Resultant Winds at 3000 Meters (m.s.l.), January 1956.



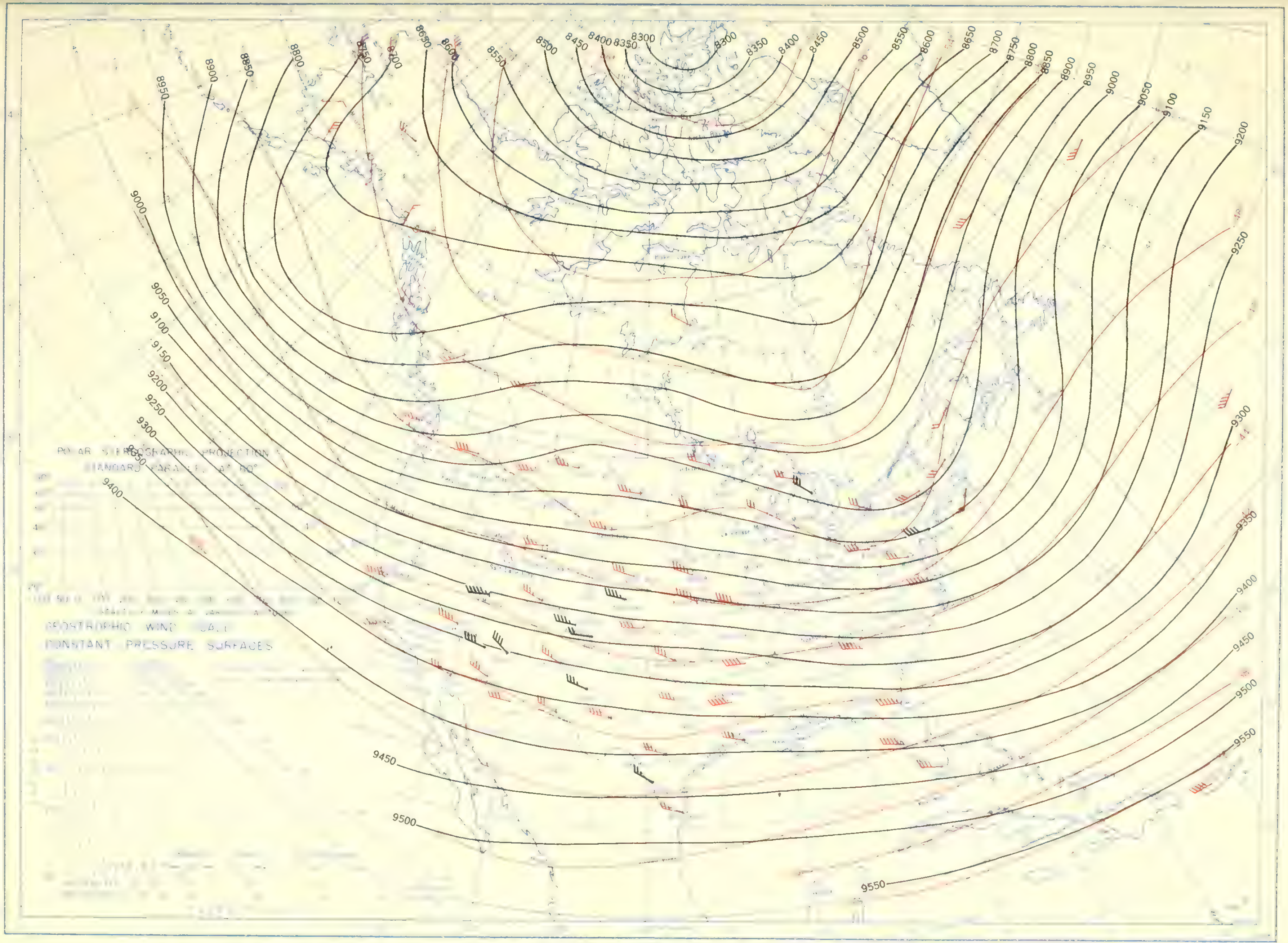
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIV. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 500-mb. Pressure Surface, Average Temperature in °C. at 500 mb., and Resultant Winds at 5000 Meters (m.s.l.), January 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.;

Surface, Average Temperature in °C. at 300 mb., and Resultant Winds at 10,000 Meters (m.s.l.), January 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

U. S. DEPARTMENT OF COMMERCE
SINCLAIR WEEKS, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

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CL

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

FEBRUARY 1956
Volume 7 No. 2

ASHEVILLE: 1956

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NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 2 FEBRUARY 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

Mild, wet weather in the East, a reverse of the January regime, relieved developing droughty conditions and raised soil moisture reserves and water supplies in most sections to satisfactory levels. The month was decidedly cold in the Far West, also a reverse of the well above normal warmth there in January, but precipitation continued heavy in the Northwest where snow accumulation in the mountains was approaching record amounts at the end. Precipitation in large parts of Arizona, New Mexico, Texas, and Oklahoma, most of it falling during one of the worst snowstorms in the Southwest in 50 years, brightened the moisture outlook. But in the remainder of the Great Plains, particularly the western portions, precipitation was too light to improve the condition of the dry, powdery soil which was whipped up into severe duststorms by high winds on the 24th.

The storm of the 24th, after moving out of the Plains greatly intensified in its path across the Northeast where record low pressures, record high winds, and widespread damage occurred on the 25th.

PRECIPITATION.--Beneficial precipitation east f a line joining Amarillo, Tex., and Alpena, Mich., totaled over 6 inches in the Ohio Valley, entucky, Tennessee, and Arkansas, and about 3 to inches in the Atlantic Coastal States except lorida and extreme northern New England. Rains ere of frequent occurrence from Arkansas and the hio Valley eastward, many stations reporting easurable amounts on more than 20 days. Chattaooga, Tenn., had rain on 21 days, which was the reatest number for February since 1887. Greenille, N. C., had a record February total of 9.74 nches, and among stations with near record amounts ere Reading, Pa., 4.88 inches; Pittsburgh, Pa., .98; Akron, Ohio, 5.24; Nashville, Tenn., 10.31; ndianapolis, Ind., 3.99; and Little Rock, Ark., 1.02 inches.

Precipitation which was unusually heavy in orthern California, Oregon, and Washington toaled considerably less than the unprecedented mounts in January, but combined totals for the months were among the greatest of record. In uch of New Mexico precipitation, exceeding an nch, improved moisture conditions considerably.

Precipitation was deficient in Florida where onthly totals, less than 2 inches, were only 50 ercent of normal in parts of the Peninsula. akeland, in the center of the Peninsula, reported deficiency of 24.91 inches for the past 26 months. rrigation of many citrus orchards was necessary, wing to the dry weather.

The central and northern Great Plains and parts f Iowa, Minnesota, and Wisconsin received less han one-half inch of precipitation for the month, nd in most of these areas monthly totals were ess than 50 percent of normal. Waterloo, Iowa, reorted only 0.09 inch. At the end of the month the oil was dry and powdery from the Texas Panhandle orthward to western South Dakota and subject to lowing dust whenever high winds occurred such s those on the 24th when Oklahoma City, Okla., and Wichita Falls, Tex., reported one of their worst duststorms in years.

SNOWFALL.--At the beginning of the month an inch or more of snow covered the ground north of lines joining Roseburg, Oreg., Albuquerque, N. Mex., and Hartford, Conn., and also in some additional areas in central and northern portions of New Mexico and Arizona, and in the Sierra Nevada Mountains, with depths ranging up to about 30 inches in the Northeast and the Great Lakes region, and 200 inches in the Cascades.

During the first 3 days of the month this cover was extended over western Oklahoma, the Texas Panhandle, and most of the remainder of New Mexico by one of the worst snowstorms in 50 years. Roswell, N. Mex., reported 92 consecutive hours of snowfall during this storm which left 11 inches on the ground there. Throughout the area 6 to 18 inches of snow, with 9-foot drifts locally, halted traffic, marooned travelers and some school children, and disrupted communication and utility services. The cover, retreating during the remainder of the month, by the end was limited to extreme northern areas east of the Rockies, and in the West virtually the entire States of New Mexico, Arizona, and Nevada were bare. However, depths continued to increase in the extreme North, the most notable increase amounting to over 200 inches in the northern Cascades.

At the end of the month the water supply outlook in the Far West continued good to excellent in central and northern areas, but prospects were for decidedly deficient supplies from the Mojave River Basin area of southern California across most of Arizona and New Mexico, southeastern Colorado, and portions of central and southern Utah.

TEMPERATURE.--Temperatures for the month averaged above and below normal east and west of a line joining Del Rio, Tex., and Duluth, Minn., respectively, with extreme anomalies ranging from 4° above normal in the Southeast and along the Atlantic Seaboard to 10° below normal in the Pacific Northwest.

The month's lowest temperatures in the western two-thirds of the Country occurred during the first 3 days when a cold Arctic air mass, with center of highest pressure in the Pacific Northwest where sea level pressures of 31.06 inches were measured at Pocatello and Lewiston, Idaho, covered most of the Country. On the 1st West Yellowstone, Mont., recorded -52° for the lowest temperature of the month and subzero minima between the upper Mississippi River and the Cascades extended to the northern portions of Arizona and New Mexico, southern portions of Kansas, and northern Missouri.

Temperatures in northern areas generally remained above zero from the 5th until midmonth when another surge of Arctic air dropped them below the zero level in the northern Rockies and northern Plains where daily minima dipped below the zero mark during the remainder of the month.

Lowest temperatures in the Northeast occurred about the middle of the last decade as a ridge of high pressure, extending north and south over the middle of the North American Continent, moved slowly out over the Atlantic. Subzero minima were recorded by stations at higher elevations as far south as the central Appalachians.

During the early days of the month freezing was recorded by nearly all stations along the Southwestern Border and Pacific Coast from Laredo, Tex., to Tatoosh Island, Wash. This freeze caused slight damage to citrus, vegetables, and new alfalfa in southwestern Arizona, and made orchard heating necessary in some sections of southern California. Another freeze in these southwestern areas about midmonth caused only light, scattered damage. Southern areas east of the Great Plains were unusually free of freezes.

DESTRUCTIVE STORMS.--The month's stormiest period was the 24th and 25th when a cold front crossed the eastern two-thirds of the nation. Most of this area experienced winds of 40 to over 60 m.p.h. High winds set new records for February on the 25th at many eastern stations including Wilmington, N. C., Rochester and Binghamton, N. Y., where speeds of 66 m.p.h. were recorded, and Cleveland, Ohio, where the highest speed was 65 m.p.h. Tornadoes were reported from Missouri, Illinois, Indiana, and Ohio. Glaze in and around the Great Lakes region was responsible for the closing of some schools, and for hazardous highways on which many accidents occurred. High winds whipped up severe duststorms in Texas and sections of other states in the Southwest. Overall damage caused by this storm amounted to many millions of dollars, with estimates placed at $10,000,000 in Pennsylvania, $2,000,000 in Kentucky and over $1,000,000 in Oklahoma. In Ohio damages of a million or more were estimated for the northeastern and Columbus areas, $500,000 in Hamilton and vicinity, and hundreds of thousands in several other sections. In Georgia a tornado caused $900,000 damage and hail $750,000 on the 18th. Damage from winds in northern Alabama on the 17th amounted to about $600,000.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1 FEBRUARY 1956

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Eufaula	88	19	Sylacauga 4NE	20	29	Rockford	13.70	Fort Morgan	3.90
Arizona	2 Stations	82	23+	2 Stations	-19	3+	Mt Lemmon	3.41	6 Stations	.00
Arkansas	do	83	16+	Gravette	17	2+	Hot Springs 1NNE	16.03	Gravette	2.49
California	8 Stations	80	13+	Boca	-29	2	Gasquet RS	24.29	13 Stations	.00
Colorado	2 Stations	75	23	Sugarloaf Reservoir	-44	2	Wolf Creek Pass 4W	4.46	Genoa	.00
Connecticut	Mount Carmel	57	27	2 Stations	-1	4+	4 Stations	5.27	Woodbury 3W	2.93
Delaware	Lewes	65	15	Georgetown 5SW	13	24	Wilmington N Castle WB	4.21	Milford	2.90
Florida	Hypoluxo	92	28	2 Stations	29	13+	Defuniak Springs	6.63	Arcadia	.26
Georgia	2 Stations	86	17+	do	20	21+	Flat Top	16.06	Millhaven 9E	1.23
Idaho	2 Stations	63	21+	Gray [illegible]NNW	-50	1	Burke 2ENE	7.58	Challis	T
Illinois	E. St. Louis Parks C	62	29	La Harpe	-9	3	New Burnside	8.16	Quincy Dam	.57
Indiana	5 Stations	67	25	3 Stations	-4	1	Leavenworth Dam	10.04	Whiting	1.11
Iowa	7 Stations	62	29	Sibley	-22	2	Albia Pasture Imp. Fm	2.20	3 Stations	.09
Kansas	Independence	85	24	Smith Center	-15	3	La Cygne	1.41	Richfield 10WSW	.04
Kentucky	Hickman 1E	71	28	3 Stations	12	1+	Liberty	12.45	Paducah	5.41
Louisiana	Westdale 2WNW	85	17+	Mansfield 3WSW	24	6+	Lake Providence	13.07	Golden Meadow	2.09
Maine	Bridgton 1NNW	49	8	Fort Kent	-23	1	Rockland	4.79	Presque Isle	1.26
Maryland	Fort George G Meade	70	25	Sines Deep Creek	0	1	Sines Deep Creek	7.37	Owings Ferry Landing	2.07
Massachusetts	3 Stations	53	25+	Birch Hill Dam	-16	4	Peru	6.58	Adams	2.73
Michigan	2 Stations	51	25	Kenton U S Forest	-25	28	Eau Claire 4NE	3.22	Kenton U S Forest	.11
Minnesota	Canby	44	29	Red Lake Falls	-39	2[illegible]	Austin 4S	1.02	Milan	.03
Mississippi	Monticello	87	20	Houston 2NE	23	7	Holly Bluff	16.92	Pascagoula High School	3.35
Missouri	2 Stations	83	24+	Princeton	-20	3	Caruthersville	9.54	Monroe City	.57
Montana	[illegible]	61	23	West Yellowstone	-52	1	East Glacier	6.50	6 Stations	.00
Nebraska	Lexington 7ESE	69	29	Gordon	-21	1	Falls City	.85	Ellsworth	.03
Nevada	Las Vegas	71	22	Deeth	-31	1	Glenbrook	3.10	8 Stations	.00
New Hampshire	Nashua 3N	50	25	2 Stations	-25	4	Dixville Notch	5.76	North Stratford	1.32
New Jersey	Long Branch	64	25	do	5	4+	Clayton	8.69	Belmar	1.45
New Mexico	2 Stations	81	23+	Gavilan	-30	3	White Signal	2.47	Hayden 6NE	.01
New York	4 Stations	60	25	Indian Lake 2SW	-26	4	Slide Mountain	6.88	Massena 1NE	1.32
North Carolina	Fayetteville 2SE	84	19	5 Stations	13	1+	Coweeta 8	17.21	2 Stations	3.44
North Dakota	Marmarth	53	29	Munich 4SW	-40	17	Walhalla	.93	4 Stations	T
Ohio	2 Stations	67	25	Mansfield 6W	-4	1	Portsmouth	8.54	Catawba Island 1SW	1.33
Oklahoma	do	89	24	Boise City	3	2	Kiamichi Tower	8.54	Texhoma	.06
Oregon	do	65	8+	Seneca	-38	1	Valsetz	18.81	2 Stations	.10
Pennsylvania	Donora	65	25	Bradford 1W Res	-13	24	Kregar 4SE	7.97	Holtwood	2.41
Rhode Island	Greenville	57	25	2 Stations	5	22+	Austin	5.88	Greenville	4.03
South Carolina	2 Stations	65	19	Chester 2SW	18	1	Sassafras Mountain	13.43	Georgetown	2.01
South Dakota	Rapid City	65	22	Mellette	-36	17	Custer	.70	2 Stations	T
Tennessee	Savannah	77	17	3 Stations	18	1+	Dover 1NW	13.36	Hampton	6.52
Texas	2 Stations	[illegible]	17	Mount Locke	-2	3	Boxelder	7.62	9 Stations	.00
Utah	St George PH	67	28+	Scofield Dam	-40	2	Silver Lake Brighton	3.66	2 Stations	T
Vermont	Bennington 2NW	53	25	Lemington	-31	4	Mays Mill	6.21	Lemington	.86
Virginia	4 Stations	74	18	Big Meadows	3	22	Pennington Gap	11.68	Luray 5E	2.36
Washington	Prosser	62	28	Lake Kachess	-29	1	Cougar 1E	17.16	Moxee City 10E	.41
West Virginia	3 Stations	68	25+	Spruce Knob	-2	22+	Cabwaylingo St Forest	9.07	Franklin 3NE	2.73
Wisconsin	Lake Geneva	50	29	Danbury 1SE	-31	27	Racine	1.99	Frederic	.00
Wyoming	2 Stations	65	23	Bondurant	-50	1	Snake River	2.92	3 Stations	.00
Puerto Rico	San German	91	25	Garzas Dam	49	29	Rio Blanca 1800 Feet	23.51	Lajas	34

+ And also on a later date or dates

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

Table 2

State and station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	No. of days: Max. 90° F or above	No. of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths sunrise to sunset	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p. h.		M p h			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	992.3	1018.0	63	42	52.3	4.6	75	17+	27	29	0	5	43	74	8.98	3.61	2.03	18	5	0.0	0	9.4	S	50	W	25	1	7	18	7.5	36
Mobile	10	1009.8	1018.1	69	50	59.5	4.5	79	18+	34	12	0	0	52	80	4.30	-.70	1.89	11	2	.0	0	11.5	S				6	5	18	7.2	
Montgomery	198	1010.8	1018.5	67	45	56.2	4.6	82	19	32	7+	0	2	46	78	5.07	.15	1.57	15	3	.0	0	8.6	S	35	SW	25	5	6	18	7.2	47
ARIZONA																																
Flagstaff	6993	---	--	40	13	26.3	-2.5	54	21	-8	17	0	28	-		1.06	.74	.75	4	1	9.8	6						15	9	5	3.9	
Phoenix	1114	977.0	1016.2	64	38	50.9	-3.4	76	22	28	1	0	4	32	42	.64	-.18	.36	6	0	.0	0	4.6	E	*23	WNW	1	17	4	7	3.8	84
Prescott	5014	844.6	1016.1	50	21	35.7	-3.7	68	22	9	3	0	28	-		.09	1.29	.07	2	0	1.0	1	9.8	SSW	65	SW	16	12	10	7	3.9	87
Tucson	2558	925.8	1015.1	63	34	48.7	4.5	79	22	25	3+	0	10	25	46	.54	-.41	.17	6	0	1.0	1	7.0	SE	25	W	24	15	5	9	4.1	88
Winslow	4880	848.6	1016.3	46	17	31.6	-8.2	69	22	-5	10	0	28	15	55	1.02	.53	.70	5	0	9.4	7	9.7	SE	*15	WSW	24	17	5	7	3.9	
Yuma	199	1011.5	1016.6	70	39	54.7	-5.1	80	12+	26	17	1	3	19	30	.10	-.24	.05	2	0	0	0	6.6	NNE	33	N	16	21	6	1	2.1	93
ARKANSAS																																
Fort Smith	458	999.0	1015.9	55	35	45.2	.6	80	24	28	2+	0	13	37	78	5.58	2.43	2.39	10	4	.9	1	8.1	ENE	56	W	25	8	4	17	6.6	43
Little Rock	257	1002.7	1016.2	56	39	47.5	1.9	76	24	28	7	0	3	39	78	11.12	6.81	2.15	15	7	T	0	[illegible]	NNE	42	NW	25	7	4	16	7.1	40
Texarkana	361	--		61	42	51.6	2.1	79	14+	30	7	0	2	--		5.69	1.44	2.11	11	6	0	0										
CALIFORNIA																																
Bakersfield	489	1002.4	1020.6	60	36	47.7	-4.8	68	12+	28	17	0	5	36	67	.65	-.51	.44	6	0	0	0	4.1	NE	*23	NNW	23	12	6	10	4.4	--
Bishop	4108	873.7	1016.6	56	20	37.6	-3.7	67	11+	11	16	0	28	-	-	T	-.94	T	0	0	0	0				-		22	1	5	2.4	
Blue Canyon	5280	837.8	1018.0	40	26	32.7	-3.4	55	3+	9	16	0	24	--	--	9.76	-.07	3.13	10	0	86.9	37	-		--			10	3	16	5.9	
Burbank	699	991.9	1018.5	63	40	51.3	-2.7	72	11	32	17	0	1	34	58	.59	2.58	.56	3	0	0	0	3.3	S	*24	ENE	6+	11	8	7	4.0	
Eureka (L)	43	1018.0	1020.3	51	39	45.0	-3.4	63	8	32	1+	0	2	--	--	7.47	1.62	1.52	14	0	0	0	9.2		44	S	20	5	8	16	7.1	43
Fresno	331	1008.1	1020.5	57	34	45.5	-5.2	65	28	27	16	0	13	37	75	.65	-1.07	.59	5	0	0	0	5.9	NW	18	NW	23	13	11	5	4.4	80
Los Angeles (L)	312		--	62	44	53.1	-3.3	70	10+	38	17	0	0	.	.	.59	2.88	.55	3	0	0	0	6.0	-	31	N	16	19	4	6	3.5	78
Los Angeles	99	1014.9	1018.5	61	44	52.7	-1.4	68	9	37	17	0	0	40	65	.51	-2.34	.46	3	0	.0	0	6.2	W	%39	N	16	16	7	6	3.7	
Mt. Shasta (R)	3544	892.7	1019.3	41	24	32.5	-4.4	56	11	5	1	0	26			9.42	4.02	3.53	10	0	54.8	28	---	--	-			7	6	16	6.4	
Oakland	3	1020.7	1020.9	56	39	47.5	-3.2	63	6+	30	18	0	2	36	68	1.65	-1.86	.64	9	0	.0	0	7.6	SSE	*29	N	16+	11	9	9	5.0	--
Red Bluff	341	1006.8	1019.5	56	36	46.2	-3.7	71	7	28	18	0	7	29	57	1.09	-2.55	.48	6	1	.0	0	13.5	SSE	61	SE	21	8	10	11	5.7	73
Sacramento	17	1019.0	1019.7	57	37	47.1	-2.6	64	6	29	18	0	4	35	68	1.91	-.95	.97	7	0	0	0	10.8	SSE	38	S	22	14	6	9	4.6	75
Sandberg (R)	4517	862.2	1018.0	46	31	38.4	2.4	60	12	16	16	0	17			.26	2.55	.22	4	0	.3	T	--	-		-		15	8	6	4.0	
San Diego	19	1015.6	1018.8	62	45	53.5	-2.8	67	10+	38	17	0	0	40	63	.22	-2.12	.18	4	0	0	0	5.6	NE	29	S	23	15	5	9	4.2	74
San Francisco (L)	52	--	---	58	45	51.4	-1.6	68	7	38	16	0	0			2.03	2.00	.85	10	0	0	0	8.3		30	SW	19	15	6	8	4.3	76
San Francisco	1	1019.6	1020.3	56	40	48.0	-2.8	64	7	32	1	0	1	40	75	3.12	-.43	1.32	10	0	0	0	8.5	WNW	37	NNE	16+	8	12	9	5.2	-
Santa Maria	238	1011.2	1019.9	59	34	46.6	-5.2	66	9+	24	17	0	13	37	73	.66	1.89	.54	5	0	0	0	6.2	WNW	*28	NE	16	16	10	3	3.5	
COLORADO																																
Alamosa	7538	766.3	1018.6	36	4	20.2	-2.8	51	23	-17	2	0	29	-	--	.06	.13	.02	4	0	2.0	1	---	-		-		16	8	5	3.5	--
Colorado Springs	6173	805.6	1017.3	40	14	26.7	-5.1	66	23	2	3	0	29	12	58	.19	.16	.09	4	0	2.1	5	10.6	NNW	*27	NNW	1+	13	8	8	4.7	-
Denver	5292	833.7	1015.7	41	15	27.7	-4.3	62	23	5	2	0	29	12	56	.77	.22	.42	6	0	10.5	5	11.6	SSW	33	W	27	8	11	10	5.3	70
Grand Junction	4849	857.8	1017.4	41	20	30.9	-1.1	55	23	5	2	0	28	17	58	.70	.05	.48	5	0	9.3	4	8.8	ESE	33	NW	26	9	4	16	6.1	58
Pueblo	4639	853.4	1016.9	43	13	27.9	-6.2	67	22	-17	3	0	29	15	64	.21	.29	.18	5	0	5.6	5	7.5	W	41	W	27	9	12	8	4.9	82
CONNECTICUT																																
Bridgeport	7	1016.3	-----	40	27	33.9	4.9	53	25	12	22	0	21		--	3.38	.30	.78	14	0	2.0	1				---		8	7	14	6.4	-
Hartford	169	1009.5	1015.6	38	24	30.7	2.6	52	25	7	22	0	24	21	69	4.01	1.35	.94	17	0	14.5	5	11.1	NW	36	NW	7+	5	9	15	7.1	43
New Haven	6	1015.6	1016.3	40	26	32.9	3.8	50	27	11	22	0	21		-	4.75	1.34	.91	16	0	5.5	2	7.1		29	E	6	7	6	16	7.0	51
DELAWARE																																
ilmington	73	1013.7	1016.9	46	29	37.5	3.8	63	25	17	22+	0	19	29	71	4.21	1.13	1.13	13	0	1.1	1	9.3	NW	-			7	6	16	6.8	
DIST. OF COLUMBIA																																
ashington (U)	72	-	-	49	34	41.4	3.9	68	25	20	22	0	11	-	-	2.94	.22	1.02	11	0	T	T	8.5		38	NW	25		-			
ash Nat'l AP	14	1013.1	1017.6	49	33	41.1	4.0	67	25	20	22	0	12	29	67	2.82	.29	.99	11	0	T	T	10.4	WNW	57	NW	25	6	9	14	6.4	56
FLORIDA																																
palachicola (L)	13	1017.4	1018.6	67	54	60.7	3.8	75	20	42	12	0	0	--	-	3.79	-.30	1.05	9	1	0	0	8.6		33	E	10	13	6	10	5.2	57
aytona Beach	33	1017.9	1019.4	74	51	62.9	2.4	84	16+	35	22	0	0	54	75	.90	-1.61	.22	8	1	0	0	11.2	SSW	*37	WSW	6	9	14	6	5.2	-
ort Myers	15	1018.4	----	79	56	67.6	2.0	84	3+	41	23	0	0	-		1.06	-.95	.91	4	2	0	0	9.2		*38	WNW	11	14	13	2	4.0	
acksonville (L)	18	---	----	74	55	64.3	5.6	84	18	40	29	0	0	-		2.68	-.02	.67	10	-	0	0	..						-			-
acksonville	24	1018.1	1019.2	74	52	63.0	5.5	85	18	38	12+	0	0	52	75	2.94	.18	.76	9	2	0	0	9.8	SW	30	E	1+	11	10	8	4.7	68
ey West (U)	5	1016.9	1017.6	80	69	74.4	2.8	85	28	62	29	0	0	-		1.50	-.19	.74	4	3	0	0	9.2		22	S	11	18	8	3	3.6	79
akeland (U)	22	-	-	76	57	66.7	3.3	84	17+	42	29	0	0			.62	-1.79	.23	6	2	0	0	7.2					8	15	6	5.1	76
iami (L)	8	----	-	75	66	70.4	1.7	85	28	50	29	0	0			.58	-1.21	.38	4	1	0	0	13.7		32	SE	1+	16	7	6	3.5	73
iami	8	1017.4	1018.6	78	64	71.0	2.3	89	28	50	29	0	0	62	76	.91	-.94	.47	4	1	0	0	11.7	SE	27	ESE	2	10	12	7	5.0	
iami Beach	9	--		76	68	72.0	1.8	82	29	55	13	0	0	--	-	1.01	-.81	.75			---		-									
rlando	106	1015.3	1019.8	77	54	65.5	2.3	85	18	40	13+	0	0	55	76	.90	1.23	.39	7	1	0	0	9.7	S	28	WNW	28	6	16	5	5.1	
ensacola (L)	13	1015.6		67	53	60.1	4.1	75	25	39	12+	0	0	--	-	3.90	-.20	1.23	10	3	0	0	11.6	-	26	SE	10				.	49
allahassee	64	1016.1	1018.7	70	49	59.8	4.2	83	18	35	12+	0	0	51	78	5.47	1.29	2.20	12	4	0	0	7.9	SSE				10	6	13	6.1	
ampa	19	1018.0	1019.4	76	56	66.2	3.3	83	3	41	29	0	0	57	78	1.37	1.23	.68	7	2	0	0	10.6	S	*23	S	27+	10	11	8	4.7	73
est Palm Beach	15	1017.6	1018.5	78	62	70.0	2.3	88	28	48	13	0	0	61	77	.51	-1.78	.25	4	0	0	0	13.0	SE	*46	WNW	11	13	10	6	4.8	
GEORGIA																																
thens	798	988.7	1018.2	59	39	48.9	2.3	74	19	29	21+	0	5	41	78	5.66	.52	.96	17	2	0	0	11.0	NE	*40	SSW	25	6	4	19	7.1	
tlanta	975	976.3	1018.7	61	42	51.2	4.5	77	19	30	29	0	3	41	76	6.57	1.57	1.26	17	5	T	T	12.7	NW	47	SW	25+	6	3	20	7.2	36
ugusta	143	1011.3	1018.2	66	41	53.4	2.9	82	19	30	29	0	6	45	77	5.89	2.02	1.77	15	2	0	0	7.6	W	*35	WNW	25	8	4	17	6.9	
olumbus	385	1004.2	1018.6	66	42	54.3	4.7	79	19	27	29	0	5			6.02	1.18	1.47	15	8	0	0			-	-		5	4	20	7.4	
acon	356	1004.5	1018.3	67	43	55.2	3.7	82	19	32	29	0	1	45	73	7.61	3.21	.95	15	8	0	0	10.2	WNW	36	SW	25	7	3	19	6.9	50
ome	637	994.5	--	60	38	48.9	3.9	74	17	25	29	0	10		-	8.19	2.60	1.19	20	5	0	0	---	-				6	4	19	7.5	
avannah	48	1016.0	1019.4	70	47	58.6	4.7	83	19	34	29	0	0	50	79	2.96	.03	1.29	11	2	0	0	10.0	S	35	SW	25	8	4	17	6.2	56
homasville (L)	283	---	---	70	50	60.3	4.4	83	18	36	29	0	0			5.85	2.04	2.62	12	3	0	0	-									
IDAHO																																
oise	2842	921.8	1021.0	36	19	27.4	-6.6	58	22	6	1	0	26	18	69	.91	.48	.37	12	0	7.7	3	11.6	SE	36	SE	21	5	6	18	7.1	57
daho Falls 46W (R)	4933	846.9	1022.0	27	1	12.7	-7.9	50	22	-29	1+	0	29		.	.31	.27	.20	7	0	4.8	6	7.8		a33	WSW	23					
daho Falls 42NW (R)	4790		------	28	5	11.3	7.2	43	22	-35	1	0	29			.03	.40	.08	1	--	--		6.1		a43	S	23					
ewiston	1413	966.1	1019.3	36	20	28.0	-7.9	60	21	10	1	0	26	-		1.44	.40	.81	10	0	14.9	4						2	5	22	7.5	
ocatello	4444	862.2	1021.5	29	11	19.7	-8.8	47	22	-27	1	0	26	13	74	.33	.63	.11	8	0	4.2	6	15.1	SW	40	S	23	4	7	18	7.6	49
ILLINOIS																																
airo (L)	314	1003.4	---	51	36	43.6	3.0	68	24	27	22	0	5		-	6.78	3.34	2.18	12	4	.9	1	10.0		56	SW	25	7	3	19	7.0	36
hicago	610	992.6	1017.5	36	23	29.4	2.0	47	24	10	3+	0	27	22	76	2.26	.79	.52	9	0	13.2	8	9.6	NW	34	N	25	9	5	15	6.6	47
oline	589	995.6	1018.8	36	18	26.9	.3	51	26+	-8	3	0	28	21	78	1.39	.17	.58	9	1	7.5	3	11.0	W	47	NW	25	11	1	17	6.1	49
eoria	654	994.2	1017.4	37	23	29.8	1.5	59	24+	5	3	0	27	23	77	1.11	.87	.39	10	2	5.2	2	11.4		33	NW	25	10	4	15	6.3	45
pringfield	589	993.6	1017.6	40	24	31.9	1.1	68	24	12	3	0	27	26	80	1.73	.05	.33	16	0	7.3	4	11.7	NNW	36	NW	25	7	7	15	6.6	46
INDIANA																																
vansville	383	1000.7	1016.9	48	33	40.5	3.0	66	25	21	22	0	14	33	79	7.25	4.21	2.16	16	7	T	T	10.7	SSW	59	W	25	5	6	18	7.2	38
ort Wayne	801	984.4	1016.6	37	22	29.6	1.6	56	24	5	28	0	28	24	80	3.89	2.06	1.86	12	2	10.2	5	11.6	ENE	43	NW	25	4	10	15	7.2	40
ndianapolis	793	986.1	1017.2	41	26	33.5	2.0	63	24	15	5+	0	25	26	76	3.99	1.83	1.55	13	2	3.8	4	11.5	W	51	SW	25	5	7	17	7.4	41
outh Bend	768	988.5	1016.9	34	20	27.2	.8	53	24	4	3	0	29	22	81	2.67	1.05	.60	14	1	13.4	6	10.5	WNW	*34	NW	25	4	9	16	7.1	--

See footnotes at end of table.

CLIMATOLOGICAL DATA

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In.	In.	In			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
IOWA																																
Burlington	694	991.2	1018.1	36	19	27.6	0.4	54	29	7	3	0	28	21	77	1.50	0.04	0.52	11	2	10.2	4	9.9	NNW	40	W	25	9	4	16	6.1	63
Des Moines	948	985.4	1018.1	35	16	25.6	-.4	60	29	5	3	0	29	19	79	46	.67	.26	5	2	6.1	4	9.8	NW	38	N	24	12	3	14	5.7	65
Dubuque	1065	991.9	1018.1	31	13	22.2	.4	47	29	3	3	0	29	16	74	91	-.24	.36	7	1	7.1	8	----	---	--	---	--	8	8	13	6.0	--
Sioux City	1094	974.9	1018.2	32	11	21.6	1.6	55	29	-12	2	0	29	14	72	.27	-.51	.21	6	0	3.5	8	11.3	NNW	37	N	24	8	11	10	5.7	63
Waterloo	870	--- --	--- -	31	11	20.8	-1.7	51	29	-11	3	0	29	--	--	.09	-.96	.05	4	0	1.6	3	10.7	---	--	---	--	--	--	--	---	--
KANSAS																																
Concordia (U)	1375	965.5	------	38	21	29.6	-3.3	63	29	-3	3	0	27	--	75	.26	-.63	.02	5	0	2.6	6	7.2	---	25	N	24	10	4	15	6.0	59
Dodge City	2594	925.5	1016.3	41	21	31.0	-4.0	73	24	1	3	0	29	21	75	.34	-.47	.38	3	0	3.5	9	13.7	N	47	N	24	9	8	12	5.9	59
Goodland	3645	885.5	1016.1	41	15	27.8	-2.4	64	29	-6	3	0	29	18	73	.43	-.07	26	4	0	4.0	5	10.6	NW	*46	NNW	28	12	5	12	5.3	--
Topeka	879	980.4	1017.4	44	22	32.9	.5	70	29	6	3	0	28	23	71	.70	-.31	.33	7	0	6.3	6	10.9	N	37	N	24	9	8	12	5.9	55
Wichita	1321	965.8	1015.9	47	24	35.5	-1.7	79	24	4	3	0	27	26	73	.45	-.57	.22	4	0	3.2	4	12.3	NNW	40	N	24	9	7	13	5.9	62
KENTUCKY																																
Lexington	979	980.4	1017.0	49	32	40.6	6.1	64	25	17	22	0	14	34	80	7.06	3.43	1.84	18	4	.3	T	11.9	SW	--	---	--	6	3	20	7.7	--
Louisville	474	997.0	1016.6	49	34	41.3	4.1	65	24+	20	22	0	8	34	77	8.34	5.23	2.19	16	6	1.2	1	10.9	NE	59	W	25	7	3	19	7.4	41
LOUISIANA																																
Baton Rouge	64	1014.2	1017.3	68	50	59.0	3.4	80	19	36	29	0	0	51	76	7.90	3.38	2.06	15	6	.0	0	10.6	SSE	--	---	--	4	5	20	7.6	--
Lake Charles	12	1015.2	1016.9	68	51	59.5	3.6	83	27	39	6	0	0	50	77	4.56	-.14	1.86	10	7	.0	0	9.8	S	*29	NNW	8	5	5	19	7.1	--
New Orleans (U)	9	1015.2	------	70	54	61.9	3.4	80	18+	42	11+	0	0	--	--	9.32	4.98	5.70	10	5	.0	0	7.8	---	22	NE	8+	6	9	14	6.6	44
New Orleans	3	1015.2	1017.3	70	53	61.2	3.8	81	18+	37	12	0	0	54	79	7.27	3.15	3.32	13	6	.0	0	10.3	S	*25	SSE	14	5	7	17	7.0	--
Shreveport	252	1006.4	1015.8	65	45	54.5	2.8	83	16	31	11	0	2	44	71	4.58	.67	1.78	8	6	.0	0	11.6	S	--	---	--	6	5	18	6.9	46
MAINE																																
Caribou	624	987.4	1012.6	24	3	13.3	3.5	37	15	-14	1	0	29	5	68	1.93	.14	.63	14	0	20.5	22	10.9	WSW	*48	WSW	26	5	10	14	6.5	55
Portland	61	1010.4	1014.7	35	15	24.6	3.1	46	25	-9	4	0	29	17	71	3.87	-.09	1.03	15	0	35.3	17	8.1	W	36	SW	26	9	6	14	6.5	60
MARYLAND																																
Baltimore (U)	14	------	- ---	49	34	41.3	4.0	68	25	20	22	0	13	--	--	3.98	.89	85	11	--	----	--	----	---	--	---	--	--	--	--	---	--
Baltimore	146	1012.6	1017.5	48	30	38.7	3.7	67	25	17	1+	0	17	29	71	3.38	29	86	11	0	.4	T	10.9	NW	68	W	25	7	8	14	6.4	53
Frederick	294	------	- ----	45	27	36.2	2.1	64	25	14	24	0	22	--		4.20	1.52	1.16	13	0	2.0	1	----	---	--	---	--	--	--	--	---	--
MASSACHUSETTS																																
Blue Hill Obs. (R)	629	990.3	1014.5	37	22	29.0	3.3	49	25+	2	22	0	27	--	72	5.53	1.99	1.13	12	0	20.4	8	16.1	WNW	52	WNW	25	9	8	12	6.3	46
Boston	15	1009.7	1014.7	39	26	32.5	3.3	53	25	9	22	0	20	23	68	4.36	1.33	4.36	14	0	14.5	7	16.7	WNW	*58	WSW	25	7	8	14	6.7	60
Nantucket	43	1014.5	1015.3	39	28	33.6	2.5	50	25	14	22	0	21	27	78	6.03	2.48	1.59	14	0	.4	T	15.0	WNW	43	SE	7	7	5	17	6.8	49
Pittsfield	1153	------	-----	33	17	24.5	2.8	49	25	-6	4	0	29	--	--	3.32	.73	.74	16	0	26.1	12	----	---	--	---	--	--	--	--	---	--
MICHIGAN																																
Alpena (U)	587	992.6	------	31	15	22.8	2.9	40	7+	2	4	0	29	--	-	1.47	-.04	.41	11	0	14.2	9	10.2	---	36	SE	17	8	8	13	6.3	51
Detroit	619	989.2	1016.9	35	21	28.1	1.4	50	25	10	1	0	29	22	77	2.29	19	.66	13	1	10.6	7	10.0	WNW	45	W	25	5	9	15	7.0	44
Detroit (Willow Run)	722	986.8	1016.3	36	20	28.0	1.9	49	14+	8	1	0	29	21	77	2.20	.39	.65	11	1	10.9	5	11.6	WNW	*40	WNW	25	4	10	15	6.9	--
East Lansing (U)	856	------	-- ---	34	18	26.1	1.9	47	14	10	1+	0	29	--	--	2.84	.96	.99	14	0	17.6	8	5.2	---	20	W	25	--	--	--	---	46
Escanaba (U)	594	992.9	------	28	10	19.3	1.7	38	8	0	27	0	29	--	--	.53	-.88	.33	6	0	4.1	14	9.3	---	28	NW	25	10	7	12	5.7	63
Flint	761	987.8	1016.8	32	14	23.2	.7	44	14	-3	3	0	29	18	79	2.06	.55	.42	14	1	15.5	6	9.3	WNW	*39	W	25	5	8	16	6.8	--
Grand Rapids	681	990.5	1016.9	32	17	24.5	.7	40	24	-3	23	0	29	20	82	2.08	.35	.46	13	0	22.9	8	9.0	WNW	35	W	25	5	9	15	6.9	50
Marquette (U)	677	987.5	-----	29	16	22.4	3.5	43	7	7	26+	0	29	--	70	.31	-1.47	.09	10	0	6.2	17	8.2	---	32	SW	6	6	9	14	6.7	55
Muskegon	627	993.2	1017.3	32	19	25.4	.9	39	24	2	23	0	29	20	78	1.35	-.35	.31	13	0	17.1	6	----	---	--	---	--	5	8	16	7.2	--
Sault Ste. Marie	721	992.2	1016.4	26	10	18.3	4.8	38	7	5	3	0	29	14	83	.85	-.72	.18	15	0	11.7	24	8.8	WNW	*34	WNW	25	2	11	16	7.4	41
MINNESOTA																																
Duluth	1409	975.3	1016.9	23	-1	11.0	.0	39	6	-16	15	0	29	4	70	.46	-.80	.34	6	0	8.4	30	12.0	WNW	34	W	25	13	6	10	4.9	67
Intern'l Falls	1179	973.2	1017.1	20	-9	5.5	-1.7	36	29	-26	19+	0	29	-2	67	.58	-.32	.30	8	0	9.1	22	11.4	SW	--	---	--	11	6	12	5.3	--
Minneapolis	830	983.7	1019.2	25	5	15.0	-3.2	39	29	-7	3+	0	29	8	75	.20	-.73	.09	5	0	2.4	12	9.3	SW	28	S	23	13	7	9	4.8	59
Rochester	1017	979.3	1018.8	24	2	13.1	-4.9	39	29	-16	3	0	29	9	79	.52	-.27	.24	6	1	5.7	12	7.3	WNW	--	---	--	12	6	11	5.3	--
St. Cloud	1034	978.0	1018.4	23	-3	9.8	-3.8	37	10	-19	18	0	29	4	76	.22	-.53	.12	5	0	4.9	17	5.7	WNW	--	---	--	16	5	8	4.2	--
MISSISSIPPI																																
Jackson	305	1004.7	1016.9	65	44	54.6	3.6	80	17+	29	7	0	2	46	78	7.44	2.16	2.39	16	9	.0	0	9.6	S	36	NW	8	5	6	18	7.2	38
Meridian	294	1002.5	------	66	43	54.9	4.2	80	19	28	29	0	5	--	-	8.00	2.41	2.64	15	7	.0	0	----	---	--	---	--	6	5	18	6.9	--
Vicksburg (U)	234	990.3	-----	64	47	55.6	3.5	79	27	35	7	0	0	--	--	9.14	3.81	3.23	11	4	.0	0	10.3	---	34	E	8	6	7	16	6.8	47
MISSOURI																																
Columbia	778	987.1	1016.7	43	25	34.4	7	73	24	9	3	0	25	26	75	1.28	-.35	.48	10	0	7.4	6	9.8	E	33	NW	25	6	5	18	7.0	41
Kansas City	741	982.1	1017.3	43	26	34.5	.1	69	29	4	3	0	25	24	70	1.35	.14	.74	7	0	8.4	6	10.0	NE	32	N	24	9	7	13	6.0	54
St. Joseph	809	------	-- --	42	21	31.1	-.7	66	29	-6	3	0	29	--	-	.85	-.20	.31	9	0	8.0	4	10.3	---	*27	NNW	25	10	7	12	5.6	--
St. Louis (U)	465	995.9	- ----	45	31	38.0	1.3	74	24	23	4	0	19	--	--	3.51	1.54	1.11	17	4	7.6	5	10.5	---	61	NW	25	7	4	18	6.8	45
St. Louis	552	995.9	1016.9	44	30	36.9	1.2	75	24	22	3+	0	23	27	72	3.69	1.96	.94	12	4	8.1	6	10.0	NW	--	---	--	6	7	16	7.0	--
Springfield	1265	967.2	1015.8	47	29	38.0	1.2	79	24	19	2	0	25	31	79	1.88	.05	1.00	12	3	2.5	1	13.0	S	50	S	24	7	4	18	6.9	47
MONTANA																																
Billings	3568	886.9	1015.0	35	15	25.0	-1.1	55	22+	-22	16	0	27	12	58	.43	-.03	.17	4	0	7.4	4	13.8	SW	42	NW	23	5	15	9	6.0	74
Butte	5530	824.2	1019.2	28	1	14.2	-4.6	44	21+	-36	16	0	29	7	--	.03	-.52	.02	2	0	2.1	10	7.6	SSW	*32	WSW	23	3	7	19	7.6	--
Glasgow (U)	2277	938.0	1016.4	21	1	9.9	-4.6	43	29	-33	16	0	29	5	82	.49	13	.22	7	0	5.3	7	8.3	ESE	*32	NW	12	8	9	12	6.0	--
Great Falls	3664	883.2	1013.8	32	15	23.5	1.1	54	21	-23	15+	0	28	11	59	.37	-.23	.20	5	0	3.0	2	21.2	SW	49	SW	4	3	12	14	6.9	65
Havre	2488	922.8	1015.9	27	3	15.3	3.6	45	28+	-32	16	0	29	8	69	.13	-.27	.05	7	0	3.3	4	8.9	---	29	SW	8	7	10	12	6.2	60
Helena	3893	869.6	1017.9	30	8	18.6	4.8	49	21	-31	1	0	28	8	64	.09	-.34	.06	3	0	1.9	5	8.5	W	42	W	12	3	9	17	7.5	57
Kalispell	2965	--- --	- - --	29	11	20.0	-5.0	47	21	-25	16	0	29	--	--	1.27	.32	.49	14	0	16.1	24	----	---	--	---	--	1	6	22	8.4	--
Miles City	2629	928.5	1016.4	31	5	17.7	2.4	45	29	-25	16	0	29	13	—	.13	-.23	.12	2	0	1.1	7	9.8	NW	*37	WNW	12	7	15	7	5.1	--
Missoula	3200	900.1	1018.9	30	11	20.4	-5.3	49	21	-22	1	0	28	14	73	.95	.10	.34	17	0	15.6	9	6.7	E	34	W	12	3	3	23	8.4	42
NEBRASKA																																
Grand Island	1841	948.5	1017.3	35	15	24.9	-2.8	62	29	-8	2	0	29	19	78	.23	-.45	.09	5	0	2.1	5	11.5	W	--	---	--	10	8	11	5.6	--
Lincoln (U)	1166	-- -	-- --	37	18	27.4	1.9	61	29	-1	3	0	28	--	-	.38	-.58	.35	7	0	3.6	8	8.9	---	31	NE	26	12	6	11	4.9	69
Norfolk	1544	960.4	1018.6	31	9	20.1	-3.5	54	29	-13	2	0	29	15	77	.40	-.42	.27	5	0	5.2	8	----	---	--	---	--	10	6	13	5.8	--
North Omaha	1323	967.5	-----	33	14	23.6	--	58	29	-6	2	0	29	--	--	.33	----	.39	4	0	3.5	8	----	---	--	---	--	--	--	--	---	--
North Platte	2779	914.7	1016.8	38	13	25.3	3.4	61	29	-13	2	0	29	17	74	.22	-.14	.11	6	0	3.0	3	9.1	WNW	30	N	24+	9	7	13	5.8	59
Omaha	978	976.3	1018.1	36	16	26.1	-1.1	60	29	-6	3	0	29	18	71	.32	-.59	.38	4	0	3.2	7	10.8	N	28	N	27	11	8	10	5.2	64
Scottsbluff	3950	875.7	1016.2	40	11	25.6	-2.6	64	23	-10	1+	0	29	15	67	.25	-.18	.18	3	0	6.1	3	10.3	WNW	--	---	--	8	12	9	5.7	--
Valentine (U)	2587	921.1	------	32	7	19.3	-6.4	50	29	-19	2	0	29	--	--	.21	-.28	.07	7	0	4.6	5	8.9	---	29	NW	16	8	10	11	5.8	71
NEVADA																																
Elko	5075	844.9	1021.5	33	8	20.5	-7.9	49	21	22	1	0	28	11	66	.48	-.50	.34	8	0	11.1	8	5.7	WSW	*25	S	19+	8	6	15	6.3	--
Ely	6257	806.6	1019.9	34	5	19.5	-8.6	46	21+	-18	1	0	29	10	61	.94	.00	.60	8	0	18.8	10	12.8	---	40	S	20	11	8	10	5.0	74
Las Vegas	2162	949.9	1015.9	59	32	45.6	-4.8	71	22	21	17	0	17	10	25	.00	-.60	.00	0	0	.0	0	10.9	SW	*44	NW	26	17	8	4	3.1	92
Reno	4397	862.9	1020.3	40	15	27.6	-8.7	54	21	-9	2	0	27	16	63	.53	-.55	.34	6	0	3.4	3	7.7	SSW	52	SSW	22	13	12	4	4.2	95
Winnemucca	4299	868.6	1020.5	41	17	28.8	-5.7	57	21+	-4	18	0	26	17	63	.27	.77	.23	3	0	2.9	2	8.8	---	38	W	21	9	8	12	5.7	59
NEW HAMPSHIRE																																
Concord	339	1003.5	1014.8	34	16	25.3	4.1	46	8	-15	4	0	29	17	71	2.70	.31	.98	14	0	23.8	15	6.3	NW	31	W	25	5	9	15	6.7	50
Mt. Washington	6262	795.5	------	14	-2	6.0	.5	36	25	-20	22	0	29	--	88	4.19	-.56	1.15	20	1	36.3	29	46.5	W	%131	W	26	0	5	24	8.6	26

See footnotes at end of table

Table 2—Continued

State and station	Elevation (ground)	Pressure: Station ø	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min. 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p h		M p h			0–3	4–7	8–10	0–10	%
NEW JERSEY																																
Atlantic City (U)	8	1014.5	------	45	33	39.2	3.8	55	10+	15	22	0	9	--	--	3.68	0.24	0.81	12	0	0.6	1	15.6		49	SW	25	7	5	17	6.8	46
Newark	11	1015.4	1016.5	43	29	36.0	4.3	61	25	14	22	0	19	26	69	1.47	1.26	1.24	12	0	2.4	2	11.0	WNW	•40	W	25	7	5	17	6.9	--
Trenton (U)	56	1008.5	1015.5	43	31	37.0	4.3	61	25	15	22	0	16	--	-	4.81	2.06	1.26	11	0	2.0	1	9.8	---	13	W	25	7	9	13	6.7	46
NEW MEXICO																																
Albuquerque	5310	845.9	1014.5	48	24	36.0	-3.5	66	23	7	3	0	27	16	48	.19	.11	.37	3	0	4.5	2	9.6	SE	65	W	24	14	7	8	4.0	60
Clayton	4969	840.5	1013.8	49	18	33.8	-2.8	76	23	2	1+	0	28	-	--	.12	.27	.06	2	0	1.1	1						14	4	11	4.9	--
Raton	6379	799.5	1012.9	45	15	30.1	-1.9	65	22	3	9	0	29		-	.19	.20	.17	3	0	2.0	3			-			15	9	5	3.7	--
Roswell	3612	891.3	1015.2	53	22	37.4	-7.4	81	23	3	6	0	25	20	57	1.42	.94	.60	6	0	15.8	4	10.0		61	SW	24	14	5	10	4.8	
NEW YORK																																
Albany	277	1012.3	1015.9	34	18	26.1	3.2	51	25	-7	4	0	28	19	75	3.30	1.20	.78	13	0	21.0	8	8.2	WNW	43	NW	25	2	10	17	6.3	45
Binghamton	1601	953.8	1015.1	32	18	25.0	3.4	49	25	0	22	0	29	20	80	3.87	1.48	.81	20	0	25.3	9	14.1	NW	66	NW	25	0	8	21	8.6	36
Buffalo	693	987.3	1016.3	34	22	28.3	3.6	54	25	9	22	0	28	22	77	3.33	.65	.93	22	1	14.3	4	14.3	SW	49	W	25	1	3	25	8.8	39
New York (U)	10	1004.1	------	43	31	36.8	4.1	59	25	15	22	0	16		-	4.65	1.41	1.13	15	0	2.2	2	13.2		58	W	25	7	8	14	6.3	51
New York	19	1014.7	1016.4	43	31	37.1	4.5	60	25	15	22	0	15	25	66	4.84	1.69	1.24	15	0	2.4	1	15.1	WNW	57	W	25	7	5	17	6.9	-
Rochester	543	996.1	1016.1	33	21	26.9	2.9	50	25	0	4	0	27	23	83	3.23	.72	.90	20	1	24.7	10	13.7	WSW	66	W	25	1	7	21	8.5	36
Schenectady	217	------	------	36	21	28.2	6.3	52	25	2	4	0	25	-	--	3.64	1.34	.84	15	0	22.6	11	-	-				16	4	9	4.9	
Syracuse	424	994.2	1017.2	34	20	27.0	1.9	55	25	-3	4	0	27	21	77	3.90	1.29	.99	23	0	31.6	12	9.7	WSW	57	W	25	1	3	25	8.7	35
NORTH CAROLINA																																
Asheville (U)	2203	------	------	54	36	44.7	3.9	65	19	25	22	0	12			4.87	1.91	1.16	19	3	2	T	10.4		31	NW	25	5	5	19	7.1	44
Charlotte	727	989.7	1018.4	58	38	47.9	3.5	75	18	28	23	0	7	36	75	5.85	2.16	.95	17	3	T	T	9.2	SSW	40	W	16	8	4	17	6.8	42
Greensboro	891	986.0	1018.7	53	34	43.5	2.5	70	18	21	1	0	13	34	71	5.32	2.07	1.60	17	1	T	0	10.0	SW	51	W	25	9	4	16	6.7	49
Hatteras (R)	4	1017.6	1018.2	57	44	50.6	3.0	65	9+	33	24	0	0	44	78	6.48	2.32	1.74	12	1	.0	0	13.8	S	54	SW	28	9	4	16	6.3	54
Raleigh	433	1004.1	1018.0	56	36	45.9	2.8	73	18	24	29	0	8	36	71	4.70	1.33	.88	15	3	.0	0	9.6	NW	•25	NW	25	9	4	16	6.6	51
Wilmington	30	1017.5	------	63	42	52.8	4.1	78	18	29	23	0	4	-		4.36	.94	1.23	13	2	.0	0	11.6	-	66	SW	25	11	7	11	6.1	62
Winston-Salem	967	982.4	1018.3	53	35	44.2	3.0	69	18	23	1	0	12	34	71	5.93	2.42	1.57	18	1	T	0	9.4	SW	•46	WSW	25	9	4	16	6.6	--
NORTH DAKOTA																																
Bismarck	1650	953.9	1017.8	21	-3	9.1	3.6	40	29	-28	17	0	29	5	79	.18	-.27	.16	3	0	2.5	9	10.3	WNW	42	NW	11	5	14	10	6.3	59
Devils Lake (U)	1471	960.4	------	15	6	4.9	3.8	37	29	-26	17	0	29		--	.54	.11	.36	6	0	5.7	21	7.7		27	W	13	9	8	12	5.8	70
Fargo	895	982.1	1018.9	16	-4	5.8	5.0	34	7	-26	21	0	29	-1	74	.18	-.51	.13	3	0	1.8	7	12.4	S	56	SE	23	13	4	12	5.3	66
Williston (U)	1877	944.8	1015.8	23	3	12.6	-.9	48	29	-21	16	0	29	5	70	.10	-.38	.06	3	0	1.2	4	6.9		23	NW	12	8	7	14	6.5	60
OHIO																																
Akron	1210	977.8	1017.6	38	22	30.1	2.0	55	25	6	23	0	28	24	79	5.24	3.04	2.35	16	1	5.5	3	13.0	NW		-	--	1	9	19	8.0	--
Cincinnati Obs.	761	------	------	46	30	38.4	3.6	64	25	19	22	0	17	-	-	5.57	2.94	1.24	16	2	.6	T	---	-	36	W	25	--	--	-	---	40
Cincinnati	869	983.8	1016.5	46	30	37.6	3.7	63	25	18	22	0	22	29	75	5.92	3.29	1.42	17	3	.4	T	10.7	WSW	•46	W	25	4	5	20	8.0	-
Cleveland	787	987.8	1016.6	38	24	31.3	2.7	57	25	8	1	0	28	25	78	3.23	1.03	.92	21	1	8.9	8	14.4	WNW	65	W	25	2	7	20	7.7	31
Columbus (U)	724	------	------	43	29	35.8	3.2	60	25	15	28	0	18	--	--	3.70	1.47	.50	14	1	.8	1	----	--	-	---	-	--	--			--
Columbus	815	986.2	1017.1	43	28	35.6	4.4	60	25	14	22	0	20	29	78	4.33	1.98	.85	14	1	.8	T	11.7	NW	57	W	25	4	3	22	8.1	37
Dayton	1002	979.4	1016.8	41	26	33.9	2.5	61	25	13	28	0	26	27	76	2.96	.78	.69	14	1	2.0	1	12.7	NW	56	NW	25	3	5	21	8.2	39
Sandusky (U)	603	993.3	------	37	25	31.1	1.7	54	25	11	1	0	26	--	--	2.76	.77	1.26	14	1	6.5	5	8.7	-	52	NW	25	6	7	16	7.0	45
Toledo	676	990.5	1016.9	36	21	28.8	---	53	25	6	1	0	29	23	79	2.18	-	.67	11	1	6.2	4	10.5	WSW	40	NW	25	7	7	15	6.8	42
Youngstown	1178	972.9	1016.9	38	22	29.9	1.7	56	25	8	1	0	28	25	83	4.83	2.01	1.51	19	1	10.4	4	10.8	W	•58	W	25	1	8	20	8.1	--
OKLAHOMA																																
Oklahoma City	1280	970.9	1015.6	51	30	40.6	-1.2	81	24	12	2	0	19	30	74	1.31	.02	.40	10	3	6.0	2	14.3	N	56	NW	24	8	8	13	6.0	51
Tulsa	672	990.5	1015.6	53	32	42.2	.2	83	24	14	2	0	16	32	70	1.15	-.48	.62	9	1	1.0	1	11.8	N	48	NW	24	8	6	15	6.1	53
OREGON																																
storia	8	1016.9	1017.5	44	33	38.4	-4.7	49	11+	20	16	0	10	33	82	9.32	-.43	1.34	23	1	.7	T	7.7	ESE	-		--	1	3	25	8.7	--
urns (U)	4140	872.0	1019.3	34	13	23.5	-7.7	49	21	-18	1	0	27	16	69	.74	-.53	.26	9	0	11.0	18	--	---		---	-	3	10	16	7.4	-
ugene	361	1005.8	1020.1	43	31	37.2	-5.5	52	12	16	2+	0	12	--	-	5.29	.29	2.20	17	0	1.1	1	9.3	- -	-	- -	-	0	4	25	8.9	-
eacham	4050	------	------	31	17	23.9	-5.1	46	21	-14	15+	0	29	--	--	3.55	-.96	.99	18	0	40.0	39	- --	--	--	-		2	3	24	8.7	-
edford	1312	971.6	1020.4	46	28	37.3	-5.3	56	9	14	16	0	22	29	77	4.95	2.86	2.96	11	0	11.6	4	4.2	NNW	•23	SSE	19	2	6	21	8.2	-
endleton	1492	963.8	1019.1	36	21	28.4	-8.2	53	28	-11	1	0	20	21	75	.81	-.64	.49	9	0	7.6	6	10.8	SE	•40	WNW	20	2	4	23	8.6	
ortland	21	1013.2	1019.2	41	31	35.9	-5.6	50	11+	16	1	0	12	30	83	3.03	-1.27	1.17	21	0	1.1	1	10.9	ESE	46	S	24	1	4	24	8.9	15
oseburg	505	1000.7	1019.6	47	31	38.6	---	58	8	13	16	0	16	-	--	7.07	3.18	3.24	21	0	1.2	1	4.3	--	24	W	14+	1	4	24	8.7	23
alem	195	1011.5	1019.0	43	31	37.0	-5.8	51	12	15	2	0	13	32	84	5.42	-.07	2.30	19	0	2.1	T	9.4	S		---	-	2	3	24	8.7	--
exton Summit (R)	3836	------	------	37	27	32.0	4.4	55	3+	9	16	0	24	--	--	5.26	1.54	1.69	18	0	57.8	60	-		--	- -		2	4	23	8.3	
PENNSYLVANIA																																
llentown	376	1002.7	1017.2	40	25	32.9	4.3	58	25	12	22	0	25	25	74	4.90	2.17	1.02	14	0	5.7	2	12.1	WNW	-	---	-	5	8	16	7.3	
arrisburg	335	1003.1	1017.2	42	29	35.4	3.3	60	25	17	24	0	19	23	64	3.47	1.15	.97	14	0	4.6	3	8.6	WNW	59	NW	25	4	9	16	7.2	45
hiladelphia (U)	26	------	------	45	32	38.4	3.3	60	25	18	22	0	13	--		4.72	1.59	-	12	-	-		---	---	-	-				--	---	-
hiladelphia	10	1012.3	1016.8	45	30	37.6	4.0	63	25	17	22	0	18	26	69	4.64	1.52	1.39	12	1	1.1	1	10.0	NW	59	NW	25	5	7	17	7.3	46
ittsburgh (U)	749	------	------	44	29	36.9	3.3	62	25	13	22	0	17		-	5.97	3.53	1.53	18		.3	--			-	-			-		--	
Pittsburgh	1151	985.4	1017.6	42	26	34.0	4.2	59	25	11	22+	0	24	27	78	5.98	3.52	1.65	19	1	3.2	1	11.1	WSW	•46	SW	25	3	6	20	8.1	41
eading (U)	266	1003.9	1016.3	43	30	36.7	3.9	61	25	17	22	0	17	-		4.88	2.11	1.13	12	0	3.8	3	11.8	-	56	W	25	3	10	16	7.5	38
cranton	940	981.0	1016.9	37	23	30.0	2.9	53	25	8	22	0	25	22	73	3.64	1.54	.77	18	1	8.6	4	8.8	WSW	60	W	25	2	9	18	8.0	33
hippingport (U)	736	------	------	42	26	34.1	--	61	25	13	22	0	23	--	--	5.72	---	1.68	16	1	T	T	3.9	--	%53	WNW	25	-		-	8.2	-
illiamsport	527	997.4	------	39	24	31.6	2.5	51	25	8	4	0	26	--	-	4.15	1.72	.79	18	0	10.4	4		---	-			3	8	18	7.6	
RHODE ISLAND																																
ock Island	110	------	------	38	29	33.5	2.6	48	25	13	22	0	18		-	4.62	1.26	1.31	13	0	.7	T		--	-			5	8	16	6.9	-
ovidence	55	1009.1	1015.5	39	25	32.3	3.7	53	25	9	22	0	20	22	68	4.60	1.66	.99	15	0	7.3	2	11.1	SW	•37	W	25	8	7	14	6.6	52
SOUTH CAROLINA																																
arleston (U)	9	------	------	65	49	57.1	4.4	76	19	39	23+	0	0		-	2.06	-1.11	.99	11	0	0	0	10.0		31	SW	25+	9	6	14	6.4	65
arleston	41	1017.1	1019.0	68	46	56.8	4.9	83	18+	32	23	0	1	48	77	2.91	-.33	.78	11	0	.0	0	12.1	SSW	-		-	8	6	15	6.3	
lumbia	217	1009.5	1018.0	64	40	52.0	3.5	80	19	29	23+	0	7	44	79	5.45	1.69	1.81	15	4	.0	0	7.8	WSW	35	WNW	25	7	4	18	6.9	52
orence	146	1012.7	------	64	42	53.0	5.4	81	18	29	1	0	4	-	--	5.83	2.40	1.79	14	5	.0	0	-	-				8	5	16	6.6	-
eenville	1018	979.7	1017.7	56	38	47.4	2.1	71	18	29	29	0	5	37	73	9.74	5.32	2.29	20	5	T	T	10.7	NE	45	NW	25	8	3	18	7.0	46
artanburg	801	------	------	57	39	47.7	2.3	72	18	30	1+	0	4		--	8.80	4.42	1.38	18	3	T	T	---	-	•52	WSW	25	--				
SOUTH DAKOTA																																
ron	1282	968.8	1018.8	21	-3	9.1	-8.5	37	29	-29	17	0	29	7	84	.29	-.22	.16	6	0	7.1	14	9.7	SSE	42	S	23	9	10	10	5.9	61
pid City	3165	897.7	1016.0	36	12	24.1	.2	64	23	-12	1	0	29	14	68	.52	.18	.32	6	0	5.7	4	7.0	NNW	45	N	15	7	8	14	6.3	56
oux Falls	1420	964.4	1018.5	25	2	13.6	-5.9	44	29	-21	2	0	29	6	69	.38	.39	.17	8	0	3.9	8	8.7	SW	•31	NNW	24	9	8	12	5.4	-
TENNESSEE																																
istol	1519	961.7	------	54	35	44.5	4.4	68	18	22	22	0	11			7.29	3.76	1.73	20	3	T	T			--	-		2	6	21	8.3	
attanooga	670	989.9	1018.0	58	39	48.7	4.7	73	17	25	29	0	8	40	77	9.48	4.19	2.94	21	6	.0	0	6.9	SSW	57	W	25	4	6	19	7.4	36
oxville	949	981.7	1017.6	56	38	47.3	4.8	71	17+	28	21+	0	6	39	75	8.29	3.38	2.89	20	4	.0	0	8.1	NE	52	SW	25	5	2	22	8.0	32
mphis (U)	271	------	------	55	41	47.9	3.4	73	17	34	3+	0	0		-	9.58	5.22	2.17	18		.0	0	-	-	-	-						
mphis	263	1001.8	1016.8	56	39	47.8	3.3	75	17+	28	7	0	7	40	77	9.39	4.65	2.30	15	6	.0	0	12.2	S	46	S	25	3	7	19	7.7	31
shville	577	996.3	1017.1	56	38	46.9	4.6	70	27	26	22	0	8	40	80	10.31	5.99	2.87	19	6	T	T	10.1	S	47	NW	17	5	4	20	7.4	37
Ridge (R)	905	984.0	------	57	39	47.6	7.2	70	17+	25	1	0	7	--	-	10.47	4.48	2.71	20	3	.0	0	5.0	ENE	-		--	5	3	21	7.7	
TEXAS																																
lene	1759	952.9	1014.9	59	36	47.7	-.4	89	24	17	2	0	10	33	63	1.39	.45	.67	7	2	8.4	4	14.0	S	60	NW	24	7	7	15	6.5	63

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature								No of days				Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F	°F	°F	°F	°F		°F		#		°F	%	In.	In.	In			In.	In.	M p h		M p. h.			0–3	4–7	8–10	0–10	%
TEXAS (Cont'd.)																																
Amarillo	3590	885.9	1014.6	47	23	35.3	4 3	79	23	6	2	0	25	21	66	1.10	0.45	0.85	5	0	14.7	13	14.6	SW	70	NW	24	9	7	13	5.9	67
Austin	615	993.9	1016.1	68	44	55.8	1.7	86	24	24	5	0	5	42	66	1.74	.91	1.44	5	2	T	T	11.1	S	52	NW	17	8	8	13	6.0	53
Brownsville	16	1012.2	1014.8	75	56	65.7	1.7	86	27	34	3	0	0	57	80	1.94	.70	1.62	9	0	.0	0	14.9	SSE	37	SE	17	6	7	16	6.7	47
Corpus Christi	41	1014.2	1015.3	72	53	62.8	2.5	88	27	32	3+	0	2	54	77	.85	-.65	.72	6	0	.0	0	13.4	SSE	34	SE	8	8	4	17	6.6	59
Dallas	487	997.6	1016.5	60	41	50.5	7	84	24	24	2	0	6	40	72	1.92	-.79	.81	9	4	.5	T	9.4	SE	45	NW	17	7	5	17	6.8	46
Del Rio	1091	980.4	1015.1	69	44	56.6	-.5	89	17	23	4	0	7	35	53	.34	-.77	.29	2	1	T	T	10.9	--	47	NW	17	10	6	13	5.8	53
El Paso	3920	884.5	1014.5	58	32	44.9	4.2	77	23	8	4	0	16	21	43	1.06	.69	.87	4	0	8.9	7	14.4	SW	56	W	24	12	8	9	4.7	72
Fort Worth	544	995.6	1016 7	60	40	50.1	.3	86	24	24	5	0	7	38	69	2.54	-.12	1.11	9	6	.7	1	12.2	S	*45	NW	25	7	6	16	6.6	--
Galveston (L)	7	- ----	--- --	64	54	59.1	1.7	80	27	34	4	0	0	-	--	1.87	-1.11	.58	9	--	.0	0	13.8		33	W	10	--	--	-	---	45
Galveston	5	1014.2	1016.5	65	53	58.8	1 5	81	27	34	4	0	0	52	81	2.08	-1.16	.61	10	7	.0	0	17.8	S	--	---	-	6	5	18	6.8	--
Houston (U)	41	1010.8	--- --	68	51	59.6	1.9	81	15	33	3	0	0	--	-	1.80	-1.10	.80	11	2	.0	0	11.5	---	34	S	1	7	4	18	6.5	46
Houston	50	1013.5	1016.5	68	50	59.2	2.6	82	15	33	3+	0	0	51	78	2.42	-.37	.67	12	5	.0	0	13.8	SSE	--	---	--	7	6	16	6.7	--
Laredo	500	999.0	1014.2	76	52	64.0	2.1	95	17	29	5	3	4	48	63	.27	-.62	.11	5	0	.0	0	12.7	SSE	*28	NW	10	11	4	14	5.9	--
Lubbock	3243	900.8	1014.6	52	25	38.5	4.6	81	23	4	6	0	23	25	63	1.59	1.04	.92	6	0	16.8	13	16.6	WSW	*54	WNW	24	9	9	11	5.6	--
Midland	2854	918.4	1014.6	61	32	46.4	2.6	84	23	9	4	0	14	24	50	.16	-.58	.13	3	0	1.5	1	9.9	WSW	*40	WSW	24	9	5	15	5.9	--
Port Arthur	16	1015.2	1016.6	68	50	58.7	2.7	83	27	34	5	0	0	51	78	4.83	.50	1.87	13	7	.0	0	14.3	S	38	SE	8	4	8	17	7.1	42
San Angelo	1903	948.2	1015.2	63	37	49.9	1.8	90	24	17	4	1	10	31	55	.17	-.85	.06	5	0	1.0	T	11.2	SSW	*48	NW	17	7	7	15	6.4	--
San Antonio	792	990.2	1015 4	69	45	57.1	2.0	87	17	25	4	0	6	42	65	.85	-.79	.31	9	0	.0	0	10.1	SSE	32	N	2	10	6	13	5.9	65
Victoria	110	1010.8	1015.5	70	51	60.5	1.6	84	15+	31	3	0	1	50	69	.80	-1.25	.35	5	1	.0	0	14.3	--	%51	SSW	8	8	5	16	6.5	--
Waco	500	994.6	1016.1	63	42	52.5	.8	84	24	25	5	0	7	42	72	1.25	1.48	.63	4	4	.4	T	14.8	S	-	--	--	8	3	18	6.8	--
Wichita Falls	1027	978.0	1015.6	56	34	45.4	4	87	24	18	2	0	13	33	67	1.11	-.43	.48	10	4	4.4	4	11.6	N	*52	NW	24	9	5	15	6.0	--
UTAH																																
Milford	5028	842.9	1019.9	39	10	24.5	-6.4	57	13	-9	17	0	28	-	-	1.04	.30	.40	9	0	13.9	5	- -	--	--	- -	--	8	11	10	5.5	--
Salt Lake City	4220	867.6	1020.6	36	17	26.4	-7.0	57	23	1	2	0	25	18	70	1.10	.18	.39	9	0	18.6	6	9.6	SE	31	S	23	7	6	16	6.4	53
VERMONT																																
Burlington	331	1000.0	1015 4	31	15	23.0	4.9	45	25	-8	4	0	29	14	68	1 78	.20	82	12	0	18.8	11	8.4	S	47	W	25	2	10	17	7.4	55
VIRGINIA																																
Lynchburg	947	982.8	- --	51	33	41.7	2 5	66	18	20	1	0	14	-		3.64	1.08	.93	16	1	.2	T	9.1	---	33	W	25	8	5	16	6.7	46
Norfolk	26	1016.9	1018.2	55	37	45.9	3.9	78	18	25	24	0	7	37	74	5.72	2.55	1.33	16	0	.0	0	11.5	SSW	52	SW	25	9	7	13	6.1	51
Richmond	162	1011.9	1018.2	53	33	43.0	3.3	71	18	18	23	0	11	33	71	3.57	.72	.99	14	1	T	0	8.7	WSW	32	SW	18	7	7	15	6.5	51
Roanoke	1174	974.8	1017.9	51	33	42.0	2.8	66	15	18	1	0	13	31	67	4.87	2.22	.95	16	1	2 4	1	9.8	WNW	-	---	--	6	7	16	7.0	--
WASHINGTON																																
Olympia	190	1009.8	1017.1	41	29	35.0	5 0	50	3	7	1	0	16	29	81	3.93	-2.42	.88	23	0	7.7	3	9.8	SSW	*30	S	28	1	3	25	9.0	--
Seattle (U)	14	------	- ----	42	34	38 2	5.3	49	28	17	15	0	10	--	--	2.16	-1.71	46	20	2	1.9	1	11.3	---	42	SW	24	1	2	26	9.2	22
Seattle	14	1016.0	1016.9	--	--	-- -	---	--	--	-	-			31	78	----	- -	---	--	--	----	-	8.8	SSE	--	--	--	-	-	--	---	--
Seattle-Tacoma	379	1002.7	1017.1	41	31	35 7	-5.2	47	28	13	15+	0	16	31	82	2 17	-1.91	.47	19	0	9.4	4	13.4	SW	*36	SSW	25	2	2	25	9.0	--
Spokane	2357	946.8	1018.0	29	16	22.6	-7.1	41	20+	-12	1	0	29	19	83	1.44	-.07	.48	12	0	13.5	8	9.3	SW	34	SW	24	3	4	22	8.3	26
Stampede Pass (R)	3958	874.7	1017.0	25	16	20.5	6 5	37	8	5	15	0	29	--		9.91	1.55	1.58	24	0	92.2	189	----	---	--	---	--	1	3	25	9.2	--
Tatoosh (R)	101	1011.9	1015.2	42	35	38.4	-4.8	48	7	20	15	0	6	33	82	8.67	-.32	1.46	25	1	10.4	6	16.8	E	51	NW	14	1	2	26	9.3	17
Walla Walla (U)	949	982.7	1020.0	35	22	28.2	-10.1	55	20+	-8	1	0	18	--	--	1.63	.05	.64	13	0	13.4	9	6.6	---	30	W	20	0	5	24	8.9	19
Yakima	1061	978.7	1019.4	33	12	22.8	11.4	51	28	-20	1	0	28	16	73	.81	-.02	.64	3	0	8.0	11	6.3	W	--	--	--	5	6	18	7.5	--
WEST VIRGINIA																																
Charleston	950	980.7	1016 9	51	33	41.8	3.6	65	25	18	1+	0	11	33	72	6.89	3.27	1.15	20	3	1.3	1	8.7	WSW	*30	WSW	25	2	8	19	8.1	--
Elkins	1970	------	-----	48	28	37.8	5.3	64	17	9	1	2	20	26	--	5.21	2.05	1.14	20	0	.3	1	9.8	NW	*38	WNW	25	0	6	23	8.6	--
Huntington (U)	565	-----	- -- -	51	34	42.4	3.4	68	25	18	1+	0	9	--	--	7.58	4.42	1.52	14	--	T	0	- --	---	--	- -	--	-	--	--	---	--
Parkersburg (U)	615	-----	------	48	31	39.5	4.0	65	25	15	22	0	16	--	-	5 53	2.78	1.36	15	1	.1	T	6.5	--	45	NW	25	2	7	20	7.8	30
WISCONSIN																																
Green Bay	689	993.9	1017.7	28	7	17.6	.3	37	24	-10	23	0	29	10	70	.60	-.81	.27	9	0	3.5	3	9.6	W	35	W	25	11	7	11	5.4	61
La Crosse	652	992.2	1018.3	29	6	17.5	-1.8	42	29	-13	3	0	29	11	71	43	-.72	.20	5	1	3.8	8	7.0	NW	*23	ESE	16+	11	6	12	5.4	--
Madison	857	981.0	1017.8	33	12	22.4	.5	42	29	5	3	0	29	15	73	1.00	-.18	.60	7	0	5.4	3	8.2	NW	40	W	25	9	9	11	5.9	58
Milwaukee	672	991.5	1017.4	33	17	25.0	8	40	24	3	22	0	29	17	72	1.43	.11	.62	11	1	9.9	6	12.5	WNW	47	W	25	11	5	13	5.5	55
WYOMING																																
Casper	5322	832.4	1014.6	35	13	24.1	1 8	51	23	-12	1+	0	29	9	54	.45	-.30	.40	3	0	9.9	6	17.2	---	*40	SW	23+	11	9	9	5.0	--
Cheyenne	6131	805.6	1016.3	34	12	22.6	-5.1	55	23	-10	1	0	29	9	56	.46	-.22	.20	7	0	8.1	3	15.3	W	54	W	25	10	11	8	5.1	65
Lander	5563	831.0	1018.3	30	4	16.9	-6.0	46	23	-21	2	0	29	5	61	.44	-.20	.35	3	0	7.9	9	6.1	-	45	SE	13	13	13	3	4.3	83
Sheridan	3942	880.5	1016.9	35	8	21.5	-1.7	57	23	-20	1+	0	29	12	68	41	-.23	.23	5	0	7.3	7	7.2	S	40	SW	25	7	11	11	5.9	49
PACIFIC AREA																																
Canton Island	9	1008.1	1008 3	87	77	81.8	-1.2	88	5+	75	11+	0	0	71	74	.03	.54	.03	1	0	.0	0	----	---	-	---	--	12	12	5	4.8	--
Hilo	31	1012.9	1014.1	76	62	69.4	1.3	84	9	57	3	0	0	64	83	39.32	29.47	10.63	22	4	.0	0	9.2	SW	*29	N	2	4	3	22	8.0	28
Honolulu	7	1013.9	1014.5	78	66	72.1	- 3	82	1+	62	12	0	0	62	75	3.30	.70	1.35	18	3	.0	0	11.7	ENE	54	NE	18	2	14	13	7.1	50
Koror (R)	94	1005 4	1009.2	87	75	81.1	.7	89	21	73	3	0	0	75	81	5.50	-2.77	1.31	15	3	.0	0	---	-	--	---	--	0	10	19	7.9	--
Lihue	115	1009.1	1014.5	77	66	71.5	1 4	82	1	59	1	0	0	64	81	6.89	2.31	3.25	21	3	.0	0	12.0	ENE	30	NE	19	1	12	16	7.6	28
Majuro	10	1007.5	1007.8	85	77	80 9	- -	87	20+	72	7	0	0	73	78	14.75	----	4.26	15	1	.0	0	---	--	--	---	--	2	13	14	7.1	--
Ponape (R)	112	1003.7	1009.2	86	75	80 6	-1 3	89	5+	71	9	0	0	74	81	6.51	-1.64	1.59	22	0	.0	0	----	-	--	---	--	1	7	21	8.1	--
Truk (Moen Is)	8	1008.8	1009.2	85	77	81.2	2	87	1+	72	20	0	0	75	81	8.79	1.45	3.25	17	1	.0	0	----	---	--	---	--	0	7	22	8.7	--
Wake Island	11	1013.5	1014.2	81	71	76.1	-1 2	85	14	65	10	0	0	64	69	.27	-1.29	.11	6	0	.0	0	13.8	ENE	--	--	--	14	13	2	3.7	--
Yap (R)	53	1007.5	1009.5	86	76	81.1	4	89	10	73	11+	0	0	74	80	3.63	-1.47	1.23	14	1	.0	0	----	---	--	---	--	0	0	29	10.0	--
WEST INDIES																																
San Juan, P.R. (U)	47	---	- -- -	79	70	74 5	- 4	81	23	66	26	0	0	-	-	5 97	3.23	2.15	17	0	.0	0	- -	---	--	---	--	--	-	--	---	--
San Juan, P.R.	15	1014 6	1017.0	81	68	74.3	---	84	22+	62	22+	0	0	65	76	6.44	- -	2.15	14	0	.0	0	11.3	ENE	26	NE	25	8	17	4	5.2	6
ALASKA																																
Anchorage	92	1004.4	1009.4	19	1	10.3	-8.3	43	1	-26	11+	0	29	-2	57	2.49	1.89	1.16	16	0	33.1	39	7.4	N	*43	NNE	19	9	4	16	6.5	4
Annette	110	1006.4	1010.4	36	26	30.8	-5.3	45	9	2	14	0	21	24	76	10.19	2.89	2.52	19	0	20.9	6	14.1	SE	*35	SE	2+	4	8	17	7.7	-
Barrow	22	1020.3	1020 9	-22	-33	-27.5	9.6	-1	21	-44	20	0	29	--	--	.06	-.10	.03	3	0	.6	9	8.4	WSW	35	E	21	11	10	8	4.8	-
Bethel	10	1012.2	1013.5	10	-10	-.1	9 2	36	14+	38	29	0	29	-4	80	2.06	1.21	.96	13	0	19.7	33	11.2	NNE	*37	WSW	23	8	5	16	6.6	-
Cold Bay	90	1007.8	1012.1	30	20	25.0	3.4	46	14	1	29	0	23	21	83	3.65	.81	2.49	16	0	3.7	9	15.6	N	*37	WSW	17	2	4	23	8.4	-
Cordova	40	1002 7	1004.7	27	7	17.0	-9 1	39	1	17	13	0	28	--		4 65	.81	1.25	17	0	38.3	45	----	---	--	---	--	8	3	18	6.8	-
Fairbanks	436	998.0	1016.5	-1	-20	-10.6	-7.5	22	3	-50	19+	0	29	18	70	.99	.47	.22	17	0	21.0	38	2.6	W	*14	WNW	26	5	4	20	7.9	-
Juneau	15	1009.5	1010.2	27	16	21.8	-5.5	38	7	11	14	0	24	15	74	4.05	.59	.78	20	0	33.8	17	9.8	ESE	41	E	8	4	1	24	8.4	2
King Salmon	44	1009.5	1011.9	17	-5	6.0	-12.0	39	14+	33	10	0	29	1	75	.99	-.17	.50	10	0	9.0	19	12.1	N	*48	SSE	14	10	3	16	6.1	-
Kotzebue	10	1016.9	1017.4	3	-20	11.5	-6.8	20	3+	-45	29	0	29	-17	74	.39	.06	.10	10	0	14.0	34	12.2	E	*47	E	20	8	6	15	6.2	-
McGrath	334	1002.0	1015.7	3	20	8 3	-8 7	30	25	55	28	0	29	-15	71	2.59	1.40	1.15	14	0	27.0	42	2.9	E	*17	N	7+	9	3	17	6.5	-
Nome	13	1014.9	1015.4	5	-14	4 3	10.0	31	22	-37	28	0	29	-12	68	1.20	.24	.32	11	0	12.1	36	10.3	E	40	NW	25	14	1	14	5.3	5
Northway	1713	947.9	1015.2	6	-24	-15.2	-5.8	9	26	55	21	0	29	--	-	.47	.12	.12	12	0	13.6	44	----	---	--	---	--	5	7	17	7.3	-
St. Paul Island	22	1009.5	1010.6	25	15	19.7	-4.1	37	21	9	9	0	28	18	89	.82	-.35	.26	16	0	3.9	2	----	---	--	---	--	3	2	24	8.6	-
Yakutat	28	1004.7	1005.8	30	17	23.4	-4.6	38	1+	-8	21	0	27	20	85	9.01	.10	1.55	20	0	57.0	64	11.1	E	*41	ESE	7	3	3	23	8.6	-

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites

* Data entered in column "Fastest Mile" is the fastest mile observed This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates

% Peak gust

a Maximum hourly average

ø Station pressures apply to elevations shown in Table 10b of the annual issue of this publication.

# Number of days maximum 70° or above for Alaskan stations

HEATING DEGREE DAYS

(Base 65°F.)

Table 3

FEBRUARY 1956

State and station	Current season: This month	Current season: Period July through this month	Normals July through this month
ALABAMA			
Birmingham	366	2327	2244
Mobile	191	1402	1343
Montgomery	268	1890	1769
ARIZONA			
Flagstaff	1114	4734	5212
Phoenix (U)	365	967	1255
Phoenix	402	1133	1428
Prescott	841	2961	3358
Tucson	468	1222	1453
Winslow	958	3171	3610
Yuma	292	868	849
ARKANSAS			
Ft. Smith	576	2839	2619
Little Rock	506	2551	2441
Texarkana	393	2138	1954
CALIFORNIA			
Bakersfield	494	1661	1730
Bishop	788	3219	3179
Blue Canyon	931	4034	3708
Burbank	392	1284	1284
Eureka (U)	573	3289	3050
Fresno	558	2010	2040
Los Angeles (U)	338	1096	1023
Los Angeles	351	1224	1380
Mt. Shasta (R)	936	4235	4111
Oakland	504	2311	2190
Red Bluff	538	2054	1982
Sacramento (U)	486	1869	1997
Sacramento	515	2005	2142
Sandberg (R)	764	2802	2862
San Diego	327	1062	1060
San Francisco (U)	390	2289	2045
San Francisco	486	2316	2288
San Jose	459	1760	1690
Santa Maria	530	2311	1936
COLORADO			
Alamosa	1293	5847	6288
Colorado Springs	1107	4453	4443
Denver	1072	4260	4413
Grand Junction	982	3952	4488
Pueblo	1070	4225	4248
CONNECTICUT			
Bridgeport	896	4039	4177
Hartford	986	4600	4508
New Haven	927	4253	4281
DELAWARE			
Wilmington	790	3808	3700
DIST. OF COLUMBIA			
Washington (U)	677	3309	3258
Washington	685	3365	3304
FLORIDA			
Apalachicola (U)	141	1106	1090
Daytona Beach	128	810	720
Fort Myers	38	363	345
Jacksonville (U)	94	970	945
Jacksonville	127	1091	1051
ey West (U)	0	29	70
iami (U)	15	184	158
iami	9	165	166
iami Beach	3	114	114
rlando	80	610	558
ensacola (U)	162	1248	1187
allahassee	179	1361	1278
ampa	56	577	572
est Palm Beach	21	240	215
GEORGIA			
thens	463	2487	2253
tlanta	396	2355	2269
ugusta	335	2162	1768
olumbus	312	2024	1951
acon	288	1886	1712
ome	461	2725	2516
avannah	205	1650	1429
IDAHO			
oise	1085	4441	4377
ewiston	1066	4631	4122
ocatello	1308	5146	5082
ILLINOIS			
airo (U)	614	3163	3004
hicago (U)	984	4319	
hicago	1025	4560	4648
icago University	1008	4488	
oline	1096	5001	4805
eoria	1014	4662	4591
pringfield	953	4429	4317
INDIANA			
ansville	703	3662	3424
. Wayne	1020	4692	4618
dianapolis	906	4360	4201
uth Bend	1090	4819	4775
IOWA			
rlington	1077	4909	4601
s Moines	1137	5298	4894
buque	1235	5612	5402
okuk (U)	970	4376	
IOWA (Cont'd.)			
Sioux City	1251	5699	5326
KANSAS			
Concordia (U)	1019	4531	4091
Dodge City	976	4026	3867
Goodland	1074	4665	4650
Topeka (U)	898	4167	3830
Topeka	925	4271	4037
Wichita	848	3853	3564
KENTUCKY			
Lexington	703	3666	3746
Louisville	680	3485	3444
Pikeville (U)	538	3082	
LOUISIANA			
Baton Rouge	215	1314	1332
Lake Charles	197	1148	1293
New Orleans (U)	148	1046	993
New Orleans	170	1155	1096
Shreveport	319	1811	1784
MAINE			
Caribou	1492	6692	7209
Greenville (U)	1376	6421	
Portland	1166	5430	5438
MARYLAND			
Baltimore (U)	679	3331	3193
Baltimore	758	3696	3613
Frederick	829	4091	3707
MASSACHUSETTS			
Blue Hill Obs.	1043	4887	
Boston	936	4256	4130
Nantucket	902	4095	4047
Pittsfield	1165	5568	5503
MICHIGAN			
Alpena (U)	1220	5475	5583
Detroit	1061	4613	4608
Detroit (Willow Run)	1067	4737	4703
East Lansing (U)	1122	4922	
Escanaba (U)	1318	5887	6013
Grand Rapids	1166	5016	5081
Marquette (U)	1229	5723	5893
Muskegon	1141	4947	4970
S. Ste. Marie	1348	6269	6604
MINNESOTA			
Duluth (U)	1530	7050	6834
Duluth	1560	7225	7112
Internat. Falls	1723	7923	7763
Minneapolis	1444	6424	5867
Rochester	1499	6553	6032
St. Cloud	1594	7151	6612
MISSISSIPPI			
Jackson	314	1986	1822
Meridian	304	2027	1930
Vicksburg (U)	289	1789	1656
MISSOURI			
Columbia	882	4046	3940
Kansas City	877	3980	3811
St. Joseph	978	4528	4153
St. Louis (U)	776	3649	3478
St. Louis	811	3822	3642
Springfield	775	3752	3632
MONTANA			
Billings	1155	5644	5161
Glasgow (U)	1594	7486	6549
Great Falls	1198	6083	5401
Havre (U)	1436	7148	6102
Helena	1344	6583	5983
Kalispell	1299	6452	5840
Miles City	1365	6580	5841
Missoula	1286	6222	5784
NEBRASKA			
Grand Island	1159	5302	4805
Lincoln (U)	1083	4865	4490
Norfolk	1293	5856	5320
North Platte	1147	5441	4868
Omaha	1121	5093	4733
Scottsbluff	1136	5151	4955
Valentine (U)	1318	5935	5191
NEVADA			
Elko	1290	5420	5266
Ely	1312	5319	5265
Las Vegas	553	1937	2045
Reno	1077	4392	4278
Tonopah	973	4014	4183
Winnemucca	1047	4668	4619
NEW HAMPSHIRE			
Concord	1144	5398	5525
Mt. Washington Obs.	1706	9261	
NEW JERSEY			
Atlantic City (U)	741	3456	3331
Newark	833	3838	3883
Trenton (U)	806	3808	3760
NEW MEXICO			
Albuquerque	836	3066	3441
NEW MEXICO (Cont'd.)			
Clayton	898	3629	3781
Roswell	[illegible]	2824	2768
NEW YORK			
Albany	1123	5173	5080
Binghamton	1152	5442	5408
Buffalo	1061	4794	4823
New York (U)	814	3717	3670
New York	805	3612	3631
Rochester	1101	4995	4913
Schenectady	1062	4859	
Syracuse	1095	5013	4711
NORTH CAROLINA			
Asheville (U)	584	3254	3105
Asheville	614	3484	
Charlotte	490	2573	2555
Greensboro	617	3167	2991
Hatteras (R)	412	2170	1802
Raleigh	548	2896	2649
Wilmington	347	2167	1865
Winston-Salem	597	2997	2921
NORTH DAKOTA			
Bismarck	1618	7568	6718
Devils Lake (U)	1739	8100	7345
Fargo	1714	7539	6917
Grand Forks	1825	8046	
Pembina	1534	7730	
Williston (U)	1516	7425	6713
OHIO			
Akron	1006	4722	4497
Cincinnati (U)	702	3483	[illegible]
Cincinnati	789	3950	3899
Cleveland	967	4403	4332
Columbus	845	4151	4179
Dayton	894	4325	4163
Sandusky (U)	979	4392	4235
Toledo	1040	4880	4629
Youngstown	1011	4756	4467
OKLAHOMA			
Oklahoma City	700	3188	2932
Tulsa	653	3063	2882
OREGON			
Astoria	763	3905	3346
Burns (U)	1197	5318	5049
Eugene	798	3613	3394
Meacham	1187	5805	5356
Medford	795	3405	3338
Pendleton	1054	4450	3956
Portland (U)	793	3352	3012
Portland	838	3734	3331
Roseburg	758	3346	
Salem	805	3605	3262
Sexton Summit (R)	951	4658	4079
PENNSYLVANIA			
Allentown	927	4389	4356
Harrisburg	850	4031	3943
Philadelphia (U)	764	3451	3394
Philadelphia	790	3720	3656
Pittsburgh (U)	808	3869	3761
Pittsburgh	897	4358	4370
Reading (U)	815	3828	3790
Scranton	1007	4792	4441
Williamsport	[illegible]	4519	4387
RHODE ISLAND			
Block Island	904	4000	3944
Providence	941	4390	4365
SOUTH CAROLINA			
Charleston (U)	228	1560	1466
Charleston	245	1831	1629
Columbia	370	2212	2012
Florence	345	2171	2090
Greenville	503	2588	2425
Spartanburg	495	2594	2430
SOUTH DAKOTA			
Huron	1618	6965	[illegible]
Pierre	1458	6620	
Rapid City	1180	5607	5370
Sioux Falls	1486	6585	5911
TENNESSEE			
Bristol	588	3449	3203
Chattanooga	465	2804	2693
Knoxville	506	2995	2844
Memphis	492	2638	2547
Nashville	518	2986	2786
TEXAS			
Abilene	511	2203	2200
Amarillo	851	3279	3362
Austin	295	1400	1452
Brownsville	108	403	543
Corpus Christi	150	713	887
Dallas	434	2000	1909
Del Rio	269	1329	1239
El Paso	578	1874	2201
Ft. Worth	445	2034	1958
Galveston (U)	188	877	1005
Galveston	196	903	1029
Houston (U)	209	991	1083
TEXAS (Cont'd.)			
Houston	219	[illegible]	[illegible]
Laredo	150	695	710
Lubbock	761	2837	2869
Midland	542	2115	
Port Arthur	[illegible]	1166	1267
San Angelo	[illegible]	1920	1788
San Antonio	275	[illegible]	1355
Victoria	197	956	969
Waco	379	1764	1696
Wichita Falls	572	[illegible]	2475
UTAH			
Milford	1167	4352	4783
Salt Lake City	1114	4249	4358
VERMONT			
Burlington	1209	5684	5698
VIRGINIA			
Lynchburg	667	3359	3193
Norfolk	546	2792	2630
Richmond	631	3205	3068
Roanoke	662	3374	3194
WASHINGTON			
Olympia	865	4323	3822
Seattle (U)	768	3623	3131
Seattle-Tacoma	844	4204	3700
Spokane	1223	[illegible]	[illegible]
Stampede Pass (R)	1281	7111	6175
Tatoosh Island (R)	763	4356	3803
Walla Walla (U)	1062	4302	3737
Yakima	1218	5393	4519
WEST VIRGINIA			
Charleston	665	3605	3357
Elkins	783	4445	4222
Huntington (U)	647	3444	3162
Parkersburg (U)	737	3750	3599
WISCONSIN			
Green Bay	1369	6026	5977
La Crosse	1371	6020	5739
Madison (U)	1217	5444	5371
Madison	1229	[illegible]	5476
Milwaukee	1153	5114	5141
WYOMING			
Casper	1177	5301	5440
Cheyenne	1222	5115	5181
Lander	1391	5850	6012
Sheridan	1256	5891	5675
ALASKA			
Anchorage	1584	8992	7718
Annette	983	5725	4773
Barrow	2691	14849	13196
Bethel	1887	9903	8928
Cold Bay	1152	7001	
Cordova	1387	7732	6519
Fairbanks	2193	11799	10600
Juneau	1247	7365	6225
King Salmon	1711		
Kotzebue	2219	11599	10802
McGrath	2122	11764	10472
Nome	2011	10519	9468
Northway	2332	13103	11591
St. Paul	1308	7446	6907
Yakutat	1198	7100	6301

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

FEBRUARY 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by catagories: Property (exclusive of crops)	Estimated damage by catagories: Crops	Character of storm	Remarks
IOWA	1-2				1	7	3	1	Snow	Numerous traffic accidents on slippery highways. 1 man died of heart attack while shoveling snow.
	1-2									Minor storm also reported at Winchester, Va.
TEXAS	1-6		600		20		6	1	Snow and wind	Widespread storm affected all of State, except lower valley. Storm moved southeastward.
ARIZONA Parker, Yuma County	2	1-3 a.m.				Few	3		Wind	Strong winds accompanying strong invasion of cold air from north reached estimated gale-force.
CALIFORNIA Southern portion	2						5		Wind, sand, and dust	At Ontario Airport winds reported to have reached gusts above 90 m.p.h., and only disk of sun visible through blowing sand and dust. Air traffic halted and some road travel severely hampered by poor visibility and drifting sand. Roofs of airport warehouses at Ontario damaged and trees and powerlines downed in Cucamonga-Ontario-Upland areas.
	2-3									Minor storm reported in Richland County, S. C.
GEORGIA Pachitta area, Randolph County	3	4:40 p.m.	Short		0	0	3	1	Tornado (suspected), rain, and hail	Considerable local damage to power and telephone lines. Many poles broken off and 44,000-volt transmission line blown down, leaving Cuthbert without current for about 6 hours. Roof blown off 2 barns and minor damage done to 2 residences. Heavy hail fell briefly over small area.
	3									Minor storm reported at Bastrop, La.
IOWA Central and southern portions	6	Early morning				2	3	1	Freezing rain and snow	Traffic accidents and falls resulted from slippery streets and walks.
MICHIGAN (Lower) southeastern and extreme southern portions	6	Day			3	550	4	1	Freezing rain	Freezing rain made streets and highways extremely slippery in affected area. 500 people injured in Detroit area alone, mostly from falls on ice. Large number of auto accidents reported, but most minor.
MAINE Southern and central portions	6-7	Late p.m. 6th, to late p.m. 7th			1	5			Snow	Unusually heavy snowstorm dumped 8 to 15 inches over area. Traffic in cities became snarled, schools closed, meetings and basketball games cancelled, and road crews kept busy in attempt to keep streets and highways passable. Storm indirect cause of death of man killed in auto crash during height of storm.
	7									Minor storms reported at Frederick and El Reno, Okla.
TEXAS Angleton, Brazoria County	8	11 a.m	1/4		0	0	2	1	Tornado (suspected) and rain	Storm moved southeastward.
LOUISIANA Evangeline to Feliciana Parishes	8	2-3 p.m.	30	300	0	0	4	1	Tornado, wind, and rain	Tornado moved from 5 miles north of Opelousas to near St. Franscisville; path noted by substation inspector along highway; attendant winds about 10 miles wide from Eunice through Opelousas to St. Francisville and Angola where area of damaging winds about 30 miles wide. Most damage from windstorm, as tornado passed over no thickly populated area while windstorm struck several towns. Storm moved east-northeastward.
ALABAMA Washington County	8	7 p.m.					4	1	Wind and rain	Damage over Washington County mostly to timber, roofs, and TV aerials. Storm moved eastward.
CALIFORNIA Southern portion	8						4		Wind	High winds lifted and smashed 60 x 24-foot building at San Bernardino and blew down a number of trees and powerlines in Redlands and Orange County. Trabuco was without power overnight.
	8									Minor storms also reported at Chickasha and Sallisaw, Okla.
	9									Minor storm reported at Haines, Alaska.
FLORIDA Bradenton (4 miles southeast of), Manatee County	10	7:30 p.m.	Short	Narrow				1	Tornado (suspected), wind, rain, and electrical	Wrecked silo and damaged barns on dairy farm.
SOUTH DAKOTA	10-16								Glaze, sleet, and thunderstorm	Scattered, light occurrences daily from 10th to 16th. Thunderstorm, unusual at this season, reported at Ellingson on 12th.
TEXAS Nederland, Jefferson County	14	12:30 p.m.	4	75-100	0	0	4	1	Tornado and rain	Tornado moving east-northeastward accompanied by excessive rain (3 to 4 inches in 1 hour).

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ARKANSAS Evening Shade, Sharp County	14	10:30 p.m.	Short	200	0	2	4	1	Tornado, rain, and hail	Tornado moving eastward destroyed 1 house and brooder house and damaged 2 other houses.
ARKANSAS Pope, Conway, and Van Buren Counties	14	10:30-11:50p.m.	32	300	1	5	4	1	Tornado, wind, and hail	Principal damage near Moreland in Pope County, 3 miles south of Cleveland in Conway County, and in the Rabbitt Ridge area of Van Buren County. Storm moved east-northeastward.
ARKANSAS Melbourne, Izard County	14	10:45 p.m.	4		0	0			Tornado (suspected) and wind	Suspected tornado moving northeastward destroyed 1 home and barn, damaged 1 home, and destroyed broiler house killing 1700 chicks.
ARKANSAS Sardis, Conway County	14	11:50 p.m.	2	500	0	0	4	1	Tornado, wind, rain, and hail	Tornado moved northeastward. Witness reported heavy roaring sound.
	14									Minor storm also reported at Cape Girardeau, Mo.
WASHINGTON Entire State	14-17				1				Snow and wind	Heavy snowfall accompanied by high wind in east blocked highways and caused building roofs to collapse in a few localities. 1 person killed when truck, being used to remove snow, overturned in Lake Chelan.
ARKANSAS Midway area, White County	15	12:30 a.m.	1	100	0	0	4	1	Tornado (suspected) and hail	Suspected tornado moved northeastward. Houses damaged and barns destroyed.
ARKANSAS Sugar Loaf Mountain, Cleburne County	15	early morning			0	0	4	1	Tornado (suspected), wind, and rain	6 homes destroyed shortly after midnight.
IDAHO Eastern portion	15	All day							Wind and snow	Strong winds accompanied by blowing and drifting snow. Vehicular traffic hampered by drifts and by reduced visibility on roads and highways north and east of Idaho Falls. Schools closed in Teton County because of blocked roads.
LOUISIANA Orleans, Jefferson, and St. Bernard Parishes	15	2:30 p.m.	2	200			4		Wind, rain, and electrical	Heavy rains, up to 5.70 inches in 7 hours, over Orleans and nearby Jefferson and St. Bernard Parishes flooded area, stopping all public transportation for up to 7 hours; windstorm struck in Algiers and Chalmette areas, causing damage to roofs. Storm moved eastward.
	15									Minor storms also reported in Daviess County, Ky.; at Stillwater, Okla.; and at Sulphur Springs, Tex.
SOUTH DAKOTA Central and western portions	15-16								Blizzard	Worst conditions between Pierre and Rapid City on 16th when highway traffic stopped.
ARKANSAS Marvell (5 miles north of), Phillips County	16	7:30 a.m.	Short		0	0		1	Tornado	Witness observed funnel moving in twisting path from northwest. 2 houses and automobile damaged. 4-inch post driven through body of automobile.
ARKANSAS Beebe and Antioch, White County	16	Noon	Short	50	0	0	6	3	Tornado and hail	Gusts to 50 m.p.h., at airport. Storm moved east-northeastward.
TEXAS Comanche, Ellis and Hamilton Counties	16	1:35-8:30 p.m.	300	200	0	0	4	1	Tornado, wind, and hail	Essentially straight-line windstorm except for tornado at Gustine, Comanche County at 1:35 p.m., with damage of $10,000. Storm moved northeastward.
INDIANA Clinton County	16	Afternoon					4	1	Freezing rain	In Clinton and surrounding counties accumulations of ice, as rain fell in freezing temperatures, tore down utility lines and tree limbs. Some schools closed. Several automobiles damaged. Electrical service in large portions of area cut off for several hours. Fortunately, winds were light.
IOWA Central and southeastern portions	16	Afternoon				9	4	1	Freezing rain and snow	Hundreds of traffic accidents on slippery streets.
MISSISSIPPI Aberdeen area, Monroe County	16	6:20 p.m.	1 1/4	100-300	1	55	6	1	Tornado, wind, rain, hail, and electrical	Tornado developed in line of thunderstorms extending from Dancy to Smithville; tornado struck first in village of Prairie, 5 miles west-southwest of Aberdeen, then lifted until it reached the city; skipped houses for a block or two, then settled down moving eastward for 2 blocks, northward for 1 block, then eastward again for 8 blocks before lifting again; began narrow, about 1 2 block wide, then spread out to widest of full block and then narrowed again before lifting. Climatological observer, living on opposite side of street from block which was ripped apart,

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MISSISSIPPI (Cont'd)										watched destruction, reported balls of lightning before tornado struck; reported steel boxcar exploded, blowing roof off. Aberdeen appears to have been on extreme southern edge of squall line as clear sky prevailed 1 mile south of tornado path, but thundersqualls covered area 15 to 20 miles wide to north.
ARKANSAS Miller and Hempstead Counties	16	7:50 p.m.	20	*3			6	3	Wind, rain, and hail	Gusts to 50 m.p.h., at airport. Storm moved east-northeastward.
	16									Minor storm also reported near Monticello, Ark.
OKLAHOMA Ardmore, Carter County	17	5:40 a.m.				2			Electrical and rain	Lightning struck home and caused explosion and fire which resulted in complete loss. Elderly couple injured when escaping through window.
ARKANSAS White County	17	3-6 p.m.							Wind and hail	Winds and light hail accompanied thunderstorms. Principal damage at Griffithville, Searcy, and Georgetown.
MISSISSIPPI Leflore and Montgomery Counties	17	4-5 p.m.	50	*1			4	1	Wind, rain, and electrical	Moved east-northeastward from Greenwood to 4 miles northwest of Winona; uprooted trees, severed utility lines, and damaged roofs.
MISSISSIPPI Corinth to Farmington, Alcorn County	17	7 p.m.	3	300	0	0	4	1	Tornado (suspected), wind, rain, and electrical	Probable tornado, but little evidence for basing judgment. Small damage in Corinth, and in Farmington barns and small buildings destroyed. Storm moved east-northeastward.
TENNESSEE Lawrence and Giles Counties	17	8 p.m.	10	*1	0	2	4	1	Tornado, wind, and rain	Trees uprooted, houses unroofed; warehouse roof carried 300 yards and 2-story house leveled to ground. Storm moved northeastward.
ALABAMA Colbert and Lauderdale Counties	17	8:15 p.m.					6	1	Wind, rain, and electrical	Damage mostly in Florence and Sheffield. Wind gusts at airport up to 77 m.p.h., in area with no damage. Storm moved east-northeastward.
ALABAMA Center Star and Elgin, Lauderdale County	17	8:45 p.m.					5	1	Wind, rain, and electrical	Storm moved east-northeastward.
ALABAMA Guin, Marion County	17	10 p.m.					5	1	Wind, rain, and electrical	Damage confined mostly to dwellings and TV antennas. Storm moved east-northeastward.
TENNESSEE Stockton community, Fentress County	17	10 p.m.			0	2	4	1	Tornado	Tornado moving northeastward occurred between Jamestown and Allardt. Damage to standing timber and roofs of dwellings. Barns and garages damaged. 1 home together with all household furniture completely destroyed.
MISSISSIPPI Webster and Clay Counties	17	10:20-10:40 p.m.	20	300	0	0	5	1	Tornado, wind, and rain	Developed at Pheba City in Webster County and moved east-northeastward skipping along highway to West Point. Plate-glass windows and glass-brick windows blown outward by explosive pressure. Cloud reported "plum shaped" and not touching ground at times. Thunderstorms occurred at same time over wide area to north of this tornado, including Aberdeen which was struck by tornado previous night. Considered to be 1 tornado although a witness reported seeing 2 funnels whic came together near West Point. Tornado missed major portion of town, just hitting northern edge.
	17									Minor storm also reported at Delta City, Miss.
ALABAMA Scottsboro area, Jackson County	18	12:20 a.m.		1,500		1	5	1	Wind, rain, and electrical	Damage in Scottsboro and about 2 miles on highway west of city. Storm moved east-northeastward.
ALABAMA Guntersville, Marshall County	18	12:40 a.m.					4	1	Wind, rain, and electrical	Storm moved east-northeastward.
TENNESSEE Knox and Blount Counties	18	1:30 a.m.					4		Wind, rain, and electrical	Fastest mile 49 m.p.h., from southwest at 2:13 a.m Scattered damage to communication and powerlines and to barns and sheds, especially roofs. Storm moved eastward.
GEORGIA Northwestern portion	18	1:30-2 a.m.	25	100	0	0	6	1	Tornado, wind, rain, hail, and electrical	Hardest hit was LaFayette, in Walker County, where total property damage estimated at $750,000. 6 homes, body shop and 8 cars inside, feed mill, and drive-in theater destroyed. Many other homes and business buildings damaged and roof blown off high school gymnasium. What is thought to be same storm continued through mainly rural sectio of Whitfield and Catoosa Counties hitting communities of Rocky Face, Crow Valley, Waring, Pleasant Grove, Varnell, and Cohutta. Poultry industry alone suffered estimated $100,000 damag

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
GEORGIA (Cont'd)										in Whitfield County. 15 to 20 broiler houses destroyed and 50,000 young chicks killed. Widespread but mostly minor damage caused over much of northern part of State from high winds associated with this storm condition. Damage extended as far south as Atlanta and as far east as Gainesville. Wind gusts recorded at 67 m.p.h., at Rome, 58 m.p.h., at Marietta, and 45 m.p.h., at Atlanta. Amazing thing about this storm was that there were no deaths and no serious injuries. Storm moved east-northeastward.
	18									Minor storm also reported at Leeds, Ala.
ALASKA Haines and Point Retreat	18-20			*50-100			3	1	Wind	Strong pressure gradient associated with slow-moving low in Gulf of Alaska. Gradient wind remained strong through 3-day period. Warehouse in Haines moved 4 feet on docks. Wind reached hurricane force at Point Retreat. Radio antennas broken; anemometer cups blown away. Storm moved eastward.
CALIFORNIA Northern portion	19-22						5		Wind and rain	Heavy rains began in north and central early on 19th. Storm front became established over extreme north and southwesterly flow maintained over north, causing heavy rains through 22d. Dos Rios recorded 15 inches in 3 days. Heaviest rainfall reported in Russian River Basin 10.32 inches at Guerneville. Nearly 15 inches fell at Middletown and at Hobergs 19.32 inches from 19th to 23d. At Red Bluff wind speeds averaged 36 m.p.h., during 80-hour period from 18th to 22d, reaching fastest mile of 61 m.p.h., on 21st with gusts to 70 m.p.h. Winds damaged roofs and downed telephone lines in some areas in north. Northwestern Pacific Railway tracks covered by 17 slides between Dos Rios and Scotia. High winds blew down telephone and telegraph lines, completely isolating Eureka on 21st. The heavy rains resulted in local flooding. Break in Cache Creek levee near Yolo Bypass on 22d caused flooding of about 1,000 acres of farmland.
OREGON Josephine, Lane, Jackson, and Douglas Counties	19-22		125	*100			5	1	Wind, rain, and snow	Heavy rain at lower elevations and snow at higher levels during 4-day period, produced very heavy totals in areas of south-central and southwest. At Grants Pass, where storm damage greatest, total of 7.10 inches of rain fell in a 48-hour period. Several areas of Josephine, Jackson, and Douglas Counties suffered considerable flooding. This resulted when runoff capacity of culverts, drainage ditches, and small local creeks were exceeded and excess rapidly filled basements and low-lying business and residential areas to considerable depths rather than from flooding of any major stream. In Grants Pass area 75 homes flooded, also 13 businesses and 23 motels; several streets and highways in and near city were badly eroded and approaches to a number of bridges washed out. At Merlin railroad bridge washed away. In Jackson County approximately a dozen families evacuated as heavy rains drained off into area surrounding their homes. Flash flood in normally nearly-dry Willow Creek at Madras in central Oregon sent water over sidewalks and into several basements of business district on 21st. Also at Baker minor damage to motel and lumberyard when warm rains and melting snow caused sudden rise in small creek. At higher elevations in Cascades and Siskiyous 1 to 2 feet of snow produced very hazardous driving conditions on main highways. At one point in Cascades snowslide pushed bus off road. Near Cruzette above Oakridge freight train caught in another avalanche. In neither were there any deaths or serious injuries. East-west rail and bus travel delayed several hours. Weight of snow broke number of power and telephone lines in southwest or felled trees across lines as well as across roads. Slides also further interrupted communication and power services. Fairly high winds that accompanied storm in south combined with ice and snow to interrupt power service for several hours in Medford and Klamath Falls areas. High water, heavy snows, and slides caused closing for 1 to 3 days of many schools throughout Jackson and Josephine Counties and in scattered areas of Lane and Douglas Counties. Storm moved eastward.
WASHINGTON Franklin and Adams Counties	19-22		100	*75	2		6		Rain	Rapidly rising temperatures and heavy rain on 4- to 8-inch snow cover on frozen ground resulted in one of most serious floods on record in Lind, Mesa, and Connell areas. 40 homes flooded in Connell; necessary to evacuate several persons from their homes in Lind and Mesa. 2 men drowned near Pasco when trapped in irrigation canal by flood waters.

See reference notes at end of table.

Table 4—Continued

February 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons Killed	Number of persons Injured	Estimated damage by catagories Property (exclusive of crops)	Estimated damage by catagories Crops	Character of storm	Remarks
GEORGIA Burke, Jefferson, and Richmond Counties	20	5:30-6 a.m.					6	1	Wind and rain	Thought to be straight-line wind, but possibly tornadic at one point. Many trees uprooted or twisted off. Small school building wrecked in Jefferson County. Several barns unroofed. Telephone and powerlines damaged. Storm moved eastward.
SOUTH CAROLINA Pineville area, Berkeley County	20	7:20 a.m.	1/4	10	0	1	3	1	Tornado, wind, rain, and electrical	Tornado moved northeastward approximately 1/4 mile northeast of center of town. Path appeared to have been erratic and very narrow. Storm first pushed 1 house off foundation, knocking down chimney and fireplace on outside wall, skipped across small cotton patch, broke pine tree, overturned outhouse, destroyed a house, curved slightly to right shearing top off pine tree and dropping branches in semi-circular pattern, skipped wooded area of about 100 yards, and ripped off tin roofing and otherwise damaged 2 other houses. Report of damage to other houses about 1/4 mile further east, but unable to confirm. Other houses within a few feet of storm path undamaged. In house destroyed, occupant pinned down to chair by roof, but escaped unhurt. The roof had been lifted off and set down at about 45° angle to house on endwall which had collapsed; also, sidewall pushed out, and whole house moved off concrete pillars about 8 or 10 feet.
	20									Minor storm also reported in Aiken, Orangeburg, Berkeley, and Williamsburg Counties, S. C.
IDAHO Cobalt (near)	22	Late afternoon			1				Snowslide	Snow removal equipment and operator swept off Morgan Creek-Panther Creek road about 15 miles from Cobalt, killing operator.
SOUTH DAKOTA Eastern half	23	6 a.m.- 3 p.m.							Snow and wind	Drifting and blowing snow stopped traffic in several areas. Storm unusual since temperatures were in 50's in western half of State and winds in storm area were south rather than usual northwest.
MINNESOTA	23-24	P.m.-a.m.				Many	2	1	Glaze	Freezing drizzle fell over entire State, except northwestern corner. Many slipping accidents; numerous traffic accidents. Storm moved northeastward.
OKLAHOMA Entire State	24	Afternoon-night			4	6	6		Wind and dust	3 persons killed in automobile accident in Beaver County when dust obscured road and oncoming car. Other death resulted when wind blew down oil derrick on which man was working in Pontotoc County. 3 persons injured in automobile accident and 3 pilots injured as they bailed out or crash-landed their jet planes at or near Tinker Field. Crop damage estimates about 30 percent in Cimarro County, moderate in Texas and Beaver Counties, an 1 to 5 percent in other extreme western counties. 3 Air Force jet planes valued at $270,000 each lost. School gymnasium at Plainview, Carter Coun destroyed, loss $55,000. Home nearby damaged by wind and flying debris, loss $2,000. Barracks and planes at Ardmore Air Force Base damaged, loss $25,000. Tower at Base abandoned when winds reached 95 m.p.h. Oil-drill rig blown over and completely destroyed in Garvin County, loss $70,00 Hangar destroyed and 2 planes damaged in Beckham County, loss $12,000. Fire broke out during height of storm at Altus, Jackson County, causing $150,000 damage. Additional $50,000 damage to City by high wind. House-trailer plant in Canadian County received $3,000 damage. Hangar destroyed and several planes damaged at small air field in southern Oklahoma County, loss $6,000. Several hundred dollars damage to 2 planes near Norman, Cleveland County. Additional damage over State included homes, barns, garages, business buildings, and small outbuildings destroyed or damaged. Automobiles had broken windows from sudden pressure change. Blown-over trees and falling branches damaged automobiles and power an telephone lines, and broke windows. Many plate-glass windows smashed by strong wind. Excessive damage by roofs being blown off, shingles being stripped from roofs, and TV antennas being demolished in all sections of State. Storm moved southeastward.
KANSAS Montgomery County (central and southwestern portions)	24	8:30 p.m.						1	Wind	Following a day of strong southerly winds, shift to north damaged TV antennas and a number of garages and outbuildings.
MISSOURI Iantha (1 3/4 miles northeast of), Barton County	24	10:30 p.m.	Short	Narrow	0	0	2	1	Tornado (suspected), rain, hail, and electrical	Shed blown away. All 4 corners of tile barn brok open. In Irwin, 4 miles farther northeast, hail 1 inch in diameter caused minor damage.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MISSOURI Carthage, Jasper County	24	11 p.m.	10	*5			4	1	Hail	Greenhouses and roofs damaged by hail. Storm moved northeastward.
MISSOURI Everton, Dade County	24	11 p.m.	6	Narrow	0	0	4	1	Tornado, rain, and hail	Tornado moving northeastward seemed to touch ground only a few yards at a time. Barn destroyed, leaving contents standing; branch driven through a wall; porch destroyed.
MISSOURI Seneca area, Newton County	24	11:30 p.m.	1/4	100	0	0	4	1	Tornado, rain, hail, and electrical	Several roofs partly blown off. 2 houses moved from foundations. Hail up to 1 1/2 inches in diameter. Several windows burst outward. 3 sheds picked up and carried 1/4 mile on farm 3 miles north of Granby. Storm moved northeastward.
MISSOURI Springfield (3 miles north of), Greene County	24	11:55 p.m.	Short	Narrow	0	0	2	1	Tornado, wind, rain, and hail	Funnel seen aloft 3 miles north of Springfield. Damage occurred 2 miles northeast where several small buildings blown over; other damage in area caused by straight-line winds. Storm moved northeastward.
OKLAHOMA Duncan, Stephens County	24	Night					4		Wind and dust	Damage to roofs, TV antennas, and other property. Winds estimated to 65 m.p.h., caused destruction and severe blowing dust.
IDAHO Idaho, Lewis, Nez Perce, and Clearwater Counties	24	Night							Snow	Drifting snow halted traffic on highways and secondary roads.
	24									Minor storm also reported at Lebanon, Mo.
TEXAS Panhandle and southern Plains areas	24-25	11 a.m. 24th-1:50 p.m. 25th	850		5	17	6		Wind and dust	Storm moved southeastward. Damage mostly to signs, awnings, etc., and sand blasting of automobiles. Unfinished roof of school blown off.
OKLAHOMA Fort Gibson and Tahlequah, Muskogee and Cherokee Counties	24-25	11:30 p.m. -12:35 a.m.			0	0	4	1	Tornado (suspected), wind, rain, hail, and electrical	Windstorm damaged roofs, windows, signs, autos, and blew over an auto trailer in Muskogee area. Home completely destroyed in Elm Grove community about 5 miles east of Keefeton. Small hail with strong wind and lightning reported at Tahlequah in Cherokee County. Resident of Fort Gibson said he saw funnel moving northeastward along shore of lake. Considerable damage done to boats, docks, and cabins.
OKLAHOMA Miami and Quapaw, Ottawa County	24-25	11:45 p.m.-12:15 a.m.					3	1	Wind, hail, and rain	Cooperative observer reported hailstones size of golf balls in vicinity of Quapaw. Small hail reported in Miami, also.
INDIANA Marion County	24-25	11:49 p.m.-3:31 a.m.					4	1	Wind, rain, hail, and electrical	Trees falling on houses and cars caused considerable damage. Heavy rain flooded streets, sewers, and basements. Damage caused by erosion in new home construction areas considerable. Storm moved eastward.
ARKANSAS	24-25	Late evening 24th-4 a.m. 25th				2	5	3	Wind, rain, hail, and electrical	Storm entered extreme northwestern corner of State and moved to eastern border and southeastern portion. Principal damage in Benton, Carroll, Boone, Marion, Baxter, Lawrence, Clay, Greene, Craighead, Franklin, Pope, Conway, Faulkner, Cleburne, White, Polk, Pulaski, Lonoke, Prairie, Lee, and Cleveland Counties. No portion of State spared high and gusty wind. Storm moved southeastward.
ICHIGAN Lower, and southern portion of Upper	24-25				5	100	5	1	Freezing rain, snow, wind, electrical, and fog	Freezing rain throughout area, also periods of dense fog, high winds, thunderstorms, rain, and snow in many sections, especially in south. Rain and melting snow on frozen ground caused some flooding, especially in southwestern Lower Michigan.
KLAHOMA Wright City, McCurtain County	25	12 a.m.	6	400	0	0	1	1	Tornado (suspected), wind, and rain	Possible tornado aloft with strong winds on ground. Observer noted constant roar. Only damage was uprooting of trees. Storm moved southeastward.
LLINOIS Central and southeastern portions	25	Midnight-3 a.m.					5		Wind, rain, hail, and electrical	Widely scattered damage to trees, overhead wires, and buildings caused by strong winds and hail during passage of low and cold front. This damage slightly more concentrated along line from Clinton County to Richland County and in vicinity of Franklin County. Storm moved eastward.
ISSOURI Pacific (4 miles southwest of), Franklin County	25	12:05 a.m.	Short	100	0	0	3	1	Tornado (suspected)	Suspected tornado moving northeastward unroofed 2 barns and destroyed 2 sheds. Limbs broken along narrow path.
ISSOURI St. Louis area	25	12:20 a.m.	2		0	16	5	1	Tornado and rain	Tornado moving east-northeastward traversed area from just south of Gray Summit to Clinton, Ill. 200 homes damaged, 12 in 1 block in Lemay.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ILLINOIS St. Clair and Clinton Counties	25	12:25 a.m.	40	200-500	6	20	6	1	Tornadoes, wind, rain, and electrical	First severe February tornado since 1888 in this State. After crossing Mississippi River from Missouri tornado first hit Dupo, the Imbs Station area, and Belleville. At 12:50 a.m., Summerfield was hit squarely. 3 persons killed near Imbs Station and 3 at Summerfield. From Summerfield there was damage eastward to about Breese. Eastward movement through this area around 60 m.p.h. Surveys of damage sites and photographs of damage indicate there was 1 funnel cloud moving from Dupo, east-southeastward through Imbs Station to Belleville. Another funnel formed just west of Summerfield and moved 5 miles east-southeastward through middle of Summerfield. Apparently a third funnel moved eastward along Highway 50 with scattered damage through Trenton, Aviston, and Breese. This path poorly defined as to width and direction of movement. Major damage areas in Illinois lay along line running slightly north of east from St. Clair County to northern Lawrence County and into Indiana. Individual funnel paths at Imbs Station and Summerfield very straight and clearly toward east-southeast. Rapid movement with no sign of curvature in individual storm paths are reasons for postulating separate funnels.
MISSOURI Branson (10 miles west of), Taney County	25	12:37 a.m.	8	*2		3	4	1	Wind, rain, hail, and electrical	163-foot mobile tower at Table Rock Damsite toppled, causing considerable loss of construction time. A few roofs damaged. Hail 1 inch in diameter. Storm moved eastward.
LOUISIANA Morehouse, Richland, Madison, and Carroll Parishes	25	1-4 a.m.					4	1	Wind, rain, and electrical	Thunderstorms attending movement of cold front developed high winds in places, causing damage in 1 or more places in each Parish; damage mostly minor in each instance. Storm moved southeastward.
INDIANA Boone County	25	1:30 a.m.	1	70	0	0	4	1	Tornado, wind, rain, hail, and electrical	Tornado moving east-northeastward tore apart several barns along indefinite path from point east of Advance to point 1 1/2 miles south of Lebanon.
MISSOURI Perryville, Perry County	25	2 a.m.	2	800			4	1	Wind and hail	Cafe unroofed, barn and shed destroyed, and 18 homes suffered varying amounts of damage. Storm moved northeastward.
INDIANA Brownstown area, Jackson County	25	2-4 a.m.	2	100	0	1	5	1	Tornado, wind, rain, hail, and electrical	Tornado moving eastward along Brownstown-Owen Township road about 4 1/2 miles northwest of Brownstown and demolished or damaged several buildings.
ILLINOIS Richland and Lawrence Counties	25	2:13 a.m.	20	450	0	2	6	1	Tornado, wind, rain, hail, and electrical	Apparently a continuation of St. Clair County storm with tornado-spawning cloud formations moving at very nearly 60 m.p.h., that reached Olney at 2:13 a.m., and Pinkstaff at 2:33 a.m. Severe portion of tornado path running through Pinkstaff was oriented toward east-northeast and parallel with principal storm axis across southern Illinois. At Olney, directly in line with Pinkstaff, hail quite heavy and nonofficial observer noted sudden fall and rise of 0.3 inches in barometric pressure as hail fell. Hail damage totaled approximately $200,000, with most of it west of Pinkstaff.
INDIANA Knox County	25	2:57 a.m.	8	900	0	1	4	1	Tornado, wind, rain, hail, and electrical	Path of tornado and severe storm activity was from Bruceville to Odon through Edwardsport and along State Road 358. Home and several small buildings demolished at Bruceville. Home unroofed at Edwardsport, and car with passengers picked up by winds. Several buildings damaged northwest of Bicknell and near Bruceville. Path of tornado not continuous and not well defined. Storm moved east-northeastward.
MISSOURI East Prairie (near), Mississippi County	25	3:32 a.m.	1/2	Narrow	0	0	3	1	Tornado (suspected) and rain	Cinder-block building at Pinhook virtually leveled. Storm struck again 1/2 mile northeast.
MISSOURI New Madrid (4 miles north of), New Madrid County	25	4 a.m.	7	100	0	0	4	1	Tornado, rain, and electrical	Tornado moving eastward damaged 6 homes and 3 other buildings. Numerous sheet-metal roofs damaged.
INDIANA Bargersville, Johnson County	25	4-5 a.m.			0	0	5	1	Tornado, rain, and electrical	Numerous buildings destroyed or damaged west of Bargersville.
MISSISSIPPI Marshall, Grenada, Sharkey, and Tippah Counties	25	4-6 a.m.					4	1	Wind, rain, hail, and electrical	Thundersqualls developed on or near cold front, moving rapidly southeastward. Damage at Byhalia and Holly Springs in Marshall County, Grenada in Grenada County, 3 miles west of Holly Bluff in Sharkey County, and at Ripley in Tippah County.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TENNESSEE Shelby County	25	4:15 a.m.	1 4	67			4	1	Wind and rain	Wind speed estimated at 90 m.p.h., at point of damage. Storm occurred 6 1/2 miles southeast of Weather Bureau Airport Station at intersection of Highway 78 and Holmes Road. A few trees blown down, limbs broken, roofs damaged, 1 home severely damaged, and several large advertising signs scattered over city damaged. Storm moved northeastward
INDIANA Martinsville, Morgan County	25	4:26 a.m.	2	20-100	0	3	4	1	Tornado, wind, rain, and electrical	Tornado moving east-northeastward upset 7 house trailers on west side of city. 20 houses unroofed and many plate-glass windows broken.
INDIANA Johnson County	25	4:35 a.m.	5	Few	0	0	5	1	Tornado, wind, rain, and electrical	Tornado moving eastward destroyed farm buildings and killed livestock. Touched ground at point 3 miles north of Trafalgar to point 3 miles south of Franklin. It may have been same tornado that struck Shelbyville.
Indiana Shelbyville, Shelby County	25	4:50 a.m.	2	300	0	0	6	1	Tornado, wind, rain, and electrical	Tornado moving east-northeastward carried roof of factory a few hundred feet. Roofs and windows of several buildings damaged. Southwest Shelbyville hardest hit.
INDIANA Arlington, Rush County	25	5 a.m.	Several	Few	0	0	2	1	Tornado, wind, rain, and electrical	Tornado moved northeastward, several small buildings and roof of house and barn destroyed on farm 3 1/2 miles north of Arlington.
OHIO Harrison area, Hamilton County	25	5:35 a.m.	1, 2	100	0	Few	5	1	Tornado (suspected)	Major damage done to trailer camp 2 miles east of Harrison, where trailers scattered and 1 concrete-block building demolished.
OHIO Hamilton, Butler County	25	5:45 a.m.	1	500	0	Few	5	1	Tornado	Seriously damaged hundreds of homes and business buildings. Most valuable was plant manufacturing machine tools. Storm moved east-northeastward.
INDIANA Vevay, Switzerland County	25	5:45 a.m.	1 4	55	0	0	3	1	Tornado, rain, and electrical	At farm northeast of Vevay, porch and roof of house carried 100 yards. Storm moved northeastward.
OHIO Cedarville, Greene County	25	6:30 a.m.	1/4	30	0	0	5	1	Tornado	Imperfectly developed tornado passed overhead at elevation sufficient to tear roofs off houses without damaging trees lower down. 1 substantial building demolished east of business section. Storm moved northeastward.
OHIO Miamitown, Hamilton County	25	7 a.m.			1				Wind	Man electrocuted from contact with downed "live" wire.
NDIANA Cambridge City and Richmond, Wayne County	25	9:30 a.m.				3	5	1	Wind, rain, and electrical	3 patients of Richmond State Hospital injured when part of roof collapsed. 2 walls and steel roof of contractor's warehouse south of Richmond blown down. At Cambridge City wind blew over wall of gymnasium being constructed, valued at $30,000.
EORGIA Most of State	25	10 a.m.- 2 p.m.				1			Wind and rain	Strong winds, in advance of cold front, swept across entire State causing widespread but relatively minor damage. Storm moved into northwestern part of State at about 10 a.m., and had reached coast by midafternoon. Damage included uprooted trees, several of which fell on automobiles and rooftops; felled power and telephone lines; and wrecked TV antennas. Some roofs also damaged. Atlanta apparently hit hardest, but among other places reporting damage were: Rome (where gusts reached 78 m.p.h.), Calhoun, Gainesville (where 1 person was slightly injured when tree blown onto building at Brenau College), Augusta, Griffin, and Macon. High winds also reported from Midville, Glennville, Moultrie, and Albany. Storm moved southeastward.
EST VIRGINIA Parkersburg, Wood County	25	11:30 a.m.				2			Thunderstorm with wind	A cold front passage accompanied by thunderstorm with high winds. Gusts up to 63 m.p.h., at airport. Electric power and telephone services disrupted. Roofs, windows, and TV antennas damaged.
DIANA oshen, lkhart County	25	A.m.					4	1	Rain and wind	40 families forced to evacuate their houses because of heavy rains flooding basements and streets. High winds caused some damage.
NTUCKY ntire State	25	A.m.				6	6		Wind, rain, hail, and electrical	Winds estimated in gusts to 70 m.p.h., and higher caused considerable damage over most of State. Over 40,000 claims filed with insurance companies. Scores of business and residential buildings damaged. Store windows shattered, TV antennas toppled, trees uprooted, and cars damaged. Utility services disrupted. Uncomfirmed funnel cloud reported at Piner.
WAII awailoa- aialua and icinity, sland of Oahu	25	Morning					5		Rain	Heavy rain, over 8 inches locally in 24 hours, most of which fell between 6 a.m., and noon. Homes flooded; contents damaged or ruined. Several houses floated from foundations and badly damaged. Plantation roads washed out; irrigation lines broken.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

February 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NORTH CAROLINA Alamance, Catawba, Cumberland, Forsyth, Guilford, New Hanover, Orange, Randolph, Richmond, and Rowan Counties	25	All day				1	5		Wind	Storm winds in connection with cold front did widespread minor damage to power and telephone lines, roofs, signs, trees, outbuildings, plate-glass windows, TV antennas, etc. A few automobiles damaged by falling trees, 1 or 2 church steeples toppled, and a few small aircraft overturned. Minor injury caused by flying window shutter. $50,000 damage in Greensboro-High Point area where worst of storm was centered.
NEW ENGLAND	25	All day			1	6	5	1	Wind and rain	Windstorm swept across New England and caused widespread damage. Brunt of storm borne by Massachusetts where wind speeds attained hurricane force in gusts over central and western portions. On Mt. Greylock near Adams, Mass., transmitter tower of TV Station WMGT broken in two, with damage estimated at $75,000. At Shrewsbury, Mass., 40-foot-high roller-coaster section 125 feet long toppled and destroyed, with loss estimated at $45,000. Coaster section fell across powerline leaving 600 homes without electricity. Elsewhere in Massachusetts and New England much damage done to roofs, chimneys, shingles, and windows. Falling trees and limbs took electric and powerlines down with them, temporarily depriving thousands of homes of light, heat, and power. In parts of western Massachusetts heavy rain accompanied winds, causing washouts on roads and flooding basements. Storm indirect cause of single fatality in New England when autoist struck tree during gale-swept downpour in Warwick, R.I.
PENNSYLVANIA Entire State	25	All day				25	7	1	Wind and rain	Powerlines felled, windows broken, house roofs damaged or torn off, trees and utility poles snapped, several automobiles smashed by felled trees. Billboards toppled, several barns destroyed, and innumerable TV antennas blown down. 4-story scaffold partially destroyed in Philadelphia. 2 light planes damaged at Middlesex Airport where they were torn lose from their moorings. At Sheron, 2 large overhead cranes owned by Sheron Steel Company blown past end of tracks and crashed onto automobiles parked beneath. Damage estimated at $100,000. Storm moved eastward.
SOUTH CAROLINA Entire State	25	2-4 p.m.					4	1	Wind, rain, hail, and electrical	Windstorms and thunderstorms associated with frontal passage across State caused mostly minor damage in numerous locations. Civil Air Patrol hanger at Barnwell destroyed; damage, $37,000 by wind. Storm moved eastward.
VIRGINIA Woodstock to West Virginia line	25	2-4 p.m.					4		Wind	5 barns flattened; 2 large house trailers heavily damaged, 1 beyond repair, and a third blown off its foundation; 300 telephones knocked out of service by falling limbs; TV antennas, roofs, and chimneys suffered most. Storm moved northeastward.
MARYLAND Hagerstown Municipal Airport and vicinity	25	2:30-2:50 p.m.							Wind	Windstorm reported as one of worst in years wrecked roofs, windows, powerlines, and trees around Hagerstown. Allegheny Airlines recorded peak wind of 104 m.p.h., at Hagerstown Airport. Several light planes damaged severely. In Hancock area, some roofs loosened on barns, trees uprooted, etc. Many TV antennas throughout area bent, twisted, or torn loose from moorings.
MARYLAND Carroll and Frederick Counties	25	3:30-3:50 p.m.					5	1	Wind	Strong winds caused widespread minor losses mainly to roofs and to utility lines by falling tree limbs. Peak gusts estimated at 70-75 m.p.h. Peak winds at Fort Detrick were 67 m.p.h.; at Frederick Weather Bureau station, peak winds of 60 m.p.h., reached. Some barns, houses, and TV antennas also damaged.
MARYLAND Kent and Queen Annes Counties	25	4:45-5:10 p.m.					4	1	Wind	Large tree limbs broken, buildings blown down, other damage occurred to roofs, doors, chimneys, powerlines, etc.
NEW YORK Entire State	25	Afternoon			1	10			Wind	High winds with sustained speed of 50-70 m.p.h., and gusts ranging from 60 to 86 m.p.h., swept across State, demolishing, unroofing, and otherwise damaging buildings. Trees uprooted and broken, falling on buildings, automobiles, and utility lines. Uncounted thousands of electric services interrupted, some for as much as 16 hours. Telephone customers suffered from broken lines. A few house trailers overturned. Some radio stations without emergency sources of power forced to suspend operations. Innumerable plate-glass windows blown in, while outdoor signs and open-air-theater screens brought down by wind. Estimated loss of $100,000 reported in Syracuse area, and $20,000 to $30,000 in vicinity of Malone. Man killed in Syracuse when utility pole fell on his automobile. Storm injured 6 persons in Rome, 2 in

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEW YORK (Cont'd)										New York City, and 1 each in Rochester and Amsterdam.
VIRGINIA Jonesville, Lee County	25	Afternoon					4	1	Wind	Combination school auditorium and gymnasium in course of construction partially collapsed when some supports blown about 20 feet away against wall of main building. Storm moved northeastward.
ALABAMA Birmingham, Jefferson County	25	8:25-10 p.m.					3	1	Wind, rain, and electrical	Maximum wind gust 71 m.p.h., at 8:59 p.m., at Birmingham Airport. Apparently same storm did minor damage at Gadsden around 10 p.m.
NEW JERSEY Entire State	25	P.m.					5	4	Wind, rain, electrical, snow, and sleet	Minor general statewide damage. Large store windows, trees, and wires broken. At least 1 large building collapsed. Many roofs partially stripped. Storm moved northeastward.
MARYLAND Worcester County (southern portion)	25						4	1	Wind	Several barns blown down; some TV antennas bent; many tree limbs broken.
OHIO Canton, Akron, and Columbus	25						6		Wind	(General storm situation covered State on this date, with most violent local storms in connection with squall line passage.)
OHIO Orrvile, Wayne County	25				1				Wind	Death caused when garage collapsed by wind.
OHIO Cambridge (near) Guernsey County	25					1			Wind	Woman struck down by flying debris.
OHIO New Baltimore, Hamilton County	25				1				Wind	
	25									Minor storms also reported at Evansville, Ind.; in Harford and Cecil Counties, Md.; in New Castle County, Del.; at Cabool, Kennett, West Plains, and Wyatt, Mo.; at Poteau, Okla.; and at Allardt, Crossville, Gainesboro, Johnson City, Monterey, and in Blount and Knox Counties, Tenn.
TENNESSEE Sumner County	27	3:30 p.m.	15	100	0	4	4	1	Tornado, wind, rain, and hail	Tornado moved northeastward, most damage occurred in triangular sector between Portland, Gallatin, and White House in Sumner County. Communities of Cherry Mound, Corinth, Clear View, New Deal, and Oak Grove damaged. Funnel cloud reported.
GEORGIA Monroe County	27	5 p.m.	1/2	100	0	0	3	1	Tornado and rain	Small tornado moving eastward hit between 2 farmhouses, uprooting several trees in its path and damaging telephone lines.
TENNESSEE Fentress County	27	5:30 p.m.			0	0		1	Tornado	Small tornado struck in Roanoke community, 8 miles south of Jamestown, damaging some buildings and roofs.
	27									Minor storms also reported at Evansville, Ind.; in Edmonson and Jefferson Counties, Ky.; and at Monterey, Tenn.
VIRGINIA Richmond	28	8:40-10 a.m.				2	3		Wind	2 workmen injured when framework of big steel girders bolted to concrete foundation but not yet braced with steel cables collapsed in western suburbs. Some bolts ripped out of foundation and some snapped when structure toppled. 4 large, stone slabs blown off new State office building under construction in Capitol Square; 2 dropping 60 feet, 1 smashing through hoist shanty on ground. Storm moved eastward.
	28									Minor storm also reported in Spencer County, Ky.
DELAYED REPORT										
ALASKA Juneau and Douglas	Jan. 13-14	Late afternoon 13th -all day 14th		*50		1	4	1	Wind	Originated with extensive gradient pattern between high in upper Yukon and low in Gulf of Alaska. Strong gradient from British Columbia to Copper River Valley. Damage $18,000 in Juneau area; $5,000 in Douglas area. Damage mostly to residences; including apartment house.

* Miles instead of yards.
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

FEBRUARY 1956

The most damaging floods during the month occurred on the West Coast and were more or less confined to small tributaries and creeks in the Sacramento Basin in California, the Willamette Basin in Oregon, and in east-central Washington. In Sacramento Canyon above Red Bluff, Calif., rains were heaviest of record at several points with creeks higher than during the December flood. Cache Creek in California exceeded those of December and January and approached the highest stage of record. The crest on the Russian River at Guerneville, Calif., was the second highest since February 1940 and was exceeded only by the crest of December 23, 1955. The flooding in Washington was confined to an area 15 miles wide and 90 miles long extending from Kennewick and Pasco, Wash., toward Spokane.

ST. LAWRENCE DRAINAGE

Moderate to heavy thundershowers during the night of the 24-25th caused light flooding on the Maumee River at Fort Wayne, Ind., on the 26th. No damage resulted.

ATLANTIC SLOPE DRAINAGE

Moderate to heavy precipitation during the first 7 days of the month caused local flooding on the Perkiomen Creek at Graterford, Pa., on the 6th. Local flooding occurred again on this creek on the 18th from the moderate to heavy precipitation on on the 18th.

The light flooding on the Neuse and Cape Fear Rivers between the 7th and 16th was due to moderate to heavy precipitation between the 2d and 7th. Precipitation during that period averaged 2.5 inches over the Neuse and 2.6 inches over the Cape Fear. No damage was reported.

Damages from the flooding on the Broad (6th to 9th) and Santee Rivers (11th to 16th) in South Carolina were negligible. The overflows were due to general moderate rains on the 2d, 3d, 4th, 6th, and 7th. The heaviest rainfall was over the upper reaches of the Broad River where totals of about 4 to 5 inches were recorded for the entire storm period.

EAST GULF OF MEXICO DRAINAGE

Heavy rains from the 2d to the 6th caused minor flooding on the Oostanaula River at Resaca, Ga., and on the Cahaba River at Centreville, Ala. Rainfall averaged 4.5 inches over the Oostanaula River above Resaca and 4.9 inches over the Cahaba River above Centreville during the storm period. Another period of scattered and intermittent rains during the period February 16-20 caused the Oostanaula River to rise to near bankful stage on the 22d.

This same storm caused moderate flooding on the Warrior River in northwestern Alabama and on the Tombigbee River in west-central Alabama during the first half of February. The heaviest rains occurred on the 3d and 4th and averaged about 3 inches over the headwaters. One station, Gainesville, Ala., reported over 5.5 inches in 3 days. Damage from this flood was confined to the river valley south of Tuscaloosa, Ala., on the Warrior, and south of Demopolis on the Tombigbee and consisted mostly of intangibles such as time lost in driving cattle from lowlands and in removing logging equipment from the valleys.

Precipitation over the headwaters of the Pearl, Leaf, and Chickasawhay Rivers in Mississippi during this same period ranged from 4 to 7 inches with the heavier amounts occurring in the vicinity of Pelahatchie and Forest. Flooding of wide extent occurred in the flood plains adjacent to these headwater areas, and downstream in the Pearl River. Most of the damage from these overflows was along the Pearl River.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The flooding on the Pecatonica River at Blanchardville and Martintown, Wis., beginning on the 24th was due to moderate rainfall falling on frozen ground plus some snow melt and ice action. Damages were negligible.

Missouri Basin.--Minor flooding occurred on the Yellowstone River east of Livingston, Mont., from the 17th to the 20th due to an ice jam. No damage was reported.

Snow cover continued to increase during the month in the eastern half of the Dakotas and in Minnesota. There was very little thawing north of a line from Mitchell to Sioux Falls, S. Dak. Snow cover at the close of the month ranged from 10 to 15 inches over the James River Basin and from 6 to 10 inches over the upper part of the Big Sioux drainage. On February 28 and 29, a large-scale thaw developed, melting about all of the snow cover from Phillip, S. Dak., to the Black Hills, and in the western part of Nebraska. This caused minor rises on the upper portions of the Niobrara, the White, the Bad, and Cheyenne Rivers at the end of February and ice jamming began to develop 30 to 60 miles above the mouths of these streams. These streams remained frozen near the mouths at the end of the month. The Missouri River remained frozen at the end of February from around Blair, Nebr., on up stream. Open water was beginning to show up in the Sioux City-Yankton areas. Ice was very hard and heavy from Pierre to beyond Bismarck. At Bismarck, the ice was 41 inches thick on February 27. This is 3 inches thicker than the previous high of 38 inches in 1912.

Record low stages continued on the Marais des Cygnes at Ottawa, Kans., with readings as low as 0.49 foot through February 5.

Ohio Basin.--The light flooding on the Monongahela River on the 3d was due to precipitation averaging 1 to 1.5 inches on the 2d and 3d plus some snow melt.

Frequent precipitation during the month caused the Little Kanawha at Creston, W. Va., to exceed flood stage on the 18th and crest 1 foot above flood stage on the 19th. No damage was reported.

The Scioto and Sandusky Rivers fluctuated considerably during the month and flooded lowlands between the 26th and 29th. During the first 10 days of the month, the mild weather and frequent rains caused the ice in the upper Scioto and Sandusky Rivers to break with some temporary rises due to gorging.

One family, living along Alum Creek, a tributary of the Scioto, was evacuated for a few hours on the night of the 26th when the water level reached the floor of their living quarters.

The minor flooding on the Kentucky River between the 18th and 21st was due to heavy rainfall on the 17th and 18th. The rainfall during the 48-hour period averaged from 3.25 inches in the extreme upper portion to 2 inches in the lower portion. Traffic was stopped for several hours at points where creeks flow into the Kentucky River. Loss of business was reported in Beattyville, Ky., due to inability of people to cross flooded highways and streets. One business in this town moved to escape flood damage. Several basements were flooded in Jackson, Ky., and a small foot bridge was washed away. Operation of city pumps at Frankfort, Ky., was necessary to prevent flooding behind the barrier dam. Interruption of river traffic occurred at Frankfort for about 24 hours with some loss of business.

Flooding occurred on the Salt, Green, Barren, and Rogue Rivers in Kentucky on two different occasions during the month, the first between the 1st and 8th, and the second between the 15th and 29th. Rainfall was particularly heavy over the Green River with runoff amounts up to 7.5 inches resulting in crests up to 13 feet over flood stage at Woodbury. Losses were comparatively small since there were few crops out or stored in the field due to the season of the year. Stock and machinery were moved to higher ground as necessary. There were numerous cases of inconvenience with county roads flooded. A few schools were closed and several factories were unable to operate. It was necessary to suspend construction work on Locks 1 and 2 on the Green River due to high water practically the entire month.

The minor flooding on the Wabash and White Rivers in Indiana during the month was due to heavy precipitation and snow melt. Precipitation on the 1st and 2d averaged about 1.25 to 1.50 inches over the lower portions and less than 0.50 inch over the upper portions. Precipitation over the upper portion was in the form of snow. Precipitation occurred again during the middle of the month and again on the 23d, 24th, and 25th. Wide areas of bottom land were flooded and as the month ended rivers were still rising at many points, particularly the lower reaches of the Wabash and White Rivers. Few, if any, homes or other buildings were actually flooded. A number of minor state roads were closed for several days.

Heavy precipitation (5.25 inches) from the 15th to the 20th resulted in flood conditions on the Cumberland River from the 18th to the 23d. Rural roads and lowlying farm lands near or adjacent to the river at Williamsburg, Ky., were flooded. At Clarksville, Tenn., there was some flooding of the river road and nearby fields making it necessary to remove livestock, and several families living near the river were forced to vacate.

Minor flooding occurred on some of the uncontrolled tributaries of the Tennessee River during the month as well as below some of the main river dams, particularly in the areas below Guntersville, Pickwick, and Kentucky Dams from the heavy rain between the 1st and 4th and the 10th and 18th. Flooding below the main river dams was restricted to agricultural lowlands with no damage reported. The most serious flooding on the uncontrolled tributaries occurred on the Duck River at Columbia, Tenn., and the Elk River at Fayetteville, Tenn.; however, the flood stages reached at these points were relatively low compared to other floods of recent years.

Pronounced rises occurred along the main stem of the Ohio during the month, but flood stages were confined to the reach from Louisville downstream during the last 10 days, due to the larger flows from the southern tributaries. Flood crests on the lower Ohio exceeded flood stage at Louisville by 0.1 foot; at Dam 45, by 2.5 feet; at Evansville, by 0.8 foot; and at Dam 50, by 13.8 feet. At Dam 50, the river has remained above flood stage since February 5 and continued so into March.

White Basin.--General moderate to heavy rains from January 29 through February 3 and from the 15th to the 18th caused minor flooding on the lower White, Black, and Little Red Rivers in Arkansas. Damage from these overflows was negligible, except for some inconvenience due to closed highways.

Red Basin.--A flash flood, resulting from an excessively heavy local rain at Hot Springs National Park, Ark., on the morning of the 15th, caused an estimated property damage of $250,000, and one death. A total of 5.54 inches of rain fell in about 5 hours with the greater portion falling in a 2-hour period. This storm was extremely localized, with surrounding stations, some within a radius of 7 miles, reporting amounts of less than 1/4 inch for the same period. This storm was not as severe as the one that gave 9.01 inches during a 4-hour period on May 14, 1923. Damage due to this flooding was not extensive in that it did not seriously affect real property or public utilities. Losses were generally confined to stock and supplies in business establishments in the downtown district. Many parked automobiles were moved and damaged by the surging waters. Only one small highway bridge, about a mile east of the city, was washed out.

Minor flooding occurred on the Caddo, Ouachita, Little, and Sulphur Rivers from the moderate to heavy rains from January 29 through February 3 and from the 15th through the 18th. The Little River flooded only during the latter period. Little or no damage resulted from any of these floods since the areas flooded were mostly pasture land.

Lower Mississippi Basin.--The moderate to heavy rains over the St. Francis Basin on the 16th, 17th, and 18th resulted in minor flooding at Fisk, Mo., and St. Francis, Ark. Overflow was confined to areas inside local levees in the Fisk - St. Francis area covering approximately 40,000 acres, mostly in Arkansas. Damage was small and the slight overflow may prove to be beneficial as the lowlands were very dry and the water may help greatly when spring growth starts.

Heavy rains during the first week of the month and again about the middle of the month caused the Coldwater, Tallahatchie, and Yazoo Rivers in the Mississippi to rise above flood stage. The latter two rivers were still in flood as the month ended. Resulting damage is believed to be minor.

WEST GULF OF MEXICO DRAINAGE

Minor flooding occurred on the Calcasieu River and Nezpique Bayou in Louisiana and on the lower Sabine between the 6th and 17th from rains during the first half of the month which was especially heavy on the 3d and 9th. Damages were insignificant.

PACIFIC SLOPE DRAINAGE

Heavy rain between the 19th and 23d caused overflows in streams in the Sacramento River Basin between the 21st and 29th. Rainfall amounts reported at several stations during this period ranged up to 19 inches. The snow line remained at fairly high levels during the first several days, dropping below the 4 thousand-foot level on the 23d with the passage of the last storm front of the series. The rise in the upper Sacramento was very sharp, rising to above flood stage on the 22d. In the Sacramento Canyon above Red Bluff, the rains were reported to be the heaviest of record at several points while local interests reported creeks higher than during the December flood. On the Sacramento

River below Red Bluff, the river remained below flood stage. However, the rise brought renewed overflow to Moulton Weir into Butte Basin and the overflow depths were increased at Tisdale, Colusa, and Fremont Weirs. Overflow had been occurring at these weirs since the January high water.

There was minor flooding along the lower portions of a number of smaller creeks and streams. The worst such flooding occurred along lower Cache Creek. Very heavy rains were reported in the upper part of this basin with Hoberg's Resort, Calif., measuring more than 19 inches of rain from the 19th to the 23d. These rains brought rises to Cache Creek that exceeded those of December and January and approached the highest stage of record.

The flooding on the Russian River between the 21st and 24th was the 5th time during the 1955-56 winter season that the Russian River had gone out of its banks. The crest of 39.9 feet observed at Guerneville on the early morning of the 23d was the second highest crest since February 28, 1940, when a stage of 46.87 feet was recorded. This stage was exceeded on December 23, 1955, when a crest of 47.62 feet was observed. Of the four highest stages recorded in the past 16 years, three have occurred during the present season. The crest of 21.1 feet observed at Healdsburg on February 22 was not particularly significant when compared with flood marks of recent years. At Hopland, the northernmost gaging station in the basin, the river crested slightly below flood stage. There were a number of forced evacuations of families in the Russian River lowlands and considerable precautionary evacuation in the Guerneville area. Roads and some lowland areas were flooded in the Napa Valley from a combination of heavy rain and tidal effects. The rainfall over the Russian River ranged from 5.3 inches at Santa Rosa to 10.32 inches at Guerneville, Calif., with an average of 7.1 inches during the period from the 19th to the 23d. In the Napa River Basin, the rain ranged from 3.6 inches at Napa to 14.99 inches at Middletown.

The flooding in the Eel and Smith River Basins was due to the moderate to heavy rains between the 19th and 23d. The heaviest rain fell over the extreme southern part of the Eel Basin. Dos Rios measured over 15 inches in the 3 days from the 20th to the 22d.

A small section of the Rogue River from just west of Medford to Grants Pass, Oreg., was in flood on the 21st. The unusual feature of this flood was the extensive erosion and inundation throughout the area by veritable sheets of water coming down the mountains from 3,000 feet m.s.l. or lower. Overtaxed or plugged culverts inundated property that had never been inundated before. In Grants Pass and vicinity, local runoff was so heavy that sandbagging was employed to reduce damage in many homes and business establishments. One residential section south of town was inundated nearly to the house eaves because local runoff was unable to reach the main river through inadequate culverts under Highway 99.

Columbia Basin.--Heavy rainfall on the 20-21st produced moderate to substantial rises in streams in the Willamette Basin and in east-central Washington. The rapid concentration of water due to heavy rainfall accompanied by "Chinook" winds on an unseasonal snow cover over frozen ground caused otherwise dry coulees or depressions to become rapidly rising rivers. There was no flooding west of the Cascades. There were three fatalities attributed to the sudden storm. Damages were considered heaviest to railroads and highways, although the towns of Mesa and Connell were hard hit. Water was reported as 3 feet deep in the streets of Mesa. A few families were evacuated from their homes at Kennewick and Connell.

FLOOD STAGE DATA

Table 5

(All dates in February unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
	Ft.			Ft.	
ST. LAWRENCE DRAINAGE Lake Erie					
St. Joseph: Montpelier, Ohio	10	26	Mar. 1	14.5	27
Maumee: Fort. Wayne, Ind.	15	26	26	15.4	26
ATLANTIC SLOPE DRAINAGE					
Perkiomen Creek: Graterford, Pa.	8	6 18	6 18	9.4 9.3	6 18
Neuse:					
Neuse, N. C.	14	7	9	**15.0	9
Smithfield, N. C.	13	7	11	16.5	10
Goldsboro, N. C.	14	12	16	**15.9	15
Cape Fear: Lock No. 2, Elizabethtown, N. C.	20	7	11	26.3	9
Broad: Blairs, S. C.	14	6 21	9 21	18.2 14.2	7 21
Santee: Rimini, S. C.	12	11 25	16 29	14.8 ----	13 -
EAST GULF OF MEXICO DRAINAGE					
Oostanaula: Resaca, Ga.	22	8	8	22.0	8
Cahaba: Centreville, Ala.	23	5	5	26.1	5
Black Warrior:					
Tuscaloosa Lock & Dam, Ala.	47	[illegible]	7	54.4	5
Tombigbee:					
Lock No. 4, Demopolis, Ala.	39	6	27	54.2	11
Lock No. 3, Whitfield, Ala.	33	5	Mar. 2	53.3	12
Lock No. 2, Pennington, Ala.	46	7	28	54.1	13
Lock No. 1, Jackson, Ala.	31	9	Mar. 3	35.8	16
Chickasawhay: Enterprise, Miss.	20	5	8	26.6	6
Bogue Chitto: Franklinton, La.	11	4	5	11.7	5
Pearl:					
Edinburg, Miss.	20	5	12	24.4	8
Jackson, Miss.	18	4	1/	30.7	14
Monticello, Miss.	15	4	25	20.0	19
Columbia, Miss.	17	5 16 20	14 18 25	18.0 18.1 18.8	11 18 21
Bogalusa, La.	15	4	1/	19.2	12-13
Pearl River, La.	12	7	1/	15.3	10
MISSISSIPPI SYSTEM Upper Mississippi Basin					
East Branch: Blanchardville, Wis.	7	25	26	11.75	25
Pecatonica: Martintown, Wis.	8	24	1/	11.9	29
Ohio Basin					
Monongahela:					
Lock No. 5, Brownsville, Pa.	23	3	3	23.1	3
Lock No. 4, Charleroi, Pa.	24	3	3	26.0	3
McKeesport, Pa.	12	3	3	12.2	3
Lock No. 2, Braddock, Pa.	26	3	3	27.0	3
Little Kanawha: Creston, W. Va.	20	18	19	E21.0	19
Paint Creek:					
Bourneville, Ohio	10	2 15 18 25	2 15 18 25	10.8 11.9 12.3 12.3	2 15 18 25
Sandusky: Upper Sandusky, Ohio	13	26	26	13.5	26
Scioto: La Rue, Ohio	11	26	27	**12.7	26
Prospect, Ohio	10	28	28	10.2	28
Circleville, Ohio	14	27	28	15.3	27
Piketon, Ohio	16	19 28	19 29	**17.9 **17.0	19 29
North Fork:					
Hazard, Ky.	20	18	18	24.0	18
Jackson, Ky.	29	18	19	36.0	19
Kentucky:					
Lock No. 10, Ford, Ky.	25	20	21	26.2	20
Lock No. 4, Frankfort, Ky.	31	19	19	31.7	19
Salt:					
Boston, Ky.	40	2 18	6 21	**42.3 **42.4	4 20
Taylorsville, Ky.	24	2 15	2 15	24.7 24.1	2 15
MISSISSIPPI SYSTEM (Cont'd.) Ohio Basin (Cont'd.)					
Barren: Bowling Green, Ky.	28	— 16	6 21	35.4 36.5	1 20
Rough: Dundee, Ky.	25	- 16	8 23	28.2 27.9	4 19
Green:					
Munfordville, Ky.	28	— 18	7 22	37.1 39.0	3 20
Lock No. 6, Brownsville, Ky	28	- 17	9 23	40.0 39.3	4 21
Lock No. 4, Woodbury, Ky.	33	- 17	11 29	46.2 45.8	6 22
Lock No. 2, Rumsey, Ky.	34	2	1/	43.4	27
East Fork: Seymour, Ind.	14	28	28	14.0	29
White:					
Muncie, Ind.	6	26	26	7.9	26
Anderson, Ind.	10	26	27	13.6	-
Spencer, Ind.	14	26	1/	17.6	27
Elliston, Ind.	18	26	1/	23.0	28
Edwardsport, Ind.	12	4 13 17	5 14 1/	13.4 12.2	4 13 -
Petersburg, Ind.	16	5	5	16.4	5
Hazleton, Ind.	16	19	1/	----	--
Wabash:					
Wabash, Ind.	12	19 25	19 27	12.8 18.6	19 25
Lafayette, Ind.	11	19 26	21 1/	13.2 16.7	20 27
Covington, Ind.	16	27	1/	----	-
Montezuma, Ind.	14	18 26	22 1/	15.4 17.4	20 27
Terre Haute, Ind.	14	26	1/	15.5	27-28
Mt. Carmel, Ill.	17	26	1/	----	
Cumberland:					
Williamsburg, Ky.	21	18	22	25.8	20
Nashville, Tenn.	40	19	20	42.6	19
Clarksville, Tenn.	46	18	23	51.3	20
Lock F, Eddyville, Ky.	50	1	1	55.5	5
First Creek: Knoxville, Tenn (Fifth Ave.)	5	3 17	4 18	6.4 5.8	3 18
Knoxville, Tenn. (Mineral Springs)	6	3	3	6.2	3
South Chicamauga Creek: Chickamauga (nr), Tenn.	10	2 18 20	7 19 21	14.3 10.3 11.1	4 18 21
Elk: Fayetteville, Tenn.	659	3 17	7 19	664.2 662.3	4 18
Fayetteville (nr), Tenn.	18	3 18	6 20	21.45 19.6	4 19
Duck:					
Columbia, Tenn.	32	4 18	6 19	33.4 34.5	6 18
Shelbyville, Tenn.	719	3	4	720.4	4
Shelbyville (nr), Tenn	21	4	5	21.6	4
Tennessee:					
Whitesburg, Ala.	560	3 20	9 22	568.8 561.7	6 21
Florence, Ala.	419	3	9	423.4	5
Savannah, Tenn.	380	4	9	383.3	7
Gilbertsville, Ky.	320	2	29	331.8	9
Ohio: Dam 41,					
Louisville, Ky. (Upper gage)	28	21	23	28.5	23
Dam 41, Louisville, Ky (lwr gage)	55	22	23	**55.1	23
Dam 44, Leavenworth, Ind.	53	19	27	**56.6	23
Dam 45, Addison, Ky.	47	19	27	**49.5	24
Tell City, Ind.	38	18	29	43.1	24-25
Dam 46, Owensboro, Ky	41	21	28	42.3	25
Dam 47, Newburgh, Ind.	38	5	1/	45.0	25
Evansville, Ind.	42	22	28	42.8	26

FLOOD STAGE DATA

Table 5-Continued

(All dates in February unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM (Cont'd.)					
Ohio Basin (Cont'd.)					
Ohio:					
Dam 48, Cypress, Ind.	38	7	1/	44.9	25
Mt. Vernon, Ind.	35	7	1/	42.6	27
Dam 49, Uniontown, Ky.	37	10	1/	44.5	28
Shawneetown, Ill.	33	6	1/	44.8	28
Dam 50, Fords Ferry, Ky.	34	5	1/	47.8	27
Dam 51, Golconda, Ill.	40	19	1/	44.8	27-28
Paducah, Ky.	39	19	1/	42.9	26-27
Dam 52, Brookport, Ill.	37	5	1/	44.6	26
Dam 53, Mound City, Ill.	42	7	1/	47.7	27
Cairo, Ill.	40	19	1/	43.6	27
White Basin					
Black: Black Rock, Ark.	14	18	21	17.6	19
Little Red:					
Heber Springs, Ark.	24	2 18	3 18	30.5 30.9	2 18
Judsonia, Ark.	30	2 18	5 21	34.0 35.6	4 19
White:					
Augusta, Ark.	32	21	21	32.0	21
Georgetown, Ark.	21	20 26	24 26	22.8 21.3	22 26
Des Arc, Ark.	24	21	27	25.5	23
Clarendon, Ark.	26	9	1/	29.0	25
St. Charles, Ark.	25	13	1/	26.8	28
Red Basin					
Caddo: Glenwood, Ark.	10	2 17	5 20	11.3 11.9	4 18
Ouachita:					
Arkadelphia, Ark.	17	3 9 18	3 9 19	18.85 17.95 19.1	3 9 18
Camden, Ark.	26	6 11 20	7 14 25	26.95 28.2 29.2	6 12 22
Little: Whitecliffs, Ark.	25	21	22	25.7	21
Sulphur: Naples, Tex.	22	7 21	10 26	22.9 27.3	8 22

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM (Cont'd.)					
Lower Mississippi Basin					
St. Francis:					
Fisk, Mo.	20	19	24	22.3	21
St. Francis, Ark.	18	24	29	18.7	26
Coldwater: Sarah, Miss.	18	3 18	4 19	21.2 20.65	3 18
Tallahatchie: Swan Lake, Miss.	26	5	1/	28.3	10
Yazoo: Yazoo City, Miss.	29	20	1/	30.0	20
Mississippi: Caruthersville, Mo.	32	28	29	32.1	28-29
WEST GULF OF MEXICO DRAINAGE					
Nezpique Bayou: Basile, La.	22	10	11	22.0	10
Calcasieu:					
Kinder, La.	16	13	14	16.9	13
Hecker, La.	6	6	17	7.1	15
Old Town Bay, La.	4	9	9	4.0	9
Sabine: Deweyville, Tex.	14	12	14	14.5	12
PACIFIC SLOPE DRAINAGE					
Sacramento:					
Red Bluff, Calif.	23	22	22	23.4	22
Colusa Weir, Calif.	61.8	1 21	4 29	64.2 68.1	1 24
Tisdale Weir, Calif.	45.5	1 22	8 29	48.4 50.0	1 24
Fremont Weir, Calif.	33.8	1 23	8 29	35.8 36.9	1 25
Russian:					
Healdsburg, Calif.	19	22	22	21.1	22
Guerneville, Calif.	29	21	24	39.9	23
Smith: Fort Dick, Calif.	30.5	21	21	32.9	21
Eel: Fernbridge, Calif.	17.5	21	23	22.7	21
Rogue:					
Raygold, Oreg.	10.5	21	21	13.4	21
Grants Pass, Oreg.	17	21	21	17.9	21

E Estimated
* Provisional
** Highest stage reported but not necessarily the crest
1/ Continued at end of month

RAWINSONDE DATA

Average monthly values

Table 20

ALBANY, N. Y. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	86	- 3.2	74	290	2.4
1,000	28	127			290	4.2
950	28	536	- 4.3	70	286	6.8
900	28	957	- 6.1	70	289	8.5
850	28	1,403	- 7.5	65	291	10.0
800	28	1,874	- 8.5	64	285	11.2
750	28	2,378	9.8	56	270	12.7
700	28	2,904	-11.8	55	277	15.9
650	28	3,475	-14.7	53	271	20.2
600	28	4,070	-18.1	48	272	22.0
550	28	4,718	-22.0	44	270	24.9
500	28	5,410	-26.4		270	28.3
450	28	6,171	-31.6		271	31.8
400	28	6,987	-36.8		271	36.6
350	27	7,891	-42.9		273	39.1
300	26	8,925	-48.3		268	44.4
250	26	10,111	-52.8		269	44.5
200	25	11,536	-54.6		271	40.1
175	24	12,389	-53.7		266	30.6
150	24	13,377	-54.5		261	27.4
125	21	14,540	-55.4			
100	19	15,950	-56.7			
80	18	17,360	-57.2			
60	16	19,180	-57.0			
50	13	20,339	-57.1			
40	12	21,757	-56.9			
30	8	23,598	-56.6			
20						

ALBUQUERQUE, N. MEX. (835 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,619	2.5	44	113	0.4
1,000	29	132				
950	29	559				
900	29	1,006				
850	29	1,475				
800	29	1,967	1.5	41	290	3.0
750	29	2,489	1.8	40	284	6.2
700	29	3,028	5.7	43	282	8.3
650	29	3,608	- 9.8	44	283	9.6
600	29	4,217	-13.8	42	285	10.4
550	29	4,875	-17.9	39	284	12.3
500	29	5,578	-22.5		280	11.3
450	28	6,352	-28.2		279	12.1
400	28	7,177	-34.0		279	15.3
350	28	8,100	-40.4			
300	28	9,135	-46.5			
250	28	10,328	-52.2			
200	27	11,766	-54.9			
175	27	12,619	-55.0			
150	27	13,600	-56.6			
125	26	14,744	-59.2			
100	24	16,129	-62.0			
80	21	17,505	-60.6			
60	21	19,305	-58.6			
50	19	20,451	-57.2			
40	18	21,864	-56.3			
30	16	23,696	-55.5			
20	5	26,267	-53.6			

ANCHORAGE, ALASKA (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	30	[illegible]	58	20	2.2
1,000	29	57			24	2.2
950	29	456	-10.1	60	23	1.8
900	29	869	-11.1	60	56	1.2
850	29	1,306	-13.1	60	339	.7
800	29	1,766	-14.6	62	261	1.3
750	29	2,262	-16.5	61	265	1.9
700	29	2,769	-18.8	57	277	4.6
650	29	3,328	-21.4	55	261	5.4
600	29	3,904	-24.6	53	260	7.5
550	29	4,536	-28.5	51	260	9.8
500	[illegible]	5,208	-32.6	52	280	12.2
450	28	5,951	-37.0		266	13.4
400	27	6,759	-41.4		266	16.7
350	27	7,654	-46.7		268	16.1
300	26	8,674	-51.0		252	16.1
250	26	9,853	-52.5		250	17.7
200	24	11,297	-48.4			
175	24	12,176	-48.0			
150	21	13,193	-48.3			
125	19	14,383	-49.3			
100	15	15,861	-48.9			
80	9	17,342	-48.2			
60	5	19,212	-47.0			
50						
40						
30						
20						

ANNETTE, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	37	[illegible]	75	[illegible]	1.7
1,000	29	93			18	3.0
950	29	505	- 3.5	72	[illegible]	2.5
900	29	925	- 6.3	74	244	1.9
850	29	1,370	- 8.8	73	244	3.0
800	29	1,838	-10.4	66	272	4.9
750	29	2,340	-12.8	61	264	5.4
700	29	2,856	-15.5	[illegible]	[illegible]	6.3
650	29	3,421	[illegible]	51	283	[illegible]
600	29	4,005	-22.0	49	279	9.2
550	29	4,646	-26.0	46	279	[illegible]
500	28	5,316	-30.6	44	278	8.3
450	28	6,064	-35.4		292	8.6
400	28	6,869	-40.6		[illegible]	8.2
350	28	7,767	-45.9		312	[illegible]
300	28	8,780	-50.6		293	11.0
250	28	9,961	-52.1			
200	28	11,405	-51.7			
175	28	12,274	-50.1			
150	28	13,280	-49.7			
125	28	14,473	-49.6			
100	27	15,929	-49.7			
80	27	17,386	-49.7			
60	27	19,266	-50.1			
50	25	20,456	-50.3			
40	22	21,915	-49.9			
30	13	23,820	-49.9			
20						

ATHENS, GA. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	246	8.9	[illegible]	330	0.4
1,000	29	153				
950	29	[illegible]	10.6	62	222	2.3
900	29	1,030	9.1	60	237	6.1
850	29	1,502	7.0	54	[illegible]	[illegible]
800	29	1,999	4.9	52	253	11.1
750	29	2,530	2.2	52	263	[illegible]
700	29	3,078	[illegible]	49	[illegible]	[illegible]
650	[illegible]	3,671	[illegible]	44	265	19.1
600	[illegible]	4,295	[illegible]	36	264	22.4
550	[illegible]	[illegible]	-11.8	[illegible]	[illegible]	[illegible]
500	[illegible]	5,685	-16.9		260	25.4
450	[illegible]	6,481	-22.6		261	27.5
400	[illegible]	7,322	-28.5	40	260	31.4
350	[illegible]	8,263	-35.5	45	260	[illegible]
300	[illegible]	9,318	-43.0		260	38.4
250	[illegible]	10,523	-51.4		[illegible]	43.4
200	27	11,946	-56.2		263	[illegible]
175	26	12,802	-56.8		263	43.3
150	26	13,775	-58.8		262	41.7
125	24	14,904	-62.2		262	35.3
100	[illegible]	16,263	-65.0		[illegible]	31.5
80	17	[illegible]	-65.2		261	22.3
60	14	19,362	-60.3		275	12.2
50	13	20,498	-58.9		269	7.7
40	[illegible]	[illegible]	-57.8		279	3.4
30	12	23,725	-56.1		[illegible]	3.0
20	6	[illegible]	-54.4			

BARROW, ALASKA (1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	8	-32.5		273	0.8
1,000	29	147	-29.7	63	298	1.9
950	29	524	-25.8	68	337	2.9
900	29	909	-24.2	68	330	2.9
850	29	1,326	-23.6	64	334	3.2
800	29	1,768	-23.9	58	337	3.9
750	29	2,249	-24.7	49	330	4.7
700	29	2,739	-26.5	45	321	5.5
650	29	3,282	-29.2	43	320	6.0
600	29	3,839	-32.0	42	315	7.2
550	28	4,459	-35.0		312	8.1
500	28	5,107	-39.0		314	8.5
450	28	5,835	-43.4		313	9.6
400	27	6,613	-47.8		313	8.7
350	27	7,483	-52.7		306	9.0
300	25	8,471	-55.2		291	10.1
250	22	9,631	-54.4		278	12.0
200	21	11,067	-51.9		274	15.3
175	20	11,941	-51.1		274	17.4
150	20	12,942	-51.0		270	20.5
125	19	14,123	-50.6		270	22.6
100	17	15,574	-50.2		267	24.7
80	14	17,014	-51.0			
60	11	18,913	-51.0			
50	8	20,100	-51.0			
40	5	21,500	-51.4			
30						
20						
15						

BETHEL, ALASKA (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	4	-15.3	80	10	1.8
1,000	29	95			6	2.7
950	29	490	-12.6	68	27	2.5
900	29	898	-12.0	62	354	3.4
850	29	1,335	-12.3	60	332	4.5
800	29	1,797	-13.5	55	324	4.6
750	29	2,291	-15.2	53	319	6.1
700	29	2,806	-16.9	51	303	7.2
650	29	3,364	-19.8	48	293	7.9
600	29	3,949	-23.1	44	290	9.0
550	29	4,584	-26.9	41	293	11.0
500	29	5,263	-30.8		289	12.5
450	29	6,006	-35.6		281	13.6
400	29	6,814	-40.8		274	13.9
350	29	7,711	-46.6		267	13.3
300	28	8,723	-51.5		268	14.7
250	28	9,901	-51.9		270	14.9
200	27	11,351	-48.7		249	13.6
175	25	12,228	-48.5		262	12.9
150	24	13,243	-48.3		260	11.1
125	24	14,442	-48.6		264	11.4
100	22	15,909	-49.7			
80	20	17,365	-49.3			
60	18	19,257	-48.8			
50	17	20,455	-49.2			
40	12	21,928	-49.8			
30	7	23,825	-50.1			
20						
15						

BISMARCK, N. DAK. (955 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	505	-12.8	80	202	0.4
1,000	29	148				
950	29	551			247	.8
900	29	963	- 8.4	69	288	4.5
850	29	1,407	- 7.6	63	293	6.7
800	29	1,878	- 8.1	56	295	[illegible]
750	29	2,381	-10.9	54	290	10.2
700	29	2,903	-14.1	52	290	11.4
650	29	3,468	-17.4	48	291	13.0
600	29	4,057	-21.1	50	289	13.8
550	29	4,697	-25.2	45	288	13.9
500	28	5,373	-30.5	41	287	15.5
450	28	[illegible]	-35.9		282	17.7
400	28	6,921	-41.7		278	20.6
350	28	7,814	-47.7		276	21.5
300	28	8,820	-52.2		295	16.6
250	28	9,994	-53.6		297	17.2
200	28	11,432	-51.4			
175	28	12,301	-50.5			
150	27	13,300	-50.4			
125	27	14,487	-51.2			
100	27	15,933	-52.4			
80	27	17,373	[illegible]			
60	25	19,227	-52.8			
50	24	20,407	-52.4			
40	19	[illegible]	-53.5			
30	14	23,691	-53.4			
20						
15						

BOISE, IDAHO (918 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	[illegible]	- 3.4	70	141	2.1
1,000	29	[illegible]				
950	29	590				
900	29	1,020	[illegible]	61	171	1.6
850	29	1,472	- 4.0	55	[illegible]	2.2
800	29	1,949	- 5.5	52	[illegible]	4.5
750	29	2,459	- 8.1	53	269	6.3
700	29	2,986	-11.4	52	277	7.6
650	29	3,559	-14.9	57	286	9.2
600	29	4,152	-18.7	56	303	11.3
550	29	4,800	-22.8	53	311	12.0
500	29	5,488	-27.3	52	317	13.1
450	28	6,245	-32.7		314	[illegible]
400	28	7,059	-38.2		303	[illegible]
350	28	7,965	-44.3		288	16.6
300	28	8,983	-50.7		302	18.4
250	28	10,156	-55.0			
200	28	11,575	-55.8			
175	28	12,429	-53.7			
150	28	13,420	-53.4			
125	28	14,591	-54.0			
100	27	16,017	-55.2			
80	27	17,437	-56.0			
60	26	19,268	-55.1			
50	26	[illegible]	-54.5			
40	26	[illegible]	-54.1			
30	12	23,694	-54.1			
20						
15						

BROWNSVILLE, TEX. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	7	17.2	84	[illegible]	2.5
1,000	29	128	17.8	79	121	3.3
950	29	570	16.1	75	148	5.6
900	[illegible]	1,026	15.3	64	154	4.3
850	[illegible]	1,510	14.7	51	[illegible]	[illegible]
800	29	2,021	13.2	[illegible]	212	[illegible]
750	29	2,568	10.3	32	240	6.9
700	29	3,132	7.0	[illegible]	245	9.9
650	29	3,742	2.7	[illegible]	[illegible]	[illegible]
600	28	4,376	- 2.3	[illegible]	257	14.4
550	28	5,065	- 6.8	36	256	16.3
500	28	5,797	-12.1	34	256	18.3
450	[illegible]	6,603	-17.9	35	266	17.9
400	28	7,464	-24.6		268	19.2
350	27	8,424	-31.7		267	[illegible]
300	27	9,494	-40.4		263	26.5
250	[illegible]	10,706	-49.2			
200	26	12,145	-56.1			
175	26	12,988	-58.1			
150	26	13,952	-61.2			
125	25	15,068	-66.6			
100	23	16,400	-71.7			
80	21	17,708	-73.5			
60	19	19,404	-67.1			
50	19	20,516	-62.6			
40	[illegible]	21,901	-59.6			
30	17	[illegible]	-56.2			
20	10	26,300	-52.6			
15	5	28,175	-50.9			

BUFFALO, N. Y. (994 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	182	- 2.7	83	258	2.5
1,000	29	132				
950	29	539	- 4.1	76	254	6.0
900	29	963	- 6.0	75	260	8.5
850	29	1,409	- 6.8	67	270	9.7
800	29	1,881	- 8.4	61	276	11.0
750	29	2,382	-10.8	59	272	13.1
700	29	2,907	-13.1	58	273	15.6
650	29	3,474	-15.7	58	270	18.2
600	29	4,069	18.9	54	271	19.6
550	29	4,714	-23.2	54	270	22.0
500	29	5,402	-27.6	51	269	24.2
450	29	6,158	-32.7	50	271	25.4
400	29	6,973	-37.8		267	27.2
350	29	7,882	-43.2		267	30.3
300	29	8,905	-48.9		268	34.4
250	29	10,088	-53.2		275	28.0
200	29	11,516	-54.3		279	25.2
175	28	12,379	-54.0			
150	25	13,374	-54.7			
125	25	14,535	-56.2			
100	24	15,951	-56.9			
80	22	17,367	57.7			
60	21	19,186	-56.9			
50	20	20,334	-56.9			
40	18	21,733	-57.0			
30	14	23,553	-56.4			
20	6	26,170	-54.8			
15						

BURRWOOD, LA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	3	16.0	89	107	1.3
1,000	29	150	17.0	80	130	1.8
950	29	590	15.1	71	195	3.5
900	29	1,043	13.4	64	204	5.3
850	29	1,523	10.9	58	224	5.3
800	29	2,027	9.6	44	239	7.1
750	29	2,569	7.1	43	245	9.5
700	29	3,125	4.1	39	252	11.2
650	29	3,729	.9	32	260	12.9
600	29	4,362	- 3.3		262	15.2
550	29	5,044	- 8.0	34	256	16.0
500	29	5,777	-13.3	33	262	17.0
450	28	6,578	-19.0		258	18.8
400	27	7,436	-25.3		264	20.9
350	27	8,390	-32.8		266	22.0
300	26	9,454	-41.5			
250	26	10,663	-51.0			
200	25	12,083	-58.4			
175	25	12,920	-59.2			
150	25	13,878	-62.3			
125	24	14,993	-66.0			
100	22	16,341	-71.3			
80	16	17,653	-73.2			
60	16	19,356	-67.2			
50	16	20,463	-64.2			
40	14	21,835	-62.1			
30	10	23,620	-59.5			
20	6	26,152	-57.0			
15	5	27,974	-54.8			

CARIBOU, ME. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	191	-10.0	71	285	2.4
1,000	29	[illegible]				
950	29	503	- 9.5	[illegible]	289	6.1
900	29	916	-11.1	65	298	7.6
850	29	[illegible]	-12.2	62	296	8.3
800	29	1,815	-13.8	59	291	8.7
750	29	2,308	-14.7	53	289	10.3
700	29	2,824	-16.4	49	287	12.7
650	29	3,386	-19.1	50	[illegible]	14.8
600	28	3,973	-22.4	[illegible]	[illegible]	16.7
550	28	4,613	-26.0	46	279	[illegible]
500	27	5,287	-30.7	47	277	20.5
450	27	6,034	-35.7		278	22.4
400	27	6,836	-41.2		[illegible]	21.8
350	27	7,732	-46.4		277	29.7
300	27	[illegible]	-50.8		272	32.0
250	27	9,924	-52.4		276	31.9
200	27	11,367	-51.4		273	[illegible]
175	27	12,235	-51.1		[illegible]	30.2
150	24	13,232	-51.6		271	24.9
125	22	14,412	-52.5		266	22.6
100	22	15,848	-53.5		265	23.7
80	21	17,272	-54.4		268	16.7
60	21	19,108	-55.9		271	14.6
50	19	20,274	-55.3		273	12.5
40	16	21,694	-56.4		[illegible]	13.5
30	12	23,563	-56.4		296	9.0
20	5	26,174	-57.1			
15						

CHARLESTON, S. C. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	[illegible]	12.2	[illegible]	187	1.2
1,000	29	161	14.3	73	[illegible]	2.6
950	29	597	13.0	67	225	[illegible]
900	29	1,047	10.7	[illegible]	239	7.2
850	29	1,521	8.6	55	247	8.5
800	29	2,020	6.2	49	261	9.7
750	29	2,555	3.4	49	[illegible]	11.7
700	29	3,104	.6	46	269	15.1
650	29	3,700	- 2.7	43	266	16.2
600	29	4,326	- 6.4	39	260	[illegible]
550	29	5,001	-10.9	39	[illegible]	19.3
500	29	5,727	-15.4	[illegible]	262	22.6
450	[illegible]	6,520	-20.9	[illegible]	266	22.8
400	29	7,375	-27.1	36	269	22.4
350	29	8,324	-34.2	37	270	25.1
300	[illegible]	9,379	-42.6		273	28.4
250	[illegible]	10,586	-51.4			
200	28	12,012	-56.6			
175	27	12,870	-57.4			
150	25	13,835	-59.5			
125	24	14,961	-63.7			
100	19	16,311	-67.6			
80	17	17,640	-67.9			
60	14	19,393	-62.8			
50	13	20,522	-61.6			
40	13	[illegible]	-59.0			
30	10	23,726	-57.3			
20	5	26,294	-55.3			
15						

COLD BAY, ALASKA (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	29	- 3.0	[illegible]	152	1.1
1,000	29	[illegible]			197	1.4
950	29	[illegible]	[illegible]	73	213	2.7
900	29	918	- 5.0	69	242	[illegible]
850	29	1,366	[illegible]	[illegible]	265	[illegible]
800	29	1,839	- 7.4	[illegible]	279	[illegible]
750	29	2,346	- 9.7	60	290	8.1
700	29	2,870	-12.1	[illegible]	256	13.4
650	[illegible]	3,442	[illegible]	54	236	13.3
600	[illegible]	4,035	-18.0	[illegible]	251	[illegible]
550	[illegible]	4,682	-21.9	50	240	[illegible]
500	[illegible]	5,375	-26.6	[illegible]	242	[illegible]
450	[illegible]	[illegible]	-31.9	51	235	[illegible]
400	[illegible]	[illegible]	-37.7		[illegible]	10.2
350	[illegible]	7,856	-44.3			
300	29	8,875	-50.4			
250	[illegible]	[illegible]	-54.7			
200	28	[illegible]	-52.5			
175	28	[illegible]	-50.6			
150	[illegible]	13,366	-50.1			
125	[illegible]	14,570	-51.2			
100	21	16,017	-52.0			
80	18	17,477	-52.1			
60	[illegible]	19,365	-50.6			
50	[illegible]	20,561	[illegible]			
40	5	22,057	-48.5			
30						
20						
15						

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

COLUMBIA, MO. (988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	238	0.7	76	70	1.6
1,000	29	135				
950	29	551	1.7	67	118	1.9
900	29	985	1.0	63	202	2.3
850	29	1,444	.6	62	250	5.2
800	29	1,929	- 1.0	61	258	8.2
750	29	2,440	- 3.5	58	261	10.2
700	29	2,984	- 6.5	52	263	11.8
650	29	3,555	-10.1	50	263	14.1
600	29	4,171	-13.9	48	261	17.3
550	29	4,822	-18.3	42	262	20.7
500	29	5,531	-23.0	41	264	23.7
450	28	6,291	-28.7	40	262	26.9
400	28	7,123	-34.9		260	30.2
350	28	8,042	-41.3		256	34.7
300	28	9,073	-47.9		255	38.7
250	28	10,259	-53.6		254	43.6
200	28	11,685	-54.7		256	40.2
175	28	12,538	-54.7		258	39.2
150	28	13,522	-55.6		263	32.9
125	28	14,678	-57.4		262	29.8
100	28	16,081	-58.6		266	22.5
80	27	17,478	-59.3		265	17.1
60	26	19,278	-58.6		269	9.3
50	24	20,427	-57.5		278	6.2
40	22	21,835	-57.1		329	3.4
30	20	23,657	-56.6		3	1.5
20						

DODGE CITY, KANS. (923 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	792	- 1.7	79	29	2.4
1,000	29	145				
950	29	558				
900	29	992	- .6	59	53	3.3
850	29	1,450	- .5	50	123	.9
800	29	1,935	- .7	42	265	3.8
750	29	2,450	- 2.8	39	274	6.3
700	29	2,992	- 5.8	39	282	8.0
650	29	3,568	- 9.6	41	280	9.6
600	29	4,181	-13.9	41	270	11.7
550	29	4,836	18.6	41	275	14.3
500	29	5,539	-23.5	38	269	15.1
450	29	6,304	-29.1	36	269	16.0
400	29	7,131	-35.4		275	18.1
350	28	8,052	-41.8		267	18.5
300	28	9,081	-48.5		266	23.7
250	27	10,268	-53.6		289	21.3
200	27	11,692	-55.1			
175	27	12,546	-54.7			
150	27	13,529	-55.4			
125	26	14,687	-57.9			
100	25	16,085	-59.4			
80	21	17,478	-59.5			
60	19	19,285	-58.6			
50	18	20,433	-57.2			
40	15	21,846	-56.2			
30	10	23,681	-55.9			
20						

EL PASO, TEX. (880 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,195	8.0	42	310	2.1
1,000	29	122				
950	29	559				
900	29	1,009				
850	29	1,483	8.4	35	288	3.6
800	29	1,980	5.2	37	272	6.4
750	29	2,511	1.8	37	265	9.3
700	29	3,056	- 1.8	37	266	9.8
650	29	3,643	- 5.8		277	10.3
600	29	4,263	-10.0		279	14.0
550	29	4,926	-14.2		277	15.9
500	29	5,644	-18.9		265	16.8
450	29	6,426	-24.4		273	17.7
400	29	7,267	-30.4			
350	29	8,203	-37.0			
300	29	9,252	-43.9			
250	29	10,455	-51.1			
200	29	11,886	-55.3			
175	29	12,735	-56.8			
150	29	13,705	-59.2			
125	29	14,838	-62.0			
100	27	16,206	-64.1			
80	25	17,564	-64.4			
60	25	19,328	-61.7			
50	21	20,462	-58.8			
40	18	21,867	-57.5			
30	11	23,688	-56.2			
20						

ELY, NEV. (806 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,908	- 6.8	64	233	0.5
1,000	29	186				
950	29	603				
900	29	1,034				
850	29	1,490				
800	29	1,969			180	.4
750	29	2,484	- 5.6	50	318	.9
700	29	3,014	- 8.7	48	306	3.0
650	29	3,593	-11.4	46	303	5.2
600	29	4,196	-14.6	45	298	7.4
550	29	4,856	-18.7	45	294	10.7
500	29	5,553	-23.5	42	293	13.4
450	29	6,322	-28.9	37	289	15.3
400	29	7,147	-35.1		287	16.8
350	28	8,061	-42.0		311	15.5
300	28	9,089	-48.6			
250	28	10,269	-54.9			
200	28	11,686	-56.6			
175	28	12,535	-54.7			
150	28	13,522	-54.6			
125	28	14,684	-56.6			
100	26	16,101	-57.6			
80	24	17,504	-58.8			
60	24	19,319	-57.1			
50	23	20,473	-56.5			
40	23	21,892	-55.0			
30	18	23,732	-54.7			
20	5	26,279	-54.3			

FAIRBANKS, ALASKA (998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	135	-20.2	67	283	0.6
1,000	29	115			357	.6
950	29	500	-18.3	59	290	1.3
900	29	901	-17.8	62	203	.7
850	29	1,328	-17.6	63	222	1.2
800	29	1,781	-18.5	64	250	2.9
750	29	2,265	-19.9	65	275	3.6
700	29	2,771	-21.2	61	281	4.5
650	29	3,321	-23.7	61	280	5.8
600	29	3,896	-27.0	59	283	6.5
550	29	4,521	-30.9	57	275	7.0
500	29	5,187	-35.4		282	9.0
450	29	5,920	-40.3		265	8.6
400	29	6,708	-45.1		259	9.4
350	29	7,591	-49.4		261	11.8
300	29	8,592	-53.0		274	10.3
250	27	9,762	-52.1		263	11.9
200	26	11,221	-49.0		265	14.2
175	26	12,099	-48.3		260	15.1
150	24	13,104	-48.3		262	13.7
125	22	14,311	-47.7		264	15.0
100	17	15,832	-47.4		268	20.0
80	17	17,303	-48.2		278	17.7
60	12	19,198	-48.4			
50	11	20,406	-48.7			
40	11	21,870	-49.0			
30	6	23,722	-49.1			
20						

FORT HUACHUCA, ARIZ. (855 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29		7.8	33	267	1.9
1,000	29	114				
950	29	552				
900	29	1,004				
850	29	1,479	7.7	32	270	4.3
800	29	1,976	4.5	34	241	3.6
750	29	2,502	1.0	35	251	4.5
700	29	3,048	- 2.3		237	5.7
650	29	3,633	- 5.8		251	7.0
600	29	4,255	- 9.8		264	9.8
550	29	4,917	-14.3		262	10.2
500	26	5,635	-19.0		265	13.7
450	25	6,412	-24.4		269	15.3
400	21	7,242	-30.8		263	18.0
350	19	8,158	-37.6		264	18.6
300	15	9,229	-44.1		274	24.6
250	9	10,388	-50.4			
200						
175						
150						
125						
100						
80						
60						
50						
40						
30						
20						

FORT WORTH, TEX. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	178	9.8	68	306	0.8
1,000	29	131				
950	29	562	8.9	62	195	2.9
900	29	1,005	7.8	60	222	5.3
850	29	1,475	6.5	57	236	7.5
800	29	1,971	4.7	49	251	8.8
750	29	2,502	1.7	46	257	11.8
700	29	3,048	- 1.3	42	257	14.1
650	29	3,637	- 4.7	32	255	16.9
600	29	4,260	- 8.8	30	257	18.2
550	29	4,934	-13.4		257	21.5
500	29	5,647	-18.4		255	25.0
450	29	6,432	-23.6		256	28.1
400	29	7,276	-29.8		255	30.8
350	29	8,214	-36.5		256	33.4
300	29	9,265	-44.0		255	37.4
250	28	10,462	-52.0		256	40.6
200	27	11,883	-56.8		255	40.4
175	26	12,729	-57.1		257	40.1
150	24	13,705	-59.0		258	38.0
125	23	14,842	-61.8		257	35.5
100	21	16,210	-64.6		256	30.3
80	17	17,563	-66.0		260	21.1
60	14	19,325	-61.1		260	11.9
50	13	20,466	-60.0		263	6.3
40	13	21,863	-58.5		296	2.4
30	11	23,675	-56.8		59	2.9
20						

GLASGOW, MONT. (932 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	696	-13.3	84	29	0.6
1,000	29	150				
950	29	548				
900	29	962	- 7.9	68	294	3.4
850	29	1,407	- 7.4	59	298	7.3
800	29	1,879	- 7.8	53	300	9.8
750	29	2,381	-10.9	53	299	11.0
700	29	2,905	-14.2	53	300	11.5
650	29	3,470	-17.8	54	299	12.1
600	29	4,057	-21.6	51	299	13.3
550	29	4,694	-26.2	50	296	13.8
500	29	5,374	-31.2	47	296	14.9
450	29	6,118	-36.4		300	14.8
400	29	6,920	-41.8		305	15.6
350	29	7,813	-47.4		302	18.2
300	29	8,819	-52.3		300	18.2
250	29	9,992	-53.7		287	20.9
200	29	11,426	-52.5		278	14.1
175	29	12,291	-51.4		281	17.4
150	29	13,292	-50.9		275	15.8
125	27	14,480	-51.1		276	15.8
100	26	15,927	-51.9		281	12.9
80	26	17,371	-52.1		268	8.5
60	26	19,232	-52.4		281	5.9
50	26	20,409	-52.7		313	4.4
40	25	21,852	-52.4			
30	13	23,702	-52.2			
20						

GRAND JUNCTION, COLO. (850 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,474	- 0.7	58	62	1.1
1,000	29	151				
950	29	575				
900	29	1,014				
850	29	1,473			73	1.9
800	29	1,959	- 1.3	45	242	.6
750	29	2,477	- 4.7	47	259	3.0
700	29	3,010	- 8.2	50	266	4.1
650	29	3,586	-12.2	51	263	5.8
600	29	4,188	-16.4	52	275	7.3
550	29	4,841	-20.9	46	286	9.3
500	29	5,533	-25.4	38	289	11.6
450	29	6,302	-30.8		296	14.3
400	29	7,115	-36.6		302	15.4
350	29	8,027	-42.9		299	14.9
300	29	9,050	-49.6		298	13.3
250	28	10,230	-54.9			
200	27	11,647	-55.3			
175	27	12,502	-53.7			
150	27	13,490	-54.2			
125	25	14,646	-56.0			
100	24	16,049	-58.9			
80	22	17,451	-59.0			
60	20	19,265	-57.2			
50	17	20,418	-57.0			
40	14	21,831	-56.2			
30	5	23,670	-55.2			
20						

GREAT FALLS, MONT. (883 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,123	- 5.5	63	240	5.7
1,000	29	130				
950	29	544				
900	29	972				
850	29	1,421	- 4.0	46	243	8.7
800	29	1,898	- 5.5	50	259	9.2
750	29	2,405	- 8.8	54	270	10.6
700	29	2,931	-12.8	56	281	11.3
650	29	3,498	-16.5	54	291	11.1
600	29	4,089	-20.8	53	293	12.1
550	29	4,729	-25.3	51	295	13.4
500	29	5,411	-29.8	48	297	14.2
450	29	6,161	-34.9	47	300	16.4
400	29	6,967	-40.4		293	20.5
350	29	7,865	-46.2		295	22.6
300	29	8,875	-51.9		293	25.6
250	29	10,046	-54.4		290	26.5
200	29	11,475	-53.6		287	20.7
175	28	12,332	-52.4		287	19.1
150	28	13,332	-51.2		287	18.4
125	28	14,514	-51.7		286	15.7
100	28	15,959	-52.7		288	12.5
80	28	17,397	-53.1		290	9.3
60	28	19,250	-53.4		306	6.1
50	28	20,425	-52.7		328	4.5
40	28	21,866	-52.5		349	3.8
30	26	23,721	-52.1		23	4.6
20	5	26,317	-52.3			

GREEN BAY, WIS. (991 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	210	- 7.8	71	296	2.0
1,000	29	138				
950	29	544	- 5.9	60	287	4.2
900	29	961	- 7.3	56	291	3.3
850	29	1,405	- 8.1	47	296	5.4
800	29	1,875	- 9.7	44	289	6.9
750	29	2,376	-11.3	43	280	8.7
700	29	2,898	-13.8	41	280	11.3
650	29	3,462	-16.6	41	280	13.7
600	29	4,056	-19.5	43	276	16.7
550	29	4,697	-23.4	44	275	18.3
500	29	5,387	-28.1	45	275	19.7
450	29	6,139	-33.6	43	272	21.6
400	29	6,951	-39.1		257	18.0
350	29	7,854	-45.0		261	20.8
300	29	8,870	-50.4		262	20.3
250	29	10,047	-53.5		255	18.3
200	29	11,485	-51.9		268	19.9
175	29	12,351	-51.2			
150	29	13,350	-51.8			
125	29	14,528	-53.3			
100	29	15,960	-54.0			
80	27	17,388	-54.5			
60	25	19,230	-54.7			
50	24	20,397	-54.7			
40	22	21,829	-54.8			
30	16	23,674	-54.4			
20	6	26,293	-54.0			

GREENSBORO, N. C. (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	273	5.8	79	258	1.0
1,000	29	158				
950	29	584	7.1	62	240	3.8
900	29	1,024	5.7	63	245	7.6
850	29	1,491	4.1	61	255	9.9
800	29	1,982	1.7	57	261	11.3
750	29	2,506	- .7	52	265	13.4
700	29	3,049	- 3.2	43	267	14.9
650	29	3,637	- 6.3	42	268	17.9
600	29	4,254	- 9.7	36	265	19.8
550	29	4,922	-14.0	35	263	20.5
500	29	5,638	-18.9	35	266	22.1
450	29	6,422	-24.2	39	269	24.8
400	29	7,263	-30.2	40	266	26.4
350	29	8,199	-37.1	42	264	31.2
300	29	9,247	-44.3			
250	29	10,446	-52.3			
200	29	11,871	-56.5			
175	29	12,717	-56.5			
150	29	13,692	-58.0			
125	29	14,832	-61.3			
100	28	16,204	-63.5			
80	25	17,562	-63.7			
60	20	19,326	-60.0			
50	18	20,463	-59.2			
40	17	21,866	-58.0			
30	13	23,675	-57.3			
20						

HATTERAS, N. C. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	3	10.1	84	11	0.4
1,000	29	154	11.5	75	316	.8
950	29	584	10.3	69	262	2.0
900	29	1,031	7.7	67	253	5.7
850	29	1,500	5.2	63	263	7.8
800	29	1,993	3.4	54	263	10.3
750	29	2,520	1.0	50	261	13.3
700	29	3,067	- 1.9	49	262	15.5
650	29	3,656	- 5.0	46	263	18.9
600	29	4,278	- 8.6	42	261	20.3
550	29	4,950	-12.9	42	260	23.5
500	29	5,667	-17.7	45	264	24.2
450	29	6,453	-22.8	46	260	24.5
400	29	7,301	-28.9	49	263	26.1
350	29	8,241	-36.1	47		
300	29	9,292	-44.1			
250	29	10,491	-52.4			
200	28	11,914	-56.3			
175	27	12,763	-56.4			
150	26	13,735	-58.9			
125	25	14,869	-62.4			
100	24	16,229	-65.2			
80	21	17,573	-65.5			
60	19	19,337	-61.5			
50	18	20,467	-59.6			
40	16	21,869	-58.3			
30	12	23,685	-57.2			
20						

HILO, T. H. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	11	22.2	82	40	2.2
1,000	29	115	21.2	80	43	2.4
950	29	561	18.2	81	61	3.1
900	29	1,021	15.1	81	81	3.4
850	29	1,504	12.1	81	84	2.7
800	29	2,010	9.3	80	92	2.7
750	29	2,549	6.5	75	88	2.7
700	29	3,108	3.7	69	99	1.6
650	28	3,708	.7	59	115	1.1
600	28	4,346	- 2.9	55	348	.7
550	28	5,029	- 7.1	51	270	2.8
500	28	5,767	-11.6	48	262	4.1
450	28	6,573	-17.1		275	6.5
400	28	7,440	-23.3	44	286	7.7
350	28	8,403	-30.5		289	8.8
300	28	9,481	-38.3		276	16.5
250	28	10,711	-46.7		276	27.2
200	27	12,161	-55.1		285	30.7
175	26	13,001	-59.9		289	34.5
150	24	13,958	-64.6		292	26.3
125	14	15,070	-69.9			
100	7	16,382	-73.8			
80	5	17,663	-75.6			
60						
50						
40						
30						
20						

INTERNAT. FALLS, MINN. (972 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	360	-14.1	66	243	2.3
1,000	29	139				
950	29	534	-11.9	64	264	3.6
900	29	946	-12.1	63	277	4.7
850	29	1,383	-11.8	57	278	5.6
800	29	1,847	-12.8	53	286	7.2
750	29	2,339	-15.0	50	284	8.8
700	29	2,856	-17.4	48	285	10.8
650	29	3,415	-20.3	46	295	12.0
600	29	3,996	-23.5	46	286	13.5
550	28	4,629	-27.1	48	285	15.4
500	27	5,304	-31.6	45	285	17.6
450	27	6,049	-36.5		284	19.7
400	27	6,848	-42.2		280	19.3
350	27	7,738	-47.9		279	20.4
300	27	8,742	-52.2		277	21.1
250	25	9,914	-53.4		282	22.0
200	23	11,340	-50.4		279	20.0
175	21	12,213	-50.0		279	19.4
150	20	13,210	-49.8		283	19.1
125	17	14,392	-49.[illegible]		282	16.6
100	15	15,847	-50.7		282	15.3
80	12	17,283	-51.2		290	12.4
60	11	19,146	-52.1		293	10.0
50	11	20,326	-51.9		297	8.2
40	10	21,764	-52.9			
30	7	23,627	-52.8			
20						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

JACKSON, MISS. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	101	12.0	78	187	1.8
1,000	29	140			145	1.2
950	29	576	12.0	68	195	6.8
900	29	1,023	10.3	65	217	8.6
850	29	1,497	8.2	59	234	9.2
800	28	1,996	6.1	51	246	10.9
750	28	2,527	4.0	45	253	12.6
700	28	3,080	.9	45	257	14.9
650	27	3,680	2.2	45	257	18.4
600	27	4,307	- 5.9	42	256	21.0
550	27	4,986	-10.3	40	255	23.2
500	27	5,710	-15.5		254	25.8
450	26	6,505	-21.0	37	255	29.9
400	26	7,353	-27.5	41	257	31.2
350	26	8,299	-34.6	43	257	35.6
300	26	9,358	-42.5		257	36.8
250	26	10.565	-51.3		259	39.8
200	26	11,991	-57.4		262	44.2
175	26	12,832	-57.8		256	41.5
150	24	13,803	-60.0		257	42.1
125	23	14,930	-64.0		257	39.5
100	22	16,286	-66.8		256	31.4
80	20	17,621	-68.4		261	24.0
60	15	19,370	-63.3		266	12.0
50	15	20,498	-60.6		261	5.5
40	14	21,892	-59.7		261	1.6
30	9	23,709	-57.3			
20						

JACKSONVILLE, FLA. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	6	15.5	84	213	1.3
1,000	29	169	16.2	75	197	2.7
950	29	606	14.3	71	219	5.0
900	29	1,060	12.0	69	241	6.3
850	29	1,537	9.7	59	247	7.2
800	29	2,039	7.6	50	252	9.3
750	29	2,573	5.0	46	254	11.0
700	29	3,129	2.4	42	258	12.4
650	28	3,725	- 1.0	36	255	14.2
600	28	4,356	5.0	33	259	16.4
550	28	5,036	- 9.5	36	262	18.5
500	28	5,764	-14.4	35	260	20.9
450	28	6,561	-20.0	37	259	22.8
400	28	7,417	-26.3	36	260	25.2
350	28	8,368	-33.6	41	262	27.9
300	28	9,430	-42.0		263	29.5
250	28	10,638	-51.5		266	33.2
200	28	12,063	-57.1		266	34.9
175	26	12,909	-58.0		268	35.7
150	26	13,872	-61.4		269	34.8
125	26	14,990	-65.6		268	32.9
100	22	16,339	-70.5		267	26.8
80	15	17,659	-71.5		266	15.8
60	14	19,369	-65.5		260	9.5
50	12	20,492	-62.3		256	4.8
40	10	21,881	-59.5			
30	8	23,695	-58.0			
20						

KING SALMON, ALASKA (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	15	-11.6	77	339	2.6
1,000	29	84			336	4.8
950	29	480	-11.0	69	338	3.9
900	29	894	-10.3	66	331	4.3
850	29	1,333	-10.8	63	318	6.6
800	29	1,799	-11.5	54	314	8.1
750	29	2,295	-13.2	51	307	8.6
700	29	2,815	-15.4	49	296	11.0
650	29	3,376	-18.1	48	291	13.0
600	29	3,965	-21.6	48	288	14.3
550	29	4,603	-25.2		282	17.3
500	29	5,288	-29.5	45	282	18.8
450	28	6,035	-34.4		286	22.5
400	28	6,847	-40.3		285	22.9
350	28	7,744	-46.3		287	25.5
300	28	8,754	-50.8		275	25.7
250	28	9,937	-51.5		271	24.2
200	27	11,391	-49.5		268	23.5
175	26	12,256	-49.4		272	18.8
150	23	13,266	-48.5		272	17.3
125	22	14,469	-49.5		272	18.1
100	16	15,938	-49.3		271	16.1
80	14	17,411	-50.0		257	8.2
60	13	19,296	-49.0		278	10.6
50	12	20,520	-48.1		282	9.1
40	11	21,976	-47.2		289	6.7
30	11	23,875	-47.5		283	5.0
20	6	26,603	-43.4			

KOTZEBUE, ALASKA (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	5	-22.0	75	36	1.5
1,000	28	125	-20.6	70	325	2.2
950	28	514	-18.4	68	359	3.2
900	28	911	-18.2	66	346	4.1
850	28	1,337	-18.5	65	340	5.0
800	28	1,789	-19.2	63	337	4.8
750	28	2,274	-20.5	62	329	4.0
700	28	2,776	-22.7	59	303	4.6
650	28	3,322	-25.1	56	296	6.2
600	28	3,894	-28.4	53	291	7.0
550	28	4,517	-31.8	46	290	9.0
500	28	5,181	-35.8		288	9.3
450	28	5,915	-40.2		291	9.2
400	28	6,703	-44.9		283	8.8
350	28	7,586	-49.0		285	9.8
300	28	8,588	-52.5		279	10.6
250	27	9,758	-53.3		268	11.6
200	22	11,198	-49.4		265	13.5
175	22	12,073	-48.9		258	14.3
150	20	13,066	-49.0		267	16.0
125	18	14,275	-48.3		265	16.2
100	13	15,722	-47.8			
80	10	17,194	-48.1			
60	9	19,052	-49.6			
50						
40						
30						
20						

LAKE CHARLES, LA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	5	14.3	81	114	1.1
1,000	29	138	14.5	75	113	1.5
950	29	573	13.5	72	180	2.9
900	29	1,026	11.5	66	223	3.7
850	29	1,503	10.2	55	244	7.0
800	29	2,006	8.2	51	245	9.4
750	29	2,543	5.8	47	251	12.6
700	29	3,098	2.9	38	257	15.0
650	29	3,700	- .5	35	257	17.6
600	29	4,330	- 4.5	33	257	19.7
550	29	5,011	- 9.3	32	256	23.5
500	29	5,739	-14.3		268	24.3
450	29	6,536	-20.0	33	266	25.1
400	29	7,392	-26.3	36		
350	29	8,343	-33.4			
300	28	9,401	-41.6			
250	28	10,613	-50.6			
200	25	12,038	-56.7			
175	24	12,886	-57.3			
150	23	13,854	-59.8			
125	22	14,982	-64.1			
100	22	16,335	-67.6			
80	17	17,671	-68.9			
60	16	19,405	-63.9			
50	15	20,532	-60.9			
40	15	21,925	-58.9			
30	14	23,741	-56.7			
20						

LANDER, WYO. (824 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	1,696	- 8.9	63	277	1.2
1,000	29	167				
950	29	577				
900	29	1,005				
850	29	1,456				
800	29	1,930	- 5.4	49	277	1.4
750	29	2,437	- 7.0	40	296	3.5
700	29	2,971	-10.4	40	298	6.5
650	29	3,536	-14.3	40	299	8.9
600	29	4,140	-17.8	41	298	11.1
550	29	4,786	-22.1	40	302	12.1
500	29	5,479	-26.7	39	294	13.8
450	29	6,236	-31.9	36	295	14.0
400	29	7,053	-37.9		294	15.0
350	29	7,959	-44.6		285	17.4
300	29	8,975	-51.2		281	16.4
250	29	10,146	-55.1			
200	29	11,568	-54.8			
175	29	12,425	-53.2			
150	29	13,418	-53.3			
125	28	14,594	-53.6			
100	27	16,023	-55.7			
80	25	17,440	-55.7			
60	23	19,279	-54.7			
50	22	20,450	-54.2			
40	12	21,876	-53.9			
30	7	23,708	-53.1			
20						

LAS VEGAS, NEV. (939 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	660	8.6	24	253	2.1
1,000	29	129				
950	29	561				
900	29	1,008	9.8	24	212	1.1
850	29	1,480	6.4	26	245	1.6
800	29	1,973	2.3	30	272	2.5
750	29	2,497	- 1.9	34	281	3.1
700	29	3,035	- 5.3	36	291	4.3
650	29	3,619	- 8.6	32	298	6.4
600	29	4,231	-11.9		304	8.0
550	29	4,895	-16.5		306	10.1
500	29	5,601	-21.4		305	12.0
450	29	6,379	-27.0		299	14.6
400	29	7,207	-33.4		287	16.8
350	29	8,131	-40.4		282	19.3
300	29	9,164	-47.7		276	21.5
250	29	10,344	-55.1		272	22.9
200	29	11,756	-57.4		266	25.8
175	29	12,601	-56.2		267	26.3
150	29	13,579	-56.8		270	23.7
125	27	14,733	-59.1		268	21.4
100	25	16,132	-61.3		271	16.7
80	22	17,506	-61.2		272	10.3
60	21	19,300	-59.3		268	4.6
50	21	20,445	-57.8		301	1.1
40	20	21,855	-56.5		74	2.0
30	19	23,682	-55.1		82	4.1
20	7	26,273	-54.0			

LITTLE ROCK, ARK. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	79	8.0	80	356	0.3
1,000	29	128			344	1.0
950	29	558	7.7	69	198	2.7
900	29	997	6.7	65	223	6.0
850	29	1,466	5.4	61	238	7.5
800	29	1,961	3.7	53	250	10.3
750	29	2,488	1.1	46	258	11.8
700	29	3,035	- 2.0	45	261	14.2
650	29	3,621	- 5.8	41	264	17.8
600	29	4,242	- 9.7	39	260	21.2
550	29	4,909	-13.6	36	260	23.8
500	29	5,628	-18.0		261	23.6
450	29	6,412	-23.3		256	25.6
400	29	7,258	-29.5		249	28.6
350	29	8,197	-36.5		254	30.3
300	29	9,247	-44.3		259	30.7
250	29	10,445	-52.4			
200	28	11,868	-57.3			
175	28	12,712	-57.2			
150	26	13,682	-58.2			
125	26	14,820	-61.5			
100	21	16,189	-63.4			
80	19	17,549	-63.7			
60	17	19,323	-60.4			
50	15	20,463	-58.8			
40	13	21,861	-58.0			
30	7	23,682	-56.5			
20						

MAZATLAN, MEXICO (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	14	18.9	77		
1,000	28	110	18.3	73		
950	28	566	20.3	40		
900	28	1,017	19.2	31		
850	28	1,506	16.6	29		
800	28	2,018	13.7			
750	28	2,569	10.5			
700	28	3,129	6.8			
650	27	3,738	2.3			
600	26	4,377	- 1.9			
550	26	5,065	- 6.4			
500	26	5,801	-11.5			
450	26	6,607	-17.5			
400	26	7,471	-23.8			
350	25	8,435	-30.6			
300	24	9,514	-38.6			
250	17	10,763	-48.2			
200	7	12,205	-57.0			
175						
150						
125						
100						
80						
60						
50						
40						
30						
20						

MC GRATH, ALASKA (1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	103	-17.9	67	301	0.6
1,000	29	113			356	2.0
950	29	498	-17.8	67	17	2.2
900	29	903	-15.7	67	27	2.6
850	29	1,333	-15.5	66	15	4.8
800	29	1,790	-16.0	64	9	6.7
750	29	2,277	-17.8	57	351	10.1
700	29	2,788	-19.6	54	351	10.8
650	29	3,342	-22.5	51	343	12.4
600	29	3,918	-25.7	48	343	17.1
550	28	4,550	-29.0	43		
500	28	5,222	-32.8			
450	28	5,962	-37.3			
400	27	6,754	-42.0			
350	27	7,647	-46.8			
300	26	8,664	-50.7			
250	24	9,833	-51.1			
200	22	11,293	-47.7			
175	20	12,185	-47.1			
150	20	13,204	-47.1			
125	18	14,400	-47.8			
100	17	15,856	-47.9			
80	15	17,341	-48.0			
60	12	19,212	-49.0			
50	11	20,407	-49.0			
40	8	21,821	-50.0			
30	6	23,727	-48.7			
20						

MEDFORD, ORE. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	401	3.2	75	239	1.0
1,000	29	164				
950	29	586	4.5	60	235	1.1
900	29	1,022	2.6	56	246	2.2
850	29	1,482	.1	58	240	4.0
800	29	1,966	- 2.5	57	253	5.2
750	29	2,478	- 5.4	56	277	7.0
700	29	3,013	- 8.5	53	301	8.2
650	29	3,589	-11.7	50	299	10.2
600	29	4,193	-15.4	50	298	10.9
550	29	4,848	-19.7	44	297	10.5
500	29	5,545	-24.6	43	293	9.4
450	29	6,310	-30.1	42	313	11.7
400	29	7,132	-35.8	37	308	11.0
350	29	8,047	-42.1		296	13.9
300	29	9,074	-48.9		298	14.8
250	29	10,254	-54.6			
200	29	11,669	-57.5			
175	29	12,516	-55.0			
150	29	13,503	-54.5			
125	28	14,674	-55.9			
100	26	16,086	-56.9			
80	25	17,493	-57.9			
60	24	19,310	-56.3			
50	22	20,460	-55.7			
40	20	21,879	-54.9			
30	13	23,712	-54.4			

MIAMI, FLA. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	4	20.8	83	125	1.9
1,000	29	164	20.5	79	111	2.5
950	29	605	17.9	75	122	3.6
900	29	1,067	15.0	71	139	3.1
850	29	1,549	12.7	60	148	2.8
800	29	2,057	10.9	41	179	1.8
750	29	2,600	8.2	34	201	1.1
700	29	3,158	4.8	36	231	1.8
650	29	3,766	1.4		252	3.5
600	29	4,399	- 2.4		261	4.2
550	29	5,086	- 6.4		265	6.4
500	29	5,823	-11.3		267	9.0
450	29	6,632	-17.1		277	9.5
400	29	7,496	-23.5		271	10.6
350	29	8,457	-31.4		275	12.3
300	29	9,529	-40.2		276	14.3
250	28	10,747	-49.6		279	17.0
200	27	12,185	-55.6		277	21.7
175	27	13,030	-58.3		274	28.9
150	26	13,987	-63.0		273	22.3
125	24	15,089	-69.0		270	19.7
100	20	16,397	-74.6			
80	15	17,679	-75.0			
60	14	19,369	-68.5			
50	14	20,474	-64.0			
40	14	21,854	-59.5			
30	13	23,671	-56.0			

MIDLAND, TEXAS (915 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	871	8.1	45	294	0.5
1,000	29	124				
950	29	558				
900	29	1,006	9.6	40	247	1.3
850	29	1,479	7.6	36	257	5.0
800	29	1,976	5.2	34	262	8.0
750	29	2,507	2.0	33	261	10.0
700	29	3,053	- .9	35	260	11.8
650	29	3,644	- 4.8	37	262	14.2
600	29	4,264	- 9.2	39	264	15.7
550	29	4,930	-14.0	38	267	17.9
500	29	5,648	-18.8	36	259	21.2
450	29	6,433	-23.8		261	25.2
400	29	7,275	-29.5	30	258	25.1
350	29	8,215	-35.9		270	26.2
300	29	9,269	-43.3			
250	29	10,473	-51.3			
200	29	11,906	-55.1			
175	28	12,762	-56.7			
150	28	13,734	-59.1			
125	28	14,868	-62.1			
100	25	16,240	-64.7			
80	22	17,594	-65.7			
60	21	19,354	-61.7			
50	17	20,492	-59.1			
40	15	21,896	-57.6			
30	12	23,720	-56.3			

NANTUCKET, MASS. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	14	0.8	81	313	2.3
1,000	29	128	.7	75	298	4.3
950	29	539	- .7	68	286	6.6
900	29	969	- 2.6	64	286	8.0
850	29	1,421	- 3.8	64	281	10.9
800	29	1,899	- 5.0	58	286	14.0
750	29	2,410	- 6.8	53	283	16.4
700	29	2,941	- 9.1	50	280	18.6
650	29	3,516	-12.1	48	276	21.4
600	29	4,119	-15.7	44	275	22.2
550	29	4,771	-19.5	41	274	25.8
500	29	5,473	-23.7	36		
450	29	6,241	-28.7			
400	29	7,068	-34.5			
350	29	7,987	-41.5			
300	29	9,017	-47.6			
250	28	10,208	-53.1			
200	27	11,619	-55.9			
175	26	12,462	-54.7			
150	24	13,450	-54.6			
125	24	14,611	-56.6			
100	24	16,019	-58.0			
80	23	17,422	-59.0			
60	20	19,233	-58.8			
50	19	20,376	-57.8			
40	16	21,790	-57.7			
30	11	23,613	-57.4			

NASHVILLE, TENN. (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	177	7.7	81	321	0.5
1,000	29	144				
950	29	569	7.0	70	216	2.4
900	29	1,012	6.0	69	255	4.4
850	29	1,478	4.2	64	270	7.7
800	29	1,970	2.1	57	269	9.6
750	29	2,493	- .4	51	265	11.9
700	29	3,038	- 3.5	50	267	13.1
650	29	3,626	- 6.6	48	268	17.5
600	29	4,242	-10.1	47	261	18.0
550	29	4,911	-14.2	45	268	22.1
500	29	5,624	-18.9	42		
450	29	6,407	-24.4			
400	29	7,247	-30.6	39		
350	29	8,181	-37.6			
300	29	9,226	-45.1			
250	29	10,422	-52.3			
200	27	11,848	-56.3			
175	25	12,689	-56.3			
150	21	13,662	-57.5			
125	15	14,778	-59.0			
100	10	16,123	-60.5			
80	8	17,517	-61.3			
60	6	19,305	-58.7			
50	5	20,459	-58.8			
40	5	21,864	-57.7			
30	5	23,686	-55.8			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

NOME, ALASKA (101[illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	7	-18.2	73	47	1.8
1,000	29	112			14	1.5
950	29	504	-15.6	62	46	2.4
900	29	906	-15.4	61	35	2.2
850	29	1,337	-15.6	59	15	2.4
800	29	1,794	-16.1	55	343	2.0
750	29	2,287	-17.7	50	303	3.3
700	29	2,792	-19.7	47	297	5.2
650	29	3,350	-22.5	44	295	7.8
600	29	3,923	-25.6	44	287	8.8
550	29	4,555	-29.5		291	9.5
500	29	5,223	-33.5		291	10.9
450	29	5,962	-37.9		285	11.0
400	29	6,758	-42.8		278	10.3
350	29	7,649	-47.4		275	10.7
300	28	8,663	-50.9		266	9.5
250	28	9,841	-52.5		258	10.1
200	27	11,286	-49.0		252	12.9
175	26	12,155	-48.3		250	13.2
150	24	13,171	-47.8		256	13.5
125	20	14,377	-47.3		249	13.1
100	19	15,855	-46.7		256	13.6
80	14	17,361	-46.5			
60	12	19,293	-46.1			
50	10	20,505	-46.7			
40	8	21,953	-47.0			
30						
20						

NORFOLK, VA. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	9	7.1	76	311	0.4
1,000	29	154	7.5	66	263	1.8
950	29	580	6.9	62	254	6.6
900	29	1,020	5.0	64	256	9.4
850	29	1,485	3.0	60	258	11.5
800	29	1,974	.7	55	260	13.2
750	29	2,497	- 1.5	52	264	14.9
700	29	3,037	- 3.8	50	264	18.1
650	29	3,624	- 6.9	44	264	21.9
600	29	4,239	-10.6	47	265	24.9
550	29	4,907	-14.8	44	263	27.7
500	29	5,618	-19.5	44	266	29.0
450	29	6,401	-24.8	47	266	33.6
400	29	7,239	-30.5	46	266	37.0
350	29	8,174	-37.5	51	265	40.7
300	29	9,220	-45.0		264	43.4
250	28	10,407	-52.9		271	49.4
200	24	11,818	-56.3		274	48.9
175	22	12,657	-55.7		276	45.0
150	22	13,634	-57.4		275	41.5
125	21	14,780	-59.4		271	37.2
100	19	16,152	-62.3		273	29.7
80	15	17,498	-61.1		274	19.0
60	11	19,271	58.1			
50	10	20,418	-58.0			
40	10	21,827	-57.0			
30	7	23,642	-55.5			

NORTH PLATTE, NEBR. (916 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	848	5.0	82	115	0.4
1,000	29	144				
950	29	557				
900	29	983	- 3.0	67	283	1.0
850	29	1,437	- 2.9	56	296	2.9
800	29	1,916	- 4.8	52	304	5.9
750	29	2,427	- 7.0	52	309	7.3
700	29	2,957	- 9.9	51	304	9.5
650	29	3,528	-13.3	47	297	9.5
600	29	4,130	-17.2	46	291	10.9
550	29	4,779	-21.6	49	284	11.6
500	29	5,471	-26.7	47	283	14.2
450	29	6,231	-32.2	44	283	15.1
400	29	7,045	-38.0		275	16.8
350	29	7,951	-44.7		280	16.8
300	29	8,967	-50.7		288	17.1
250	28	10,141	-54.5		310	8.6
200	28	11,565	-54.6		267	13.9
175	28	12,422	-53.5		253	15.3
150	28	13,413	-53.6		264	12.9
125	28	14,580	-55.0		261	10.0
100	27	15,999	-56.5		259	10.5
80	27	17,111	-57.4			
60	26	19,229	-56.4			
50	26	20,386	-56.2			
40	20	21,801	-56.1			
30	10	23,665	-55.1			

OAKLAND, CALIF. (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	6	9.5	68	263	1.7
1,000	27	166	9.5	60	264	2.2
950	27	594	7.1	59	287	3.6
900	27	1,032	4.9	53	311	4.0
850	27	1,497	2.7	49	310	4.0
800	27	1,985	.4	44	309	3.9
750	27	2,511	- 2.4	38	309	5.5
700	27	3,045	- 4.8	38	309	7.5
650	27	3,630	- 8.2		308	9.1
600	27	4,241	-12.3		308	11.2
550	27	4,902	-16.8	34	305	13.0
500	27	5,609	-22.0		301	15.4
450	26	6,384	-27.8		301	18.0
400	26	7,213	-34.0		300	19.0
350	26	8,134	-41.3		300	20.1
300	26	9,163	-49.1		299	23.5
250	25	10,342	-56.5		295	23.1
200	25	11,745	-58.9		296	20.9
175	25	12,586	-57.2		290	21.7
150	25	13,563	-56.4		291	20.0
125	25	14,715	-58.7		289	16.0
100	25	16,108	-61.1		295	12.2
80	23	17,498	-61.2		305	8.7
60	22	19,289	-59.6		326	4.7
50	17	20,428	-58.4		15	2.9
40	15	21,840	-57.1		54	2.5
30	11	23,660	-55.4		63	4.6

OKLAHOMA CITY, OKLA. (968 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	392	4.6	74	55	0.6
1,000	29	127				
950	29	548	4.6	67	106	.9
900	29	989	4.9	60	220	1.0
850	29	1,455	4.8	50	238	4.6
800	29	1,947	2.7	48	252	7.3
750	29	2,474	- .5	46	266	9.0
700	29	3,014	- 3.5	41	267	11.4
650	29	3,602	- 7.4	37	270	13.4
600	29	4,214	-11.3	33	264	15.0
550	29	4,880	-15.9		263	16.7
500	29	5,586	-20.9		261	18.2
450	29	6,367	-26.2		259	21.6
400	29	7,197	-31.9		259	22.0
350	29	8,126	-38.3			
300	29	9,169	-45.7			
250	29	10,362	-52.7			
200	29	11,788	-55.8			
175	29	12,637	-55.7			
150	29	13,613	-57.7			
125	28	14,756	-59.8			
100	27	16,138	-62.3			
80	26	17,512	-62.4			
60	25	19,296	-60.0			
50	25	20,437	-58.8			
40	22	21,842	-57.7			
30	19	23,649	-57.1			
20	7	26,238	-54.6			

OMAHA, NEBR. (968 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	403	- 4.5	83	39	1.9
1,000	29	145				
950	29	553	- 3.0	71	16	1.7
900	29	980	- 2.4	62	315	1.4
850	29	1,433	- 2.6	60	283	2.7
800	29	1,913	- 4.4	58	287	4.6
750	29	2,425	- 6.7	53	280	6.2
700	29	2,955	- 9.0	52	281	8.6
650	29	3,529	-12.1	51	272	10.6
600	29	4,133	-16.0	48	274	11.4
550	29	4,781	-20.5	50	270	14.7
500	29	5,480	-25.6	53	265	17.0
450	28	6,243	-31.2	50	265	19.2
400	28	7,060	-37.0	48	267	21.5
350	28	7,970	-43.3		269	24.8
300	28	8,992	-49.3		266	27.8
250	28	10,175	-53.3		265	30.8
200	28	11,609	-52.9		264	31.3
175	28	12,472	51.9		262	29.7
150	28	13,469	-52.4		264	26.1
125	26	14,635	-53.9		263	23.1
100	25	16,064	-55.2		264	18.2
80	24	17,489	-56.0		268	12.7
60	23	19,316	-55.6		275	7.1
50	22	20,478	-54.8		282	4.8
40	20	21,911	-54.0		309	2.5
30	19	23,757	-53.9		348	1.3
20	7	26,389	-53.0			

PHOENIX, ARIZ. (976 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	341	11.7	48	356	0.4
1,000	29	135				
950	29	569	12.9	34	343	.6
900	29	1,018	9.7	35	294	1.7
850	29	1,489	6.3	37	272	3.2
800	29	1,983	2.8	38	255	3.5
750	29	2,510	- .6	36	271	3.5
700	29	3,050	- 3.7	34	283	4.5
650	29	3,637	- 7.0	34	281	7.1
600	29	4,252	-10.7	31	284	10.1
550	29	4,917	-15.2		281	10.6
500	29	5,628	-20.1		295	12.6
450	29	6,409	-25.7		284	14.1
400	29	7,243	-31.7		289	16.4
350	28	8,168	-38.1		294	19.5
300	28	9,213	-45.0			
250	28	10,410	-52.3			
200	28	11,837	-55.6			
175	28	12,687	-56.0			
150	28	13,663	-57.8			
125	28	14,806	-60.4			
100	27	16,191	-63.0			
80	23	17,562	-63.7			
60	17	19,340	-61.1			
50	16	20,476	-58.8			
40	12	21,885	-57.1			

PITTSBURGH, PA. (974 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	353	1.4	77	249	1.3
1,000	29	142				
950	29	554	.6	73	246	2.6
900	29	988	- 1.3	69	260	7.1
850	29	1,443	- 2.7	65	262	10.1
800	29	1,921	- 4.9	60	261	13.0
750	29	2,432	- 7.2	60	264	15.1
700	29	2,963	- 9.6	56	266	16.9
650	29	3,536	-12.8	50	268	19.7
600	29	4,138	-16.4	45	269	22.7
550	29	4,790	-20.0	41	265	25.1
500	28	5,482	-24.6	39	266	27.5
450	28	6,249	-29.9	40	267	32.4
400	28	7,071	-35.5	44	263	36.4
350	28	7,987	-41.9		261	37.3
300	27	9,027	-48.2		263	40.5
250	27	10,212	-53.5		263	40.8
200	27	11,636	-55.6		265	42.0
175	27	12,488	-54.8		268	38.8
150	24	13,472	-56.0		265	38.7
125	22	14,640	-58.6		268	29.9
100	20	16,037	-59.9			
80	19	17,433	-59.8			
60	15	19,234	-58.5			
50	13	20,379	-57.7			
40	9	21,784	-56.9			
30	7	23,623	-57.4			

PORTLAND, ME. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	20	- 3.4	74	294	1.7
1,000	29	123	- 2.9	70	292	2.4
950	29	530	4.5	61	287	5.3
900	29	951	- 6.6	63	287	6.3
850	29	1,396	8.3	61	288	8.8
800	29	1,867	- 8.9	61	280	10.0
750	29	2,370	-10.6	58	275	13.2
700	29	2,894	-12.8	56	273	15.5
650	29	3,462	-15.8	56	271	18.8
600	29	4,056	-19.0	48	271	21.2
550	29	4,700	-22.8	46	267	24.5
500	29	5,391	-27.6	45	268	28.3
450	28	6,143	-32.4		269	29.5
400	28	6,964	-37.4		271	35.4
350	28	7,873	-43.2		271	41.8
300	28	8,896	-49.3		270	44.5
250	28	10,079	-53.0		270	44.7
200	28	11,510	-54.2		272	38.2
175	27	12,367	-53.2		269	37.0
150	25	13,342	-53.3		264	32.3
125	25	14,512	-54.3		267	27.5
100	24	15,930	-56.1		268	22.9
80	24	17,345	-56.5		266	17.2
60	21	19,160	-56.7		273	10.4
50	17	20,324	-56.6		269	10.0
40	14	21,740	-57.3		282	10.1
30	10	23,579	-56.9		310	4.7

RAPID CITY, S. DAK. (902 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	966	- 5.9	72	329	1.4
1,000	29	142				
950	29	553				
900	29	980			328	2.2
850	29	1,431	- 3.7	54	306	4.1
800	29	1,909	- 5.7	52	312	6.2
750	29	2,413	- 9.2	54	303	8.0
700	29	2,941	-13.0	52	299	8.6
650	29	3,505	-16.4	46	298	10.2
600	29	4,100	-19.8	43	291	11.8
550	29	4,739	-24.1	42	291	13.3
500	29	5,428	-29.0	42	285	14.2
450	29	6,176	-34.4		282	16.3
400	29	6,986	-40.4		284	18.6
350	29	7,884	-46.5		283	20.6
300	29	8,893	-52.2		284	22.3
250	29	10,063	-54.9		283	23.0
200	29	11,487	-54.6		280	21.3
175	26	12,339	-52.4		277	20.1
150	23	13,341	-52.6		276	19.2
125	12	14,512	-52.8		281	16.5

ST. CLOUD, MINN. (979 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	516	-12.5	78	269	0.8
1,000	29	149				
950	29	549	- 9.6	69	280	2.3
900	29	964	- 8.1	54	281	3.1
850	29	1,407	- 7.9	45	281	5.3
800	29	1,877	- 9.2	48	282	7.0
750	29	2,377	-11.5	45	277	8.4
700	29	2,901	-13.8	45	279	9.7
650	29	3,464	-17.1	45	282	11.4
600	29	4,056	-20.4	45	282	13.7
550	29	4,692	-24.2	47	275	15.4
500	29	5,383	-28.8	47	274	16.7
450	29	6,131	-34.6	42	272	18.3
400	29	6,941	-40.3		273	19.5
350	29	7,840	-46.2		272	20.5
300	29	8,851	-51.8		268	18.6
250	29	10,025	-53.8		277	20.5
200	29	11,463	-51.9		267	15.9
175	28	12,325	-50.5		268	17.2
150	28	13,329	-50.8		271	17.8
125	28	14,514	-51.8		269	15.9
100	28	15,957	-52.8			
80	27	17,393	-53.1		276	12.9
60	25	19,241	-53.3		268	11.6
50	21	20,416	-53.1			
40	17	21,852	-53.2			
30	11	23,707	-53.4			

ST. PAUL IS., ALASKA (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	10	- 6.0	89	58	5.5
1,000	29	76			74	4.4
950	29	483	- 7.0	83	75	4.9
900	29	898	- 6.6	79	73	1.4
850	29	1,344	7.6	73	333	3.0
800	29	1,814	- 9.6	64	321	2.5
750	29	2,320	-11.8	59	297	3.4
700	29	2,836	-14.1	55	279	6.3
650	29	3,408	-17.2	50	277	7.8
600	29	3,991	20.7	50	263	8.5
550	29	4,638	-24.7	50	270	10.7
500	29	5,317	-29.2	52	255	10.2
450	29	6,074	-34.1	49	244	9.3
400	29	6,878	-39.7		245	9.3
350	29	7,777	-45.9		274	9.1
300	29	8,789	-51.3		242	11.6
250	29	9,963	-53.8		245	8.5
200	28	11,398	-51.2		248	10.1
175	28	12,268	-49.6		238	11.0
150	28	13,277	-49.4		250	12.2
125	27	14,468	-49.6		248	9.3
100	27	15,923	-50.6		241	8.6
80	26	17,382	-50.2		236	7.8
60	26	19,261	-49.4		233	6.2
50	23	20,467	-49.0			
40	21	21,933	-49.2			
30	14	23,841	-49.2			

SAN ANTONIO, TEX. (987 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	243	14.1	63	72	1.1
1,000	29	130				
950	29	569	13.9	57	120	3.5
900	29	1,019	11.7	59	185	2.6
850	29	1,496	10.0	57	237	4.8
800	29	1,999	8.7	46	249	8.9
750	29	2,534	6.2	37	248	12.3
700	29	3,093	3.3	31	253	14.5
650	29	3,689	- .6		253	15.5
600	29	4,324	- 5.1	29	257	18.6
550	29	4,999	- 9.9	31	255	21.3
500	29	5,729	-15.3	34	258	23.9
450	29	6,521	-21.3	36	259	25.1
400	29	7,373	-27.7	39	264	28.4
350	29	8,318	-34.4		268	31.8
300	29	9,378	-42.3			
250	29	10,586	-51.0			
200	28	12,014	-55.8			
175	26	12,862	-58.5			
150	26	13,825	-60.9			
125	23	14,945	-65.4			
100	22	16,291	-69.2			
80	18	17,612	-70.0			
60	15	19,348	-63.6			
50	15	20,471	-61.7			
40	14	21,865	-59.0			
30	10	23,677	-57.2			

SANTA MARIA, CALIF. (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	74	9.2	74	299	1.3
1,000	29	162	9.3	72	328	1.5
950	29	589	8.1	64	355	3.2
900	29	1,032	6.5	53	354	3.3
850	29	1,499	4.4	42	343	4.3
800	29	1,990	2.4		328	6.0
750	29	2,518	.4		329	6.9
700	29	3,060	- 2.5		323	7.6
650	29	3,648	- 6.0		318	9.4
600	29	4,266	- 9.9		314	10.8
550	29	4,934	-14.1		306	12.1
500	29	5,648	-19.2		316	13.7
450	29	6,428	-25.2		302	12.4
400	29	7,266	-31.9		309	13.5
350	29	8,195	-39.2		299	15.9
300	29	9,232	-47.1		303	13.8
250	29	10,415	-54.8		299	14.6
200	29	11,824	-58.7		284	18.0
175	29	12,664	-57.3		281	18.8
150	29	13,638	-57.4		287	20.6
125	28	14,780	-59.7			
100	27	16,166	-61.8			
80	25	17,544	-61.7			
60	23	19,335	-59.8			
50	21	20,480	-58.4			
40	17	21,880	-57.2			
30	10	23,687	-55.8			

SAN JUAN, P. R. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	23	22.5	79	89	3.9
1,000	29	158	22.6	73	87	8.2
950	29	602	19.5	76	82	11.0
900	29	1,067	16.1	78	86	10.4
850	29	1,551	12.7	79	90	9.
800	29	2,059	11.4	54	94	7.
750	29	2,603	10.2		96	7.
700	29	3,168	7.6		96	6.
650	29	3,780	4.1		87	5.
600	29	4,420	.2		84	3.
550	28	5,112	- 4.0		86	2.
500	28	5,858	- 9.0		95	.
450	28	6,672	-14.7		324	1.
400	28	7,546	-20.9		281	4.
350	28	8,519	-27.8		274	9.
300	28	9,608	-36.1		272	12.
250	28	10,849	-45.3		269	21.
200	28	12,305	-55.1		271	21.
175	28	13,148	-60.1		277	17.
150	28	14,097	-65.6		289	11.
125	27	15,189	-71.7		308	8.
100	20	16,487	-77.7		25	5.
80	17	17,757	-79.4		74	4.
60	16	19,423	-70.0		85	3.
50	14	20,522	-64.8		131	2.
40	12	21,897	-59.6		303	.
30	9	23,728	-54.1			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See no following Table 22 in the January 1950 issue of Climatological Data, Natio Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

S. STE. MARIE, MICH. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	221	- 6.9	85	290	0.8
1,000	29	132				
950	29	533	- 7.0	70	280	3.9
900	29	952	- 9.2	72	291	6.8
850	29	1,392	-11.1	67	294	8.4
800	29	1,857	-12.1	60	294	9.0
750	29	2,354	-13.8	49	294	10.3
700	29	2,870	-16.1	49	290	11.8
650	29	3,431	-18.8	48	285	13.6
600	29	4,018	-21.8	50	285	16.5
550	29	4,653	-25.7	50	282	18.1
500	28	5,337	-30.1	48	279	18.7
450	27	6,081	-35.3		281	20.8
400	26	6,886	-40.7		279	22.3
350	26	7,783	-46.3		277	24.3
300	23	8,801	-50.5		274	26.7
250	20	9,981	-53.1		275	27.6
200	18	11,405	-52.4		278	27.8
175	17	12,267	-50.5		277	29.8
150	16	13,280	-50.5		277	28.1
125	15	14,464	-51.9		278	26.3
100	14	15,902	-52.9		282	24.0
80	13	17,335	-53.5		283	20.7
60	11	19,186	-53.8		290	17.2
50	10	20,356	-55.2		293	16.0
40	10	21,778	-55.2			
30	6	23,612	-55.1			
20	6	26,204	-54.5			

SHREVEPORT, LA. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	77	11.9	72	218	1.1
1,000	29	128			265	.2
950	29	559	9.9	65	188	3.7
900	29	1,005	8.5	68	210	6.4
850	29	1,477	7.7	58	231	8.5
800	29	1,975	5.5	51	240	10.0
750	29	2,506	3.0	48	243	12.8
700	29	3,056	- .0	45	250	16.2
650	29	3,650	- 3.6	39	250	19.1
600	29	4,273	- 7.8	37	249	21.5
550	29	4,947	-12.3		247	24.1
500	29	5,665	-17.1		246	25.8
450	29	6,459	-22.3		246	28.2
400	29	7,303	-28.4		247	31.1
350	29	8,245	-35.6		249	33.8
300	29	9,298	-43.6		250	36.0
250	29	10,498	-52.0		251	39.1
200	22	11,909	-56.5		252	42.8
175	17	12,774	-56.9		253	42.1
150	15	13,750	-59.6		254	38.8
125	9	14,883	-64.5			
100						
80						
60						
50						
40						
30						
20						

SPOKANE, WASH. (931 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	722	- 5.5	82	207	2.7
1,000	29	153				
950	29	563				
900	29	965	- 4.6	74	208	5.1
850	29	1,434	- 5.9	69	229	8.4
800	29	1,908	- 7.4	67	246	7.7
750	29	2,414	-10.2	68	263	9.5
700	29	2,936	-13.2	65	271	9.9
650	29	3,504	-16.5	64	279	10.4
600	29	4,095	-20.1	60	286	12.0
550	29	4,736	-24.2	59	291	14.2
500	29	5,423	-28.5	59	296	16.5
450	29	6,174	-33.9	57	294	17.2
400	29	6,986	-39.7		296	20.2
350	29	7,885	-46.0		296	19.7
300	29	8,896	-52.0		303	22.0
250	29	10,065	-55.6		302	21.0
200	29	11,488	-54.6		302	17.5
175	29	12,346	-52.6		297	17.3
150	29	13,344	-51.4		300	16.0
125	29	14,526	-52.2		303	14.3
100	28	15,965	-52.9		301	12.2
80	26	17,399	-53.4		308	9.0
60	24	19,249	-53.1		313	5.3
50	21	20,433	-52.5		331	5.0
40	16	21,885	-52.1		357	4.3
30	13	23,765	-51.8		31	6.8
20	9	26,336	-51.6			

TACUBAYA, MEXICO (772 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	22	2,306	18.0	31		
1,000	22	32				
950	22	495				
900	22	971				
850	22	1,475				
800	22	2,006				
750	22	2,560	16.4	33		
700	22	3,140	11.9	35		
650	22	3,760	6.6	41		
600	22	4,406	1.3	[illegible]		
550	22	5,099	- 4.1	46		
500	22	5,844	- 8.7			
450	20	6,665	-13.7			
400	16	7,538	-20.5			
350	15	8,510	-28.4			
300	13	9,602	-36.5			
250	12	10,841	-46.2			
200	7	12,298	-54.8			

TAMPA, FLA. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	7	17.3	81	121	0.9
1,000	29	169	[illegible]	78	138	1.9
950	29	[illegible]	16.5	69	[illegible]	3.4
900	29	1,067	[illegible]	63	[illegible]	4.0
850	29	1,547	11.8	52	213	3.8
800	29	2,053	9.7	[illegible]	[illegible]	5.2
750	29	2,594	7.2	[illegible]	[illegible]	[illegible]
700	29	3,151	4.2	38	255	[illegible]
650	29	3,757	.7		254	[illegible]
600	29	4,389	- 3.0		254	9.9
550	29	5,072	- 7.3		259	[illegible]
500	29	5,808	-12.3		[illegible]	13.3
450	29	6,615	-17.9		263	15.1
400	29	7,171	-24.7		267	15.4
350	29	8,130	-32.4		270	17.2
300	29	9,496	-40.8		271	18.1
250	29	10,712	[illegible]		268	21.1
200	29	12,141	-56.7		270	24.7
175	29	[illegible]	-58.5		[illegible]	26.4
150	28	13,944	-62.4		264	26.7
125	28	15,054	-68.1		261	23.2
100	24	16,368	-73.4		262	21.3
80	20	17,672	-74.4			
60	16	19,369	-67.6			
50	16	20,477	-64.0			
40	16	21,856	-59.9			
30	13	23,659	-57.6			

TATOOSH ISLAND, WASH. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	31	3.7	82	198	2.6
1,000	28	126			209	2.3
950	28	546	1.4	70	229	4.9
900	28	974	- 1.0	72	248	6.1
850	28	1,428	- 3.4	72	263	7.6
800	28	1,906	- 5.7	69	273	8.8
750	28	2,415	- 8.2	64	278	9.8
700	28	2,941	-11.5	60	283	11.5
650	28	3,511	-15.1	57	285	13.1
600	28	4,106	-18.8	54	287	14.7
550	28	4,751	-23.1	53	292	16.5
500	28	5,440	-27.9	52	290	19.3
450	28	6,194	-32.9	46	289	20.3
400	28	7,008	-38.6		284	19.6
350	28	7,914	-44.3		286	21.2
300	28	8,933	-50.3		294	19.8
250	27	10,104	-54.0		298	19.1
200	27	11,529	-54.9		289	19.1
175	27	12,386	-53.0		289	16.0
150	26	13,385	-51.9		290	17.0
125	26	14,564	-52.6		303	14.0
100	25	16,000	-53.6		307	11.0
80	23	17,429	-53.3		313	8.5
60	22	19,283	-52.4		336	5.3
50	21	20,463	-52.2		6	4.8
40	21	21,907	-52.1		31	7.3
30	18	23,764	-51.3		46	8.6
20						
15						

TOPEKA, KANS. (984 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	270	0.0	73	30	1.3
1,000	29	141				
950	29	555	.6	64	6	.8
900	29	986	- .3	64	291	.6
850	29	1,443	- 1.3	63	263	3.5
800	29	1,925	- 2.0	57	264	6.6
750	29	2,443	- 4.0	53	264	8.9
700	29	2,977	- 7.1	53	264	10.8
650	29	3,555	-10.7	52	264	13.2
600	29	4,162	-14.8	51	264	14.9
550	29	4,816	-19.4	48	262	16.4
500	29	5,515	-24.2	44	263	18.1
450	29	6,280	-29.6	39	264	21.4
400	28	7,100	-35.5	40	262	26.0
350	28	8,016	-42.0		259	30.4
300	27	9,041	-48.5		264	36.2
250	27	10,224	-53.5		259	37.3
200	27	11,653	-54.1		261	35.7
175	27	12,510	-53.8		264	35.0
150	27	13,497	-55.2		264	31.3
125	27	14,656	-56.9		263	27.7
100	24	16,069	-58.2		263	22.1
80	21	17,466	-58.9		265	16.7
60	18	19,280	-58.0		262	10.9
50	18	20,432	-56.2		261	6.1
40	18	21,848	-56.6		243	1.3
30	14	23,673	-55.9		321	1.3
20	7	26,259	-54.4			
15						

VERACRUZ, MEXICO (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	13	23.2	85		
1,000	28	105	22.5	84		
950	28	547	21.0	75		
900	28	1,019	19.0	70		
850	28	1,509	16.7	62		
800	28	2,023	14.1	57		
750	28	2,575	11.6	46		
700	28	3,140	8.6	40		
650	28	3,753	4.6	39		
600	28	4,397	.3	35		
550	28	5,093	- 3.7			
500	28	5,836	- 8.7			
450	28	6,661	-14.2			
400	28	7,530	-20.7			
350	24	8,502	-28.5			
300	24	9,585	-37.3			
250	23	10,817	-46.8			
200	21	12,270	-55.1			
175	18	13,119	-59.0			
150	16	14,080	-64.0			
125	15	15,186	-69.7			
100	8	16,502	-77.1			

WASHINGTON, D. C. (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	88	3.8	63	272	1.6
1,000	29	149			290	1.9
950	29	570	2.6	59	271	6.4
900	29	1,002	1.8	59	266	10.2
850	29	1,461	.1	59	273	11.8
800	29	1,945	- 2.1	56	277	12.6
750	29	2,463	- 4.0	52	275	14.0
700	29	2,997	- 6.6	49	275	15.5
650	29	3,576	- 9.3	47	271	18.6
600	29	4,188	-12.9	43	272	22.2
550	29	4,851	-16.9		273	25.0
500	29	5,555	-21.1		270	24.9
450	29	6,331	-26.6		273	26.0
400	29	7,164	-32.4		275	29.4
350	29	8,092	-39.1		266	[illegible]
300	29	9,131	-46.2		262	36.7
250	29	10,325	-52.5			
200	28	11,746	-55.4			
175	28	12,598	-55.4			
150	28	13,577	-56.9			
125	27	14,725	-58.3			
100	26	16,118	-59.8			
80	25	17,503	-60.4			
60	25	19,297	-59.3			
50	24	20,438	-58.2			
40	21	21,844	-57.9			
30	18	23,669	-57.2			
20	15	26,247	-56.1			
15	13	28,092	-54.7			

YAKUTAT, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	12	- 3.5	64	...	3.3
1,000	29	49			127	3.4
950	29	456	- 4.8	74	131	4.7
900	29	877	- 7.2	73	150	3.8
850	29	1,320	- 9.5	74	187	2.5
800	29	1,786	-12.0	73	235	3.1
750	29	2,283	-14.5	72	258	3.7
700	29	2,797	-17.4	66	271	5.0
650	29	3,356	-20.9	63	272	6.3
600	29	3,936	-24.4	58	287	7.7
550	29	4,569	-28.4	54	287	11.1
500	29	5,242	-32.5	47	291	13.2
450	29	5,983	-37.0	47	291	18.4
400	29	6,783	-41.6		291	20.9
350	29	7,678	-46.3		281	21.2
300	29	8,692	-50.3		276	20.4
250	26	9,890	-50.4		261	17.1
200	28	11,349	-48.6		268	18.9
175	27	12,229	-48.8		279	17.7
150	26	13,250	-48.9		290	19.8
125	25	14,440	-49.3		289	18.4
100	23	15,889	-49.2			
80	20	17,351	-49.8			
60	16	19,233	-50.6			
50	14	20,410	-51.0			
40	11	21,860	-50.9			
30	[illegible]	23,728	-50.9			

YUMA, ARIZ. (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	22	105	14.9	30	285	1.2
1,000	22	134	14.9		311	1.2
950	22	570	13.7		304	2.7
900	22	1,021	10.6		307	3.1
850	22	1,493	7.2	35	312	4.7
800	22	1,989	4.1		308	4.9
750	22	2,517	1.5		311	6.5
700	22	3,064	- 1.5		310	7.6
650	21	3,657	- 4.9		295	8.6
600	21	4,278	- 9.1		294	10.0
550	21	4,946	-13.2		293	11.4
500	21	5,666	-17.9		295	15.3
450	21	6,449	-23.6		288	17.1
400	20	7,308	-29.6		284	21.0
350	20	8,247	-36.5		270	24.8
300	20	9,296	-44.3		272	29.8
250	19	10,495	-52.3		269	33.0
200	17	11,919	-57.9		268	37.4
175	13	12,770	-58.1		254	39.4
150	12	13,748	-59.5		263	37.1
125	8	14,882	-60.6			

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 10 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

Note: Effective with the January 1956 issue the publication of the upper air wind resultant data for constant height levels, (Tables 21 and 22) has been discontinued. Table 20 has been expanded to include monthly mean wind resultants for all pressure surfaces having at least 10 wind observations at all rawin stations.

It is believed that the publication of wind data for the same surfaces as raob data will be beneficial to more users than the previous method of presenting raob data for constant height levels.

The National Weather Records Center will continue the processing of data for constant height levels, and will have these available in its archives.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RADIOSONDE DATA

Average monthly values

Table 20 *Air Force Data for October 1955

Standard pressure surface (mb.)	1/ DENVER, COLO. (835 MB.)				2/ FT. WORTH, TEXAS (995 MB.)				OGDEN, UTAH (857 MB.)				RANTOUL, ILL. (987 MB.)				ROME, N. Y. (1002 MB.)		
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature
SURFACE	31	1,661	10.5	41	31	178	19.5	45	31	1,450	11.7	40	31	227	11.1	73	11	146	11.3
1,000--	31	112			31	134			31	128			31	118			11	167	10.4
950----	31	557			31	580	20.2	43	31	568			31	555	12.3	67	11	606	13.1
900----	31	1,019			31	1,042	17.2	45	31	1,029			31	1,001	10.2	63	11	1,053	11.0
850----	31	1,505			31	1,528	14.8	45	31	1,514			31	1,476	8.6	56	11	1,529	8.7
800----	31	2,017	13.6	33	31	2,039	12.0	43	31	2,023	11.5	36	31	1,975	6.3	56	11	2,029	6.8
750----	31	2,561	9.9	34	31	2,581	9.2	41	31	2,564	7.8	38	31	2,507	3.6	56	11	2,565	4.2
700----	31	3,126	5.8	37	31	3,146	6.3	36	31	3,123	3.7	40	31	3,059	.4	53	11	3,116	1.2
650----	31	3,729	1.2	39	31	3,751	2.7	36	31	3,718	- .5	40	31	3,654	- 2.8	48	11	3,712	- 2.2
600----	31	4,366	- 3.6	40	31	4,393	- 1.1		31	4,354	- 4.6	36	31	4,280	- 6.5	44	11	4,341	- 5.7
550----	31	5,047	- 8.6	41	31	5,079	- 5.3		31	5,032	- 9.1	37	31	4,955	-10.6	39	11	5,022	- 8.7
500----	31	5,779	-13.8	40	31	5,824	-10.2		31	5,762	-14.3	39	31	5,682	-15.3	38	11	5,752	-12.8
450----	31	6,571	-19.7	38	31	6,631	-15.8		31	6,553	-19.9	34	31	6,476	-20.8		11	6,552	-18.4
400----	31	7,434	-25.9	31	31	7,505	-22.1		31	7,414	-26.4		31	7,330	-26.9	40	11	7,417	-25.0
350----	31	8,386	-33.4		31	8,473	-29.5		31	8,363	-33.8		31	8,279	-33.8		11	8,373	-31.9
300----	31	9,450	-41.3		31	9,553	-37.9		31	9,424	-41.8		31	9,343	-41.2		11	9,443	-39.7
250----	31	10,664	-49.7		31	10,785	-46.9		31	10,634	-50.1		31	10,560	-48.5		10	10,660	-48.9
200----	31	12,100	-56.2		31	12,233	-56.0		31	12,065	-56.2		31	12,008	-54.2		10	12,093	-58.1
175----	31	12,942	-59.0		31	13,074	-59.8		31	12,909	-58.5		31	12,861	-56.2		10	12,928	-60.2
150----	31	13,903	-61.4		31	14,028	-63.6		30	13,866	-61.1		31	13,835	-58.2		9	13,872	-61.5
125----	31	15,026	-64.3		31	15,134	-68.1		27	15,001	-63.5		31	14,976	-60.9		9	15,000	-62.2
100----	31	16,382	-66.2		29	16,456	-70.9		25	16,359	-66.1		31	16,353	-63.6		5	16,339	-61.7
80-----	31	17,737	-64.9		28	17,781	-69.2		22	17,727	-64.6		26	17,710	-62.4		5	17,719	-62.3
60-----	31	19,505	-61.7		28	19,520	-63.7		17	19,493	-62.1		21	19,484	-60.5		5	19,505	-59.8
50-----	30	20,640	-60.0		27	20,649	-60.5		13	20,637	-59.6		20	20,633	-58.7		5	20,644	-59.3
40-----	29	22,038	-57.8		27	22,049	-57.2		11	22,055	-57.6		19	22,039	-57.4		5	22,049	-56.7
30-----	28	23,867	-55.2		27	23,876	-54.7		9	23,904	-54.3		18	23,866	-55.5				
20-----	28	26,474	-52.3		26	26,490	-50.8						12	26,512	-52.5				
15-----	26	28,342	-50.5		24	28,368	-49.0						7	28,383	-49.2				

1. Continued

10 mb., 18 obs., 30,976 m., 48.8°C.
7 mb., 5 obs., 33,328 m., -48.6°C.

2. Continued

10 mb., 17 obs., 31,021 m., -47 1°C.

* November data for the above Air Force stations will be included in the March 1956 issue of this publication.

Note: All observations scheduled at 0300, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature and humidity data may be missing for one or more pressure surfaces of some observations. The temperature values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by radiosondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees centigrade and relative humidity in percent.

RAWIN DATA

Average monthly resultant winds

Table 22 *Air Force Data for October 1955

Altitude (meters) m.s.l	1/ Denver, Colo. (1,661 m.)			2/ Ft. Worth, Tex. (178 m.)			Ogden, Utah (1,450 m.)			Rantoul, Ill. (227 m.)			Rome, N. Y. (146 m.)		
	No. of observations	Direction	Speed	No. of observations	Direction	Speed	No. of observations	Direction	Speed	No. of observations	Direction	Speed	No. of observations	Direction	Speed
Surface	31	135	1.4	31	12	0.4	31	63	0.8	31	229	2.3	10	164	1.2
500	--	---	----	31	162	1.4	31	67	.7	30	239	5.1	--	---	----
1,000	--	---	----	31	219	2.3	31	252	1.8	30	260	7.0	--	---	----
1,500	--	---	----	31	253	4.4	30	256	3.2	30	272	7.4	--	---	----
2,000	30	225	.6	31	268	4.7	30	261	5.3	30	277	7.7	--	---	----
2,500	30	287	1.9	31	271	5.9	30	273	7.8	31	272	8.4	--	---	----
3,000	30	287	2.8	31	285	6.3	30	278	9.9	31	274	9.3	--	---	----
4,000	30	293	6.3	31	291	8.3	31	277	12.0	31	275	9.6	--	---	----
5,000	29	301	8.2	31	291	8.7	31	280	14.1	31	269	11.0	10	268	19.9
6,000	30	296	9.8	31	287	10.7	31	287	16.2	31	277	13.0	10	268	21.1
8,000	31	295	15.1	31	283	15.1	31	280	17.2	31	276	16.2	10	271	23.6
10,000	31	294	18.2	31	284	20.7	29	274	15.8	31	275	18.9	10	270	28.5
12,000	31	287	20.9	31	279	25.2	25	279	13.1	31	280	22.7			
14,000	31	281	19.9	30	281	19.5	21	285	8.2	21	278	18.7			
16,000	31	276	15.8	30	282	14.3	14	286	4.3	31	274	15.7			
18,000	31	281	9.4	28	303	6.4	10	291	3.3	25	275	8.9			
20,000	30	280	2.6	27	349	1.8				20	275	5.4			
22,000	29	297	4.4	27	88	1.6				19	259	6.7			
24,000	27	276	5.3	27	151	1.2				17	268	9.0			
26,000	28	283	9.7	26	312	1.5				12	274	8.5			
28,000	26	281	13.5	23	260	4.9									

1. Continued

30,000 m., 21 obs., 277 dir., 15.5 speed

2. Continued

30,000 m., 15 obs., 261 dir., 12.6 speed

* November data for the above Air Force stations will be included in the March issue of this publication.

These free-air resultant winds are based on rawin observations made near 0300 G.C.T.; directions in degrees from north (N = 360°,E = 90°,S = 180°,W = 270°); speeds in meters per second.

Note: Resultants prepared from rawins at high altitudes are biased toward lower wind speeds. Values appearing in this table should therefore be used with caution when the number of observations missing is greater than three. See note following Table 22 in the January 1950 issue of the CLIMATOLOGICAL DATA, National Summary.

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. FEBRUARY 1956

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance								
	A.M.				0.0°	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Feb.									
1	---	---	---	---	Cloudy	---	---	---	---
2	---	---	---	---	Cloudy	---	---	---	---
3	---	---	---	---	Cloudy	---	---	---	---
4	---	---	---	---	1.41	1.33	---	---	---
5	1.04	1.14	1.24	1.39	1.43	1.37	1.17	1.10	0.99
6	.99	1.07	1.20	1.36	1.41	1.25	---	---	---
7	---	---	---	---	Cloudy	---	---	---	---
8	---	---	---	---	Cloudy	---	---	---	---
9	---	---	---	---	1.33	1.29	1.16	1.02	.98
10	1.04	1.11	1.20	1.29	1.37	1.24	---	1.05	.95
11	---	---	---	---	Cloudy	---	---	---	---
12	---	---	---	---	---	1.35	1.22	1.08	.97
13	1.03	1.11	1.21	1.32	1.42	1.33	1.17	1.11	.97
14	.99	1.07	1.20	1.32	1.40	1.31	1.18	1.13	.97
15	1.02	1.11	1.20	1.34	1.43	1.31	1.15	1.09	.96
16	---	---	---	---	Cloudy		---	---	---
18	1.00	1.13	1.20	1.38	1.37	---	---	---	---
19	---	---	---	---	---	1.30	---	---	---
20	h.82	h.92	h1.03	h1.21	1.33	---	---	---	---
21	---	---	---	1.34	1.42	---	1.12	1.07	.94
22	---	---	---	---	Cloudy	---	---	---	---
23	---	---	---	---	Cloudy	---	---	---	---
24	---	---	---	---	Cloudy	---	---	---	---
25	d.89	d.99	d1.08	d1.09	d1.23	d1.18	d1.07	d1.02	.94
26	---	---	---	d1.18	d.93		---	---	---
27	---	---	---	1.38	1.45	1.37	1.27	1.16	1.04
28	1.06	1.18	1.24	1.39	---	1.41	1.31	1.22	1.14
29	.95	1.05	1.16	1.30	1.41	h1.24	h1.14	h.98	h.91
Averages	.98	1.08	1.18	1.31	1.36	1.31	1.18	1.09	.98

TABLE MOUNTAIN, CALIF.

Date	Air mass								
	5.0	4.0	3.0	2.0	*0.75	2.0	3.0	4.0	5.0
Feb.									
1	---	---	---	1.59	---	---	---	---	---
2	---	---	---	1.57	---	---	---	---	---
3	---	---	---	1.53	---	---	---	---	---
4	---	---	---	1.53	---	---	---	---	---
5	---	---	---	1.56	---	---	---	---	---
7	---	---	---	1.53	---	---	---	---	---
9	---	---	---	1.55	---	---	---	---	---
10	---	---	---	1.53	---	---	---	---	---
12	---	---	---	1.52	---	---	---	---	---
13	---	---	---	1.51	---	---	---	---	---
14	1.22	1.33	1.45	1.57	---	---	---	---	---
19	---	---	---	1.48	---	---	---	---	---
27	1.26	1.35	1.45	1.56	---	---	---	---	---
28	---	1.28	1.38	1.51	---	---	---	---	---
29		---	---	1.52	---	---	---	---	---
Averages	1.24	1.32	1.43	1.54	---	---	---	---	---

MADISON, WIS.

Date	Sun's zenith distance								
	A.M.				0.0°	P.M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Feb.									
3	---	---	k1.06	k1.26	k1.28	k1.27	h1.04	h0.87	h0.82
4	---	---	h1.18	h1.27	h1.30	h1.32	h1.10	h.92	h.81
5	---	k0.98	k1.12	---	---	---	---	---	---
18	---	---	---	---	1.45	---	---	---	---
20	---	---	---	1.27	---	---	---	---	---
21	0.84	1.10	1.23	1.43	1.48	1.42	1.25	1.15	1.03
25	---	---	---	1.43	1.51	1.43	1.27	1.16	1.04
26	---	---	---	---	1.37	1.29	1.12	.97	.88
28	1.02	1.11	1.27	1.42	1.51	---	---	---	---
29	k.82	k.96	k1.12	k1.32	k1.42	---	---	---	---
Averages	.89	1.04	1.16	1.34	1.42	1.35	1.16	1.01	.92

WASHINGTON, D. C. (WBCO)

Date	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Feb.									
8	---	sk0.79	---	sk1.05	---	sk1.15	sk0.95	---	---
16	---	---	sk1.10	sk1.27	---	---	---	---	---
20	---	---	---	---	---	sk1.14	sk1.03	0.85	---
23	0.61	.69	.89	1.11	---	1.23	sk.91	.80	---
Averages	.61	.74	1.00	1.14	---	1.17	.96	.82	---

BLUE HILL, MASS.

Date	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
Feb.									
1	0.94	1.04	1.17	1.28	1.29	1.28	---	---	---
5	---	---	---	---	---	---	1.03	0.87	0.70
8	h.78	h.82	h.96	---	---	---	---	---	---
13	hk.54	hk.70	hk.78	hk1.03	---	---	---	---	---
14	.76	.86	.99	1.15	1.15	---	---	---	---
16	.94	1.03	1.17	1.33	1.36	1.30	1.11	.99	.91
19	.78	---	---	---	---	---	---	---	---
21	.89	.97	1.09	1.23	1.30	---	---	---	---
22	---	---	1.11	1.27	1.37	---	1.14	.80	---
23	---	---	---	---	---	---	1.13	---	---
26	.76	.90	1.04	1.28	1.39	1.32	1.16	.95	---
Averages	.80	.90	1.04	1.22	1.31	1.30	1.11	.90	.80

* Extrapolated
d Dust
h Haze
k Smoke
sk Slight smoke

Langleys is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

FEBRUARY 1956

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-------	5	6	7	8	9	10	11		12	13	14	15	16	17	18		19	20	21	22	23	24	25	
Langleys------	75	63	52	67	22	31	21	17	35	57	56	24	[illegible]	31	19	10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Date------	26	27	28	29	1	2	3																	
Langleys-- ----	59	57	88	134	116	50	67	82																

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-------- --	5	6	7	8	9	10	11		12	13	14	15	16	17	18		19	20	21	22	23	24	25	
Langleys-- ----	174	191	67	223	27	24	21	104	40	204	255	[illegible]	[illegible]	16	21	[illegible]	254	125	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Date------ ----	26	27	28	29	1	2	3																	
Langleys--- ---	261	224	82	299	333	71	261	219																

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date----- -- -	5	6	7	8	9	10	11		12	13	14	15	16	17	18		19	20	21	22	23	24	25	
Langleys------	536	238	95	554	20	26	16	212	33	417	165	27	613	50	[illegible]	(267)	101	256	524	[illegible]	20	[illegible]	[illegible]	[illegible]
Date ----- ----	26	27	28	29	1	2	3																	
Langleys-	603	257	96	543	577	56	568	386																

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date--- -------	5	6	7	8	9	10	11		12	13	14	15	16	17	18		19	20	21	22	23	24	25	
Langleys- -----	258	75	76	238	31	33	24	105	36	185	149	30	264	51	18	105	[illegible]	219	216	305	[illegible]	[illegible]	[illegible]	237
Date------ - -	26	27	28	29	1	2	3																	
Langleys---- --	312	84	162	313	303	68	291	219																

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date----- -- -	5	6	7	8	9	10	11		12	13	14	15	16	17	18		19	20	21	22	23	24	25	
Langleys------	71	104	101	77	48	43	39	69	60	111	87	53	59	64	24	68	200	169	101	75	146	91	66	121
Date ----- - -	26	27	28	29	1	2	3																	
Langleys-- - -	71	106	133	144	102	106	84	107																

Note: Langley is the unit used to denote one gram calorie per square centimeter

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month FEBRUARY 1956

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	*97	*1	*18	*0	*143	*-11	74	120	*12	*152	*-18	*94	90	95	*41	*148	*-29	*160	*127	54	89	105	111	**	**	**	**	**	**			[illegible]

The measurement is made with a Beckman and Whitney net exchange radiometer over a plot of alfalfa. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh. The instrument with which they were measured has not been checked by the Weather Bureau.

* Estimated values owing to occurrence of rain during period. While rain is falling, radiation is assumed to be zero.

** Radiometer inoperative.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area
1956														
Feb. 5-----	26	---	101	168	124	92	7	53	264	270	269	293	430	---
Feb. 6-----	31	427	16	103	65	106	19	53	214	165	305	165	453	639
Feb. 7-----	25	326	22	496	---	410	16	80	(104)	131	172	153	85	680
Feb. 8-----	20	293	36	458	290	347	(22)	139	238	299	313	280	367	671
Feb. 9-----	19	433	89	118	242	148	15	125	179	48	307	34	55	693
Feb. 10-----	17	447	37	70	191	115	(24)	153	260	44	232	16	509	699
Feb. 11-----	32	403	84	348	106	185	18	122	232	39	102	41	519	699
Average------	24	388	55	251	170	201	(17)	104	(213)	142	243	140	345	680
Feb. 12-----	37	452	122	(510)	136	422	25	181	168	62	258	46	502	696
Feb. 13-----	45	464	160	496	212	425	18	82	(297)	274	280	208	186	648
Feb. 14-----	47	474	168	452	200	383	(30)	16	(317)	296	144	262	255	698
Feb. 15-----	60	483	36	215	372	127	35	48	(173)	55	172	45	414	461
Feb. 16-----	61	375	59	490	144	74	(46)	125	(216)	363	291	339	349	535
Feb. 17-----	42	484	145	413	158	157	(50)	181	336	88	136	73	(297)	333
Feb. 18-----	46	467	81	(438)	184	456	(52)	192	353	24	214	10	251	603
Average------	48	457	110	(431)	201	292	(37)	118	(266)	166	213	140	(322)	568
Feb. 19-----	51	462	104	304	118	236	(58)	189	354	314	175	265	315	695
Feb. 20-----	78	480	213	265	100	216	53	118	355	217	109	226	264	677
Feb. 21-----	84	500	258	543	168	475	34	57	(336)	311	312	273	272	661
Feb. 22-----	91	487	241	534	198	475	42	85	(139)	386	238	359	114	704
Feb. 23-----	95	377	171	537	140	315	73	102	182	365	202	354	---	702
Feb. 24-----	97	292	252	501	143	196	73	---	(387)	386	205	358	---	---
Feb. 25-----	92	523	268	446	121	92	72	---	(302)	66	97	68	---	675
Average------	84	446	215	447	141	286	(58)	110	(294)	292	191	272	241	686
Feb. 26-----	107	---	129	451	131	---	68	---	(408)	416	211	412	---	687
Feb. 27-----	109	544	288	(488)	94	---	(68)	---	396	287	359	273	---	640
Feb. 28-----	98	548	209	558	221	---	(81)	---	340	133	125	133	---	676
Feb. 29-----	105	551	105	600	124	---	90	---	389	357	243	368	447	672
Mar. 1-----	97	378	252	577	52	495	(100)	---	380	426	72	395	157	653
Mar. 2-----	123	552	50	216	100	253	(106)	---	(425)	109	287	114	(395)	647
Mar. 3-----	124	549	217	269	143	272	117	---	(328)	415	119	396	406	650
Average------	109	520	179	(451)	123	---	(90)	---	(381)	306	202	299	(351)	661

	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Dodge City, Kans.	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.	Glasgow, Mont.	Grandby, Colo.
1956															
Feb. 5-----	207	89	341	287	233	234	305	151	482	129	48	(337)	114	136	399
Feb. 6-----	265	184	31	66	436	37	234	148	463	335	61	449	305	133	316
Feb. 7-----	82	430	127	340	336	79	149	187	435	365	20	236	378	203	181
Feb. 8-----	190	352	281	43	125	178	307	132	363	413	24	218	364	234	426
Feb. 9-----	295	102	38	163	452	75	85	161	204	405	34	148	367	205	372
Feb. 10-----	281	264	60	169	451	328	84	214	485	384	59	168	358	106	337
Feb. 11-----	322	299	55	157	441	59	---	89	479	271	73	458	389	227	172
Average------	235	246	133	175	353	141	194	155	416	329	46	(288)	325	178	315
Feb. 12-----	82	(456)	91	80	417	202	---	120	490	181	129	467	398	127	212
Feb. 13-----	205	427	293	293	457	244	276	145	488	392	118	(435)	368	232	181
Feb. 14-----	146	(425)	183	126	69	262	(346)	179	454	417	36	(434)	208	232	369
Feb. 15-----	178	262	153	204	63	317	104	(266)	200	401	31	172	443	153	286
Feb. 16-----	341	182	298	32	73	291	380	123	382	430	---	148	460	435	226
Feb. 17-----	361	342	86	18	111	123	112	223	512	162	52	158	348	245	292
Feb. 18-----	282	388	138	361	69	379	52	259	329	447	160	265	379	293	289
Average------	228	(354)	177	159	180	260	(211)	(188)	408	347	88	(297)	372	245	265
Feb. 19-----	274	357	319	264	366	310	373	278	503	435	172	143	396	357	450
Feb. 20-----	340	99	412	396	488	401	192	226	485	441	176	478	372	291	457
Feb. 21-----	358	481	192	298	479	349	393	95	463	440	58	426	443	243	445
Feb. 22-----	355	472	268	242	---	325	402	259	502	287	39	331	179	251	452
Feb. 23-----	306	384	---	85	(183)	406	392	272	451	238	41	281	254	192	334
Feb. 24-----	391	218	53	255	255	78	405	318	413	503	---	447	405	336	191
Feb. 25-----	68	319	148	452	497	316	102	302	517	503	75	496	447	---	331
Average------	299	333	232	285	(378)	312	323	250	476	407	93	372	357	278	380
Feb. 26-----	346	401	355	350	430	388	438	(333)	529	431	89	431	455	325	351
Feb. 27-----	357	273	84	74	508	187	299	328	572	502	79	524	473	382	333
Feb. 28-----	313	490	353	480	521	408	140	302	572	508	96	529	475	319	550
Feb. 29-----	419	525	372	441	516	432	444	289	554	502	179	490	378	343	494
Mar. 1-----	432	522	351	278	493	327	447	---	204	498	---	214	405	346	---
Mar. 2-----	106	60	---	384	504	113	116	284	523	509	204	121	458	288	---
Mar. 3-----	128	100	---	477	487	186	443	122	567	490	127	547	473	212	---
Average------	300	339	303	355	494	292	332	(276)	503	492	129	408	445	317	---

	Grand Junction,Colo.	Great Falls, Mont.	Greensboro, N.C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Las Vegas, Nev.	Lemont, Ill.
1956											
Feb. 5-----	389	192	183	180	148	295	437	138	286	346	277
Feb. 6-----	365	178	37	119	249	49	474	79	458	353	22
Feb. 7-----	204	169	248	446	452	253	459	34	442	405	110
Feb. 8-----	345	290	222	400	439	146	475	282	103	418	110
Feb. 9-----	409	263	39	201	---	77	479	76	248	426	125
Feb. 10-----	375	91	236	165	232	57	468	48	139	418	229
Feb. 11-----	283	246	42	---	258	28	474	57	479	382	79
Average------	339	204	144	252	296	129	467	102	308	393	136
Feb. 12-----	---	268	266	---	464	73	480	179	424	423	230
Feb. 13-----	246	286	269	454	465	354	472	177	304	424	180
Feb. 14-----	334	330	194	431	486	121	477	173	130	426	303
Feb. 15-----	327	245	175	177	421	178	490	38	340	418	293
Feb. 16-----	172	319	154	86	287	35	461	211	239	440	53
Feb. 17-----	375	232	51	184	209	76	447	49	163	415	62
Feb. 18-----	252	354	266	473	421	306	419	33	449	397	414
Average------	284	291	196	301	393	163	464	123	293	421	219
Feb. 19-----	494	303	128	265	375	57	506	316	220	447	282
Feb. 20-----	460	(227)	151	191	114	358	466	124	339	447	330
Feb. 21-----	470	254	298	513	505	334	467	239	498	433	447
Feb. 22-----	399	257	317	509	504	356	341	279	432	361	367
Feb. 23-----	291	222	261	363	521	339	484	351	310	454	394
Feb. 24-----	161	323	53	221	286	28	549	286	206	337	44
Feb. 25-----	506	368	52	140	380	248	557	117	312	493	425
Average------	397	(279)	180	314	384	246	481	245	331	425	327
Feb. 26-----	243	215	315	418	501	413	556	330	491	461	453
Feb. 27-----	512	377	124	114	139	144	571	153	361	496	120
Feb. 28-----	530	210	331	176	455	416	567	398	565	504	468
Feb. 29-----	469	367	340	553	554	411	523	351	549	439	436
Mar. 1-----	524	203	281	535	533	285	579	371	245	501	208
Mar. 2-----	467	359	200	237	123	399	564	156	173	495	427
Mar. 3-----	374	309	141	320	204	202	524	300	404	470	368
Average------	445	291	247	336	358	324	555	294	398	481	354

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

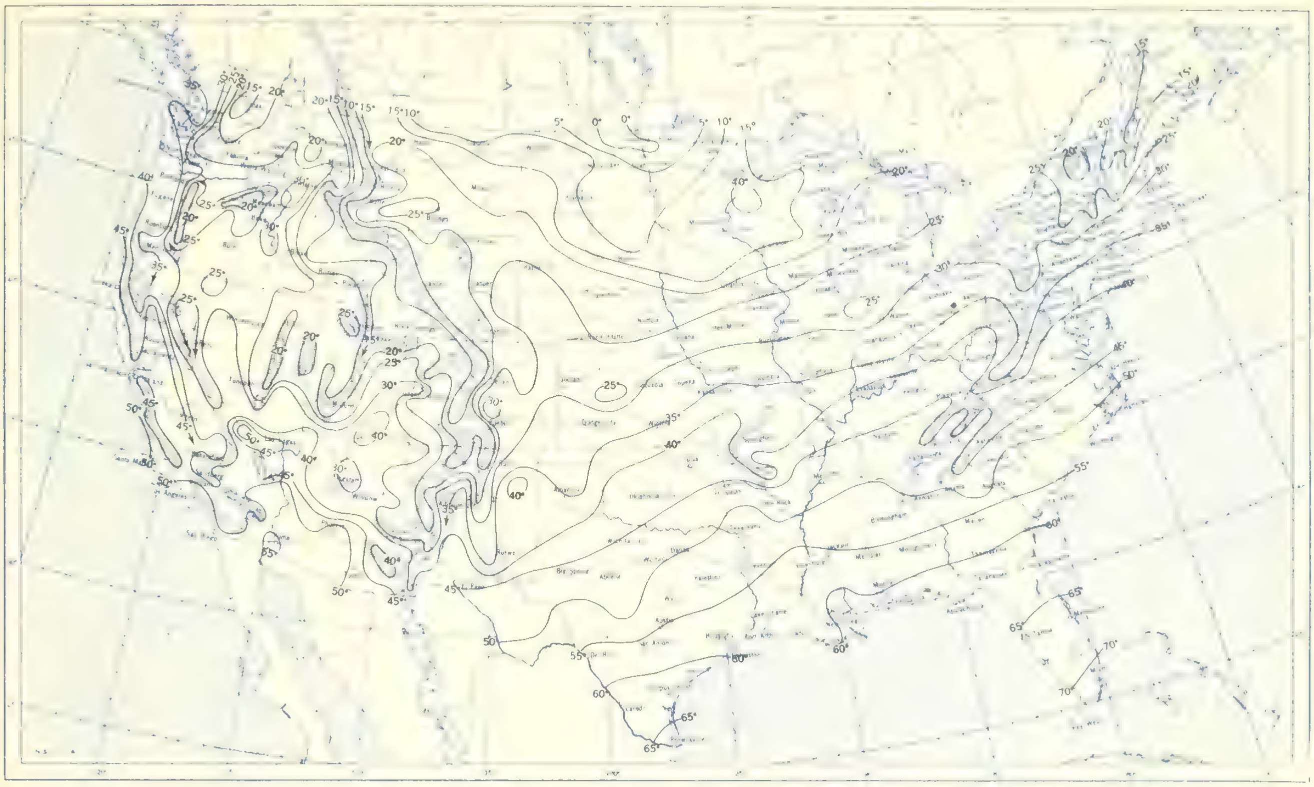
Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued

1956	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Prosser 4 NE, Wash.	Rapid City, S. Dak.	Richland, Wash.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash.	Seattle, Wash. (U. of W.)	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island, Pacific Area	Washington, D. C. (Wilver Hill Obs.)	Winnipeg, Manitoba
Feb. 5------	40	126	179	(276)	43	204	315	310	107	279	306	187	186	---	408	312	---	243	238	121	(190)	472	(260)	145	342	239	289	48	45	210	288	147	149	215	398	311	513	306	128
Feb. 6------	130	363	360	102	30	231	371	413	230	184	64	82	381	---	143	224	---	313	218	421	(323)	449	(396)	198	94	130	41	58	20	94	40	319	238	67	325	106	569	23	103
Feb. 7------	298	365	352	233	24	142	380	380	369	143	85	404	246	224	330	153	---	321	233	423	221	68	---	244	110	56	193	74	82	114	20	296	485	228	178	---	571	349	132
Feb. 8------	17	382	374	89	16	270	228	440	179	291	266	313	73	95	(137)	264	---	281	116	460	311	455	(409)	108	309	154	313	165	145	110	308	78	456	143	135	319	521	347	271
Feb. 9------	76	422	400	288	82	310	502	189	42	71	72	204	219	313	462	59	---	223	107	460	157	386	(416)	269	93	65	97	108	81	92	147	232	348	121	348	96	577	170	212
Feb. 10------	36	404	399	281	127	285	440	249	121	74	180	187	331	(280)	469	27	---	297	127	459	320	492	(435)	108	239	88	261	23	23	123	103	222	319	265	461	---	586	328	127
Feb. 11------	198	372	368	86	135	164	202	---	60	39	28	158	399	129	457	45	---	269	271	435	149	495	(438)	232	30	79	43	10	32	93	24	356	155	31	461	27	583	33	193
Average-------	114	348	347	(194)	65	229	348	330	158	154	143	219	262	(206)	(344)	155	---	278	187	397	(239)	402	(392)	186	174	116	177	69	61	119	133	236	307	153	329	172	560	222	167
Feb. 12------	376	240	316	113	140	145	189	450	214	117	228	271	438	81	472	110	---	240	268	415	344	491	(339)	159	185	81	198	168	88	240	221	411	449	56	465	153	594	160	262
Feb. 13------	350	135	140	171	151	239	535	395	385	318	231	435	435	156	485	269	---	134	296	208	161	321	(122)	273	309	169	194	137	235	303	166	403	509	94	477	300	595	215	154
Feb. 14------	295	361	191	235	46	270	424	418	114	299	212	154	395	72	487	320	---	266	287	260	375	343	---	167	265	218	315	306	102	256	137	385	---	106	479	274	593	267	(293)
Feb. 15------	50	275	146	310	54	163	446	342	138	70	45	102	227	341	469	113	---	215	313	170	361	371	---	207	43	43	110	303	308	321	34	192	286	189	449	(50)	446	148	(287)
Feb. 16------	134	432	449	106	67	251	464	298	80	375	371	153	276	363	221	352	---	296	157	398	175	303	---	333	399	314	361	92	82	204	323	181	382	330	415	385	352	378	111
Feb. 17------	36	420	394	184	78	152	470	407	58	72	46	59	74	225	405	317	---	400	124	454	373	310	(446)	146	61	117	39	152	112	267	32	---	408	19	468	68	546	48	(255)
Feb. 18------	88	344	350	368	157	245	530	276	164	26	64	260	290	85	507	43	---	294	190	370	214	415	(390)	218	38	61	179	144	101	171	133	399	469	122	482	35	509	276	306
Average-------	190	315	284	212	99	209	437	370	165	182	171	205	305	189	435	218	---	264	234	325	286	365	(324)	215	186	143	200	186	147	252	149	329	417	131	462	(181)	519	213	(238)
Feb. 19------	38	416	283	258	150	144	540	---	24	377	333	89	363	(295)	509	338	---	417	146	424	247	276	(451)	260	311	216	364	81	59	238	351	323	472	196	492	377	523	246	(321)
Feb. 20------	383	423	413	317	---	57	431	---	402	176	148	385	445	314	424	286	---	403	143	438	452	383	---	280	140	252	177	76	71	135	357	422	472	192	432	---	433	344	315
Feb. 21------	370	405	408	394	---	58	453	---	406	339	286	443	392	370	500	289	---	275	131	441	426	397	---	340	325	286	295	75	83	96	228	383	482	371	434	295	497	288	(317)
Feb. 22------	351	160	176	371	41	70	504	---	423	413	401	471	421	347	418	321	---	275	142	249	276	120	---	348	440	285	345	170	162	---	254	286	528	360	459	415	561	434	246
Feb. 23------	60	78	50	297	65	195	513	399	267	366	369	252	263	377	358	299	---	239	218	104	299	196	---	369	437	306	361	58	80	225	355	276	522	376	385	415	594	415	179
Feb. 24------	241	468	394	85	---	290	501	324	37	403	246	13	357	228	423	275	137	295	133	365	161	368	---	82	387	315	276	81	129	161	136	353	509	110	269	---	606	157	336
Feb. 25------	399	403	404	395	84	217	523	506	308	112	95	237	506	32	497	73	366	434	201	436	466	515	---	134	188	58	95	120	74	300	84	503	504	85	530	183	511	107	(353)
Average-------	263	336	304	302	85	147	495	---	267	312	268	270	392	(280)	447	269	---	334	159	351	332	322	---	259	328	245	273	94	94	193	252	364	499	241	429	337	532	284	(295)
Feb. 26------	319	486	486	389	124	119	561	487	429	423	427	479	292	363	502	424	171	272	149	463	466	473	---	329	454	308	404	63	61	269	320	336	419	289	539	448	503	465	(352)
Feb. 27------	409	467	465	352	80	205	566	537	131	259	188	41	497	423	520	384	118	233	95	508	426	513	---	349	236	268	211	105	79	233	145	434	---	171	544	244	576	328	(361)
Feb. 28------	456	498	442	423	215	223	(564)	545	396	183	172	370	---	439	521	211	147	438	85	518	246	526	---	---	213	223	141	86	104	221	203	496	---	368	541	---	573	411	(368)
Feb. 29------	447	406	422	406	258	317	542	495	474	397	353	534	---	417	519	444	271	342	231	481	384	489	---	341	459	353	305	55	57	226	316	470	---	388	481	---	593	432	323
Mar. 1------	123	476	---	126	257	178	(508)	265	311	427	370	438	343	325	504	418	233	364	178	505	297	231	---	298	436	330	393	50	123	212	405	349	562	307	314	421	573	421	258
Mar. 2------	344	474	---	387	(238)	265	566	204	486	70	96	489	515	149	525	171	90	(338)	91	529	77	504	---	378	52	135	144	79	89	315	213	492	533	101	546	59	615	218	229
Mar. 3------	468	449	---	372	240	259	522	542	251	418	371	92	521	359	529	422	322	428	321	516	418	551	---	184	435	294	364	137	245	225	285	500	489	227	543	410	461	326	360
Average-------	367	465	454	351	(202)	224	(547)	439	354	311	282	349	434	354	517	353	193	(345)	164	503	330	470	---	313	325	273	280	82	108	243	270	440	501	264	501	316	556	372	(322)

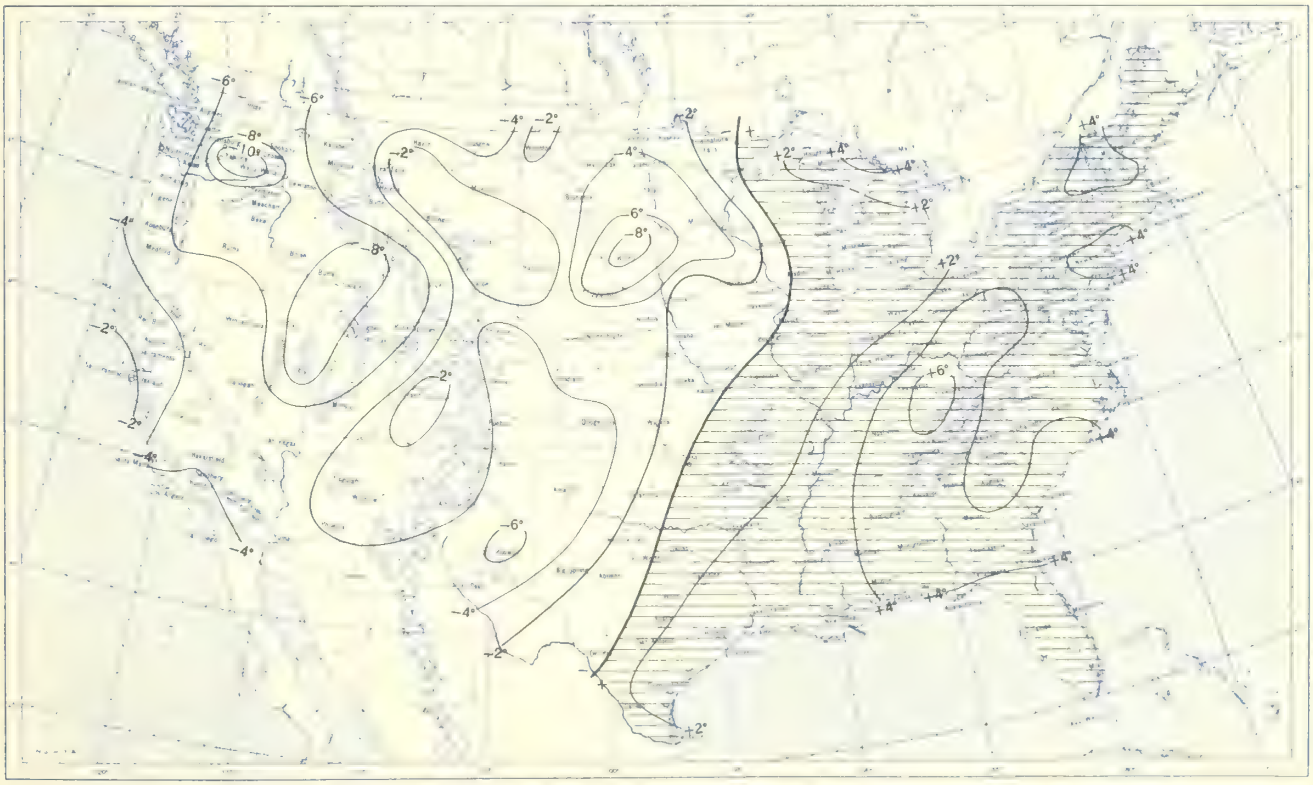
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

NWRC, Asheville, N. C. --- 5/11/56 --- 1850

Chart I. A. Average Temperature (°F.) at Surface, February 1956.

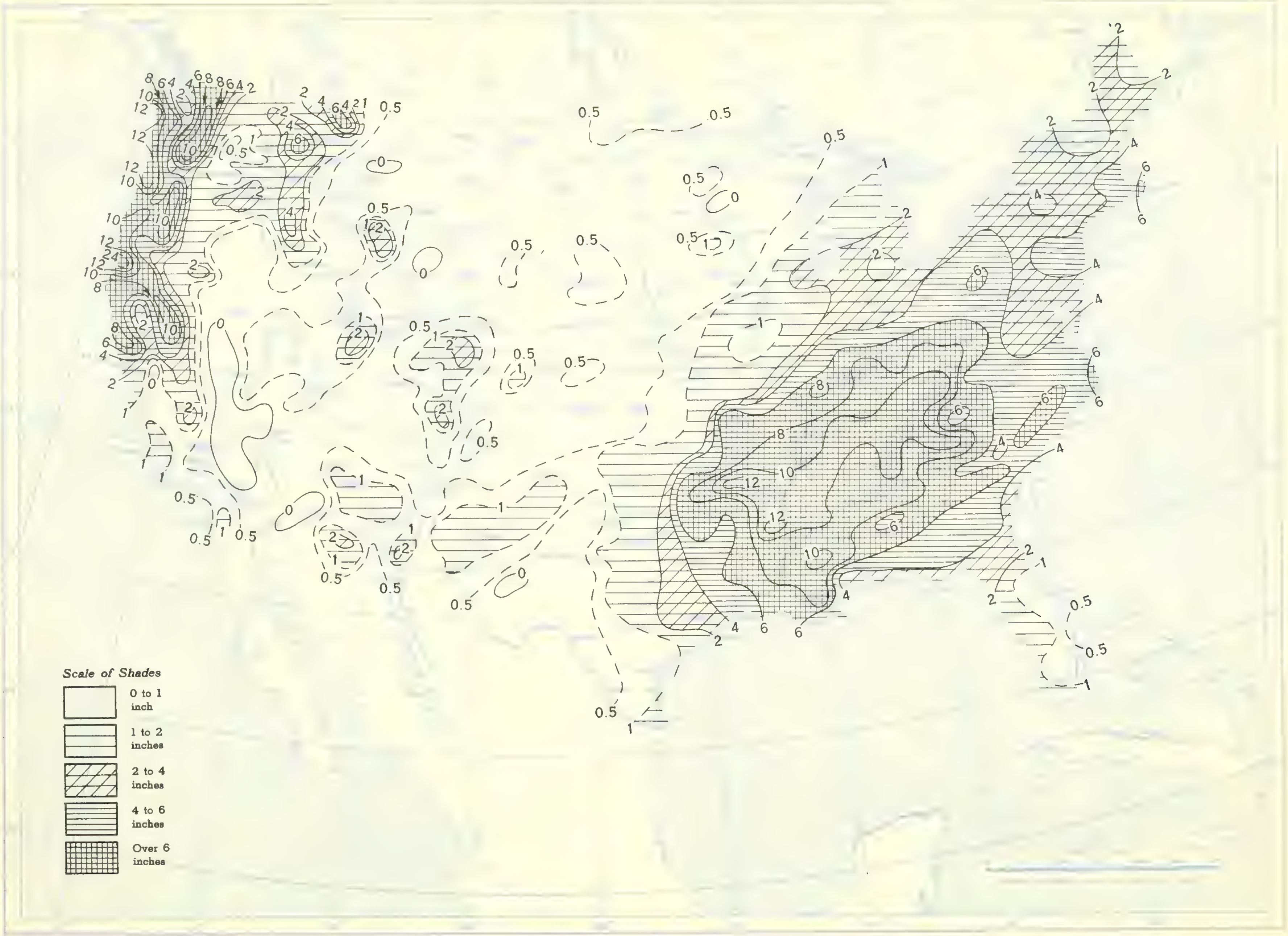


B. Departure of Average Temperature from Normal (°F.), February 1956.



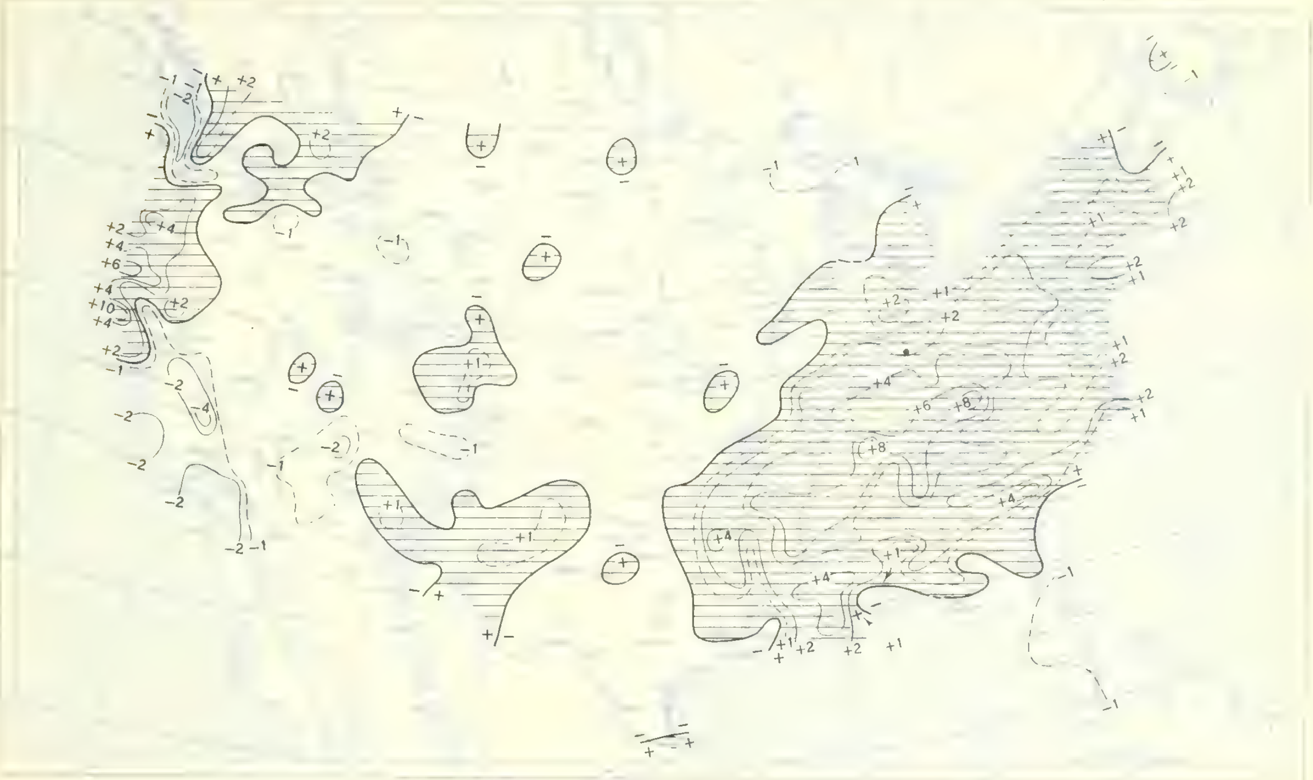
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), February 1956.

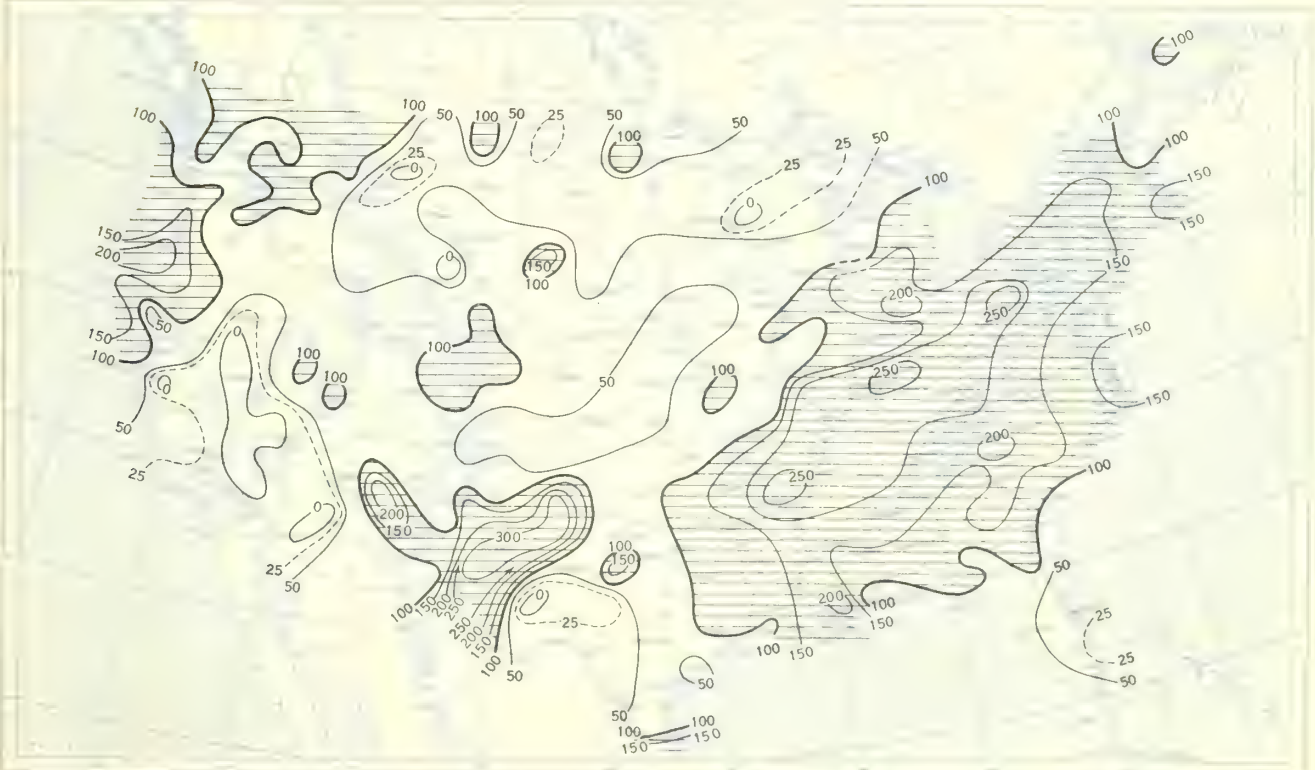


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), February 1956.

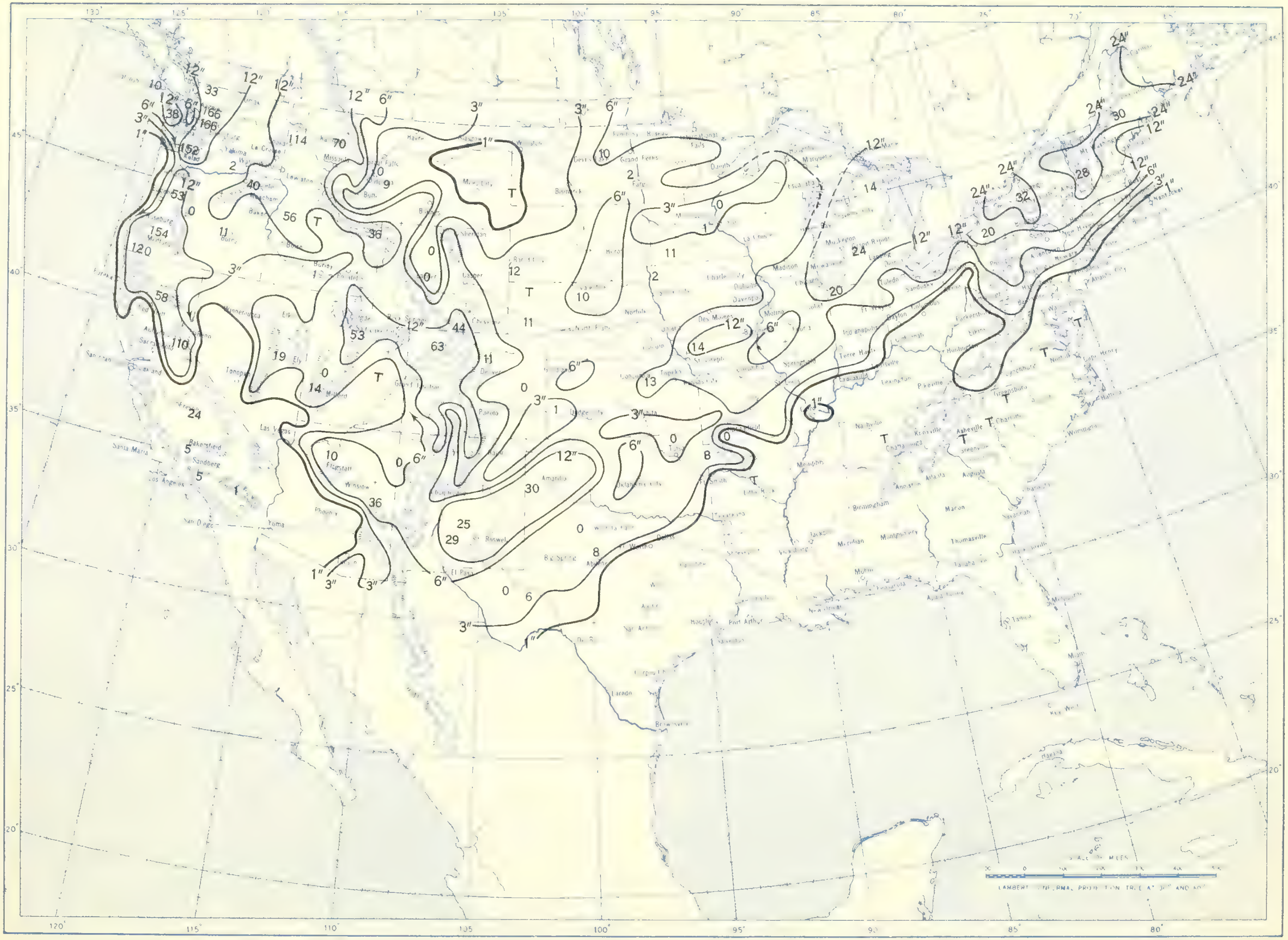


B. Percentage of Normal Precipitation, February 1956



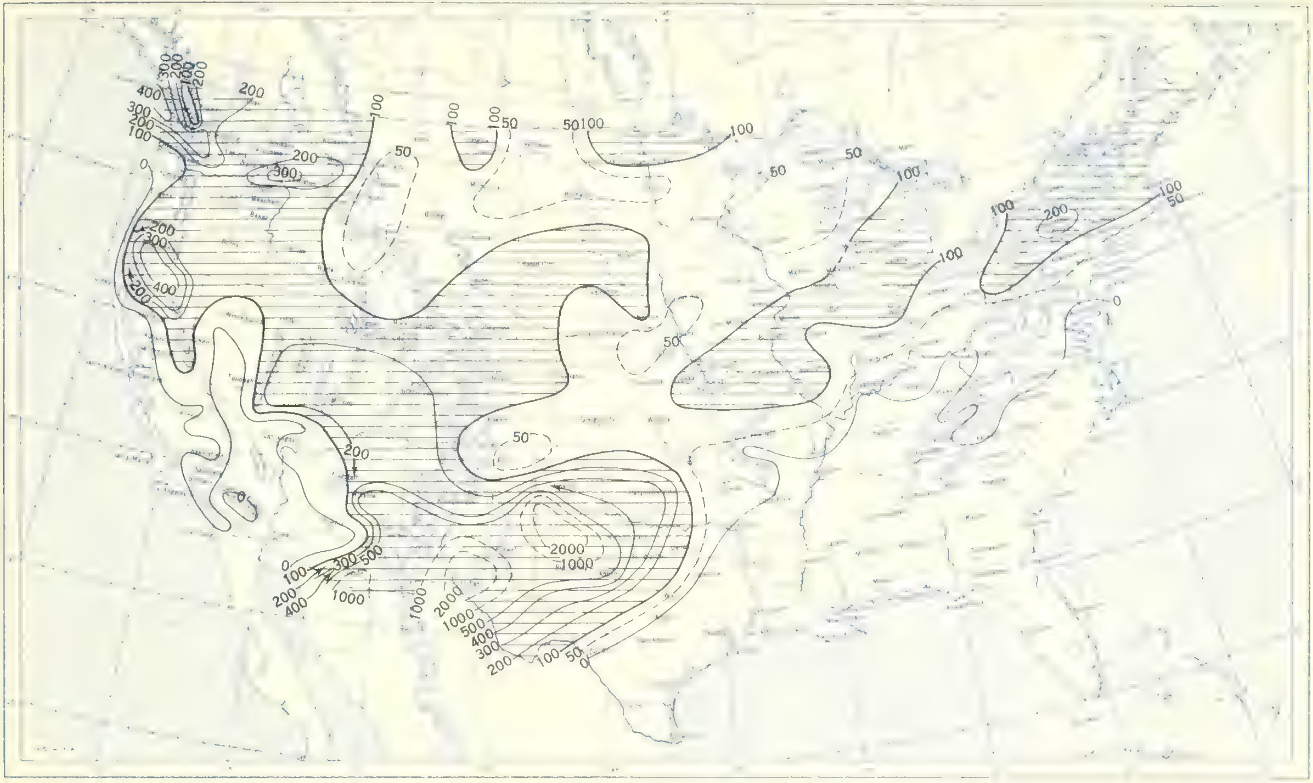
Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart IV. Total Snowfall (Inches), February 1956.

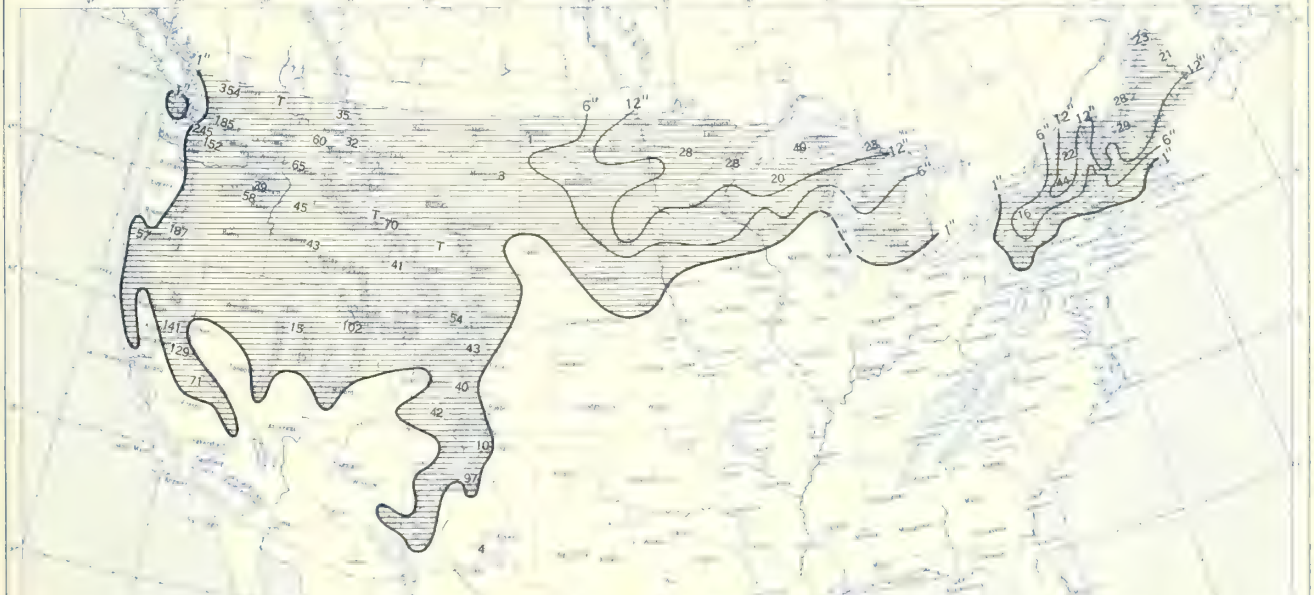


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Normal Snowfall, February 1956.

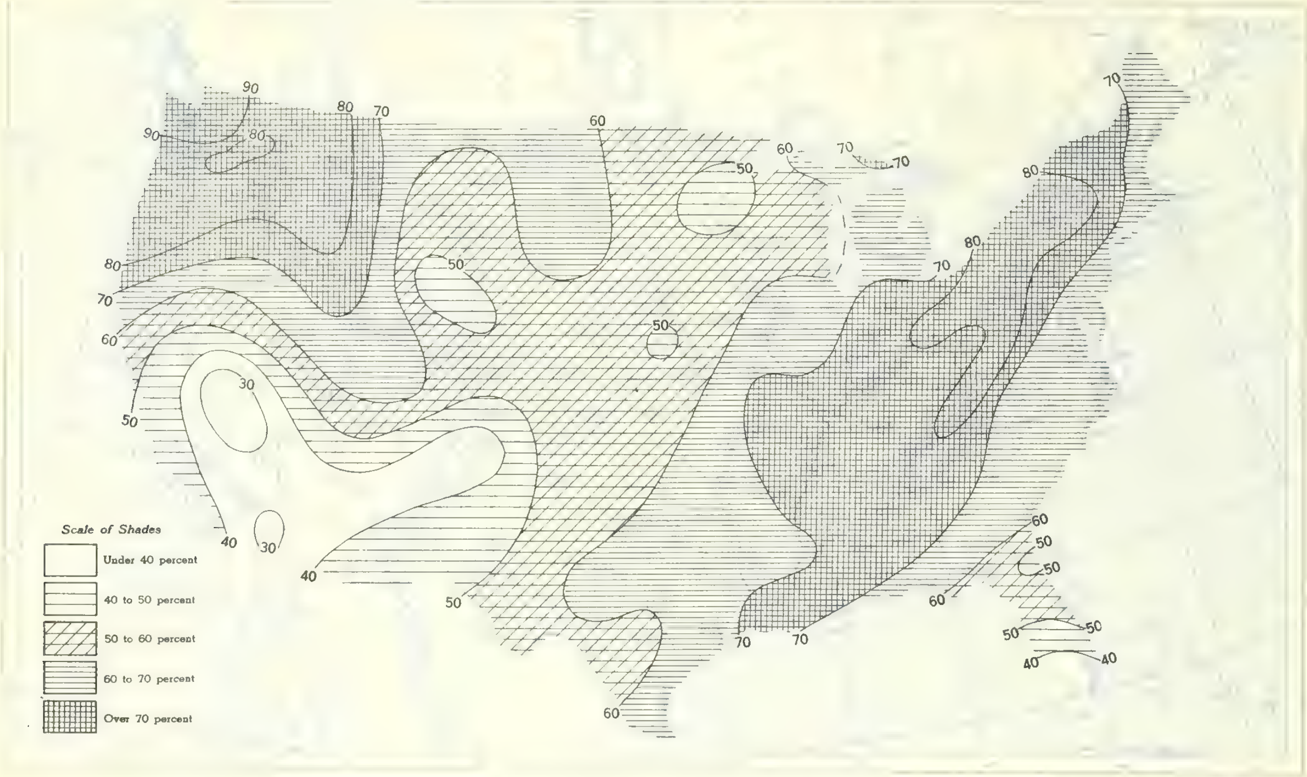


B. Depth of Snow on Ground (Inches). 7:30 a. m. E. S. T., February 27, 1956.

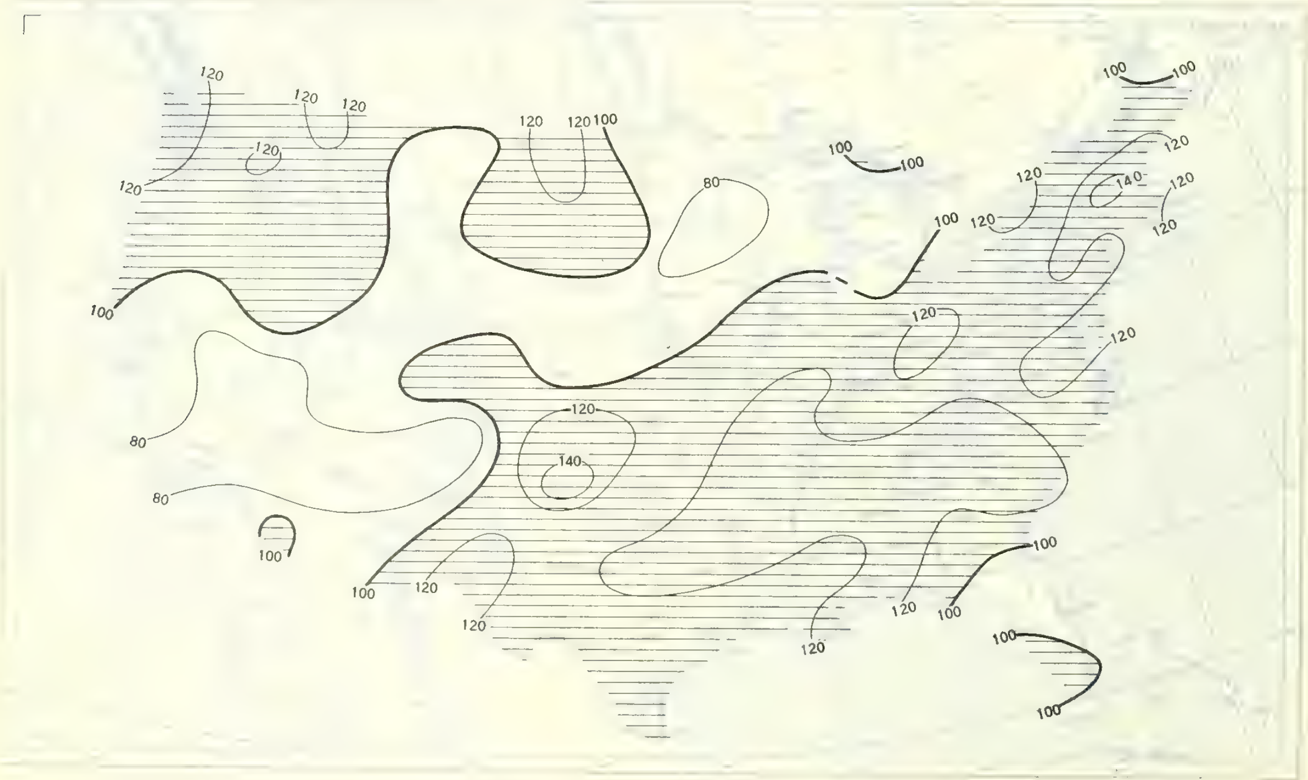


A. Amount of normal monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:30 a. m. E. S. T., of the Tuesday nearest the end of the month. It is based on reports from Weather Bureau and cooperative stations. Dashed line shows greatest southern extent of snowcover during month.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, February 1956.

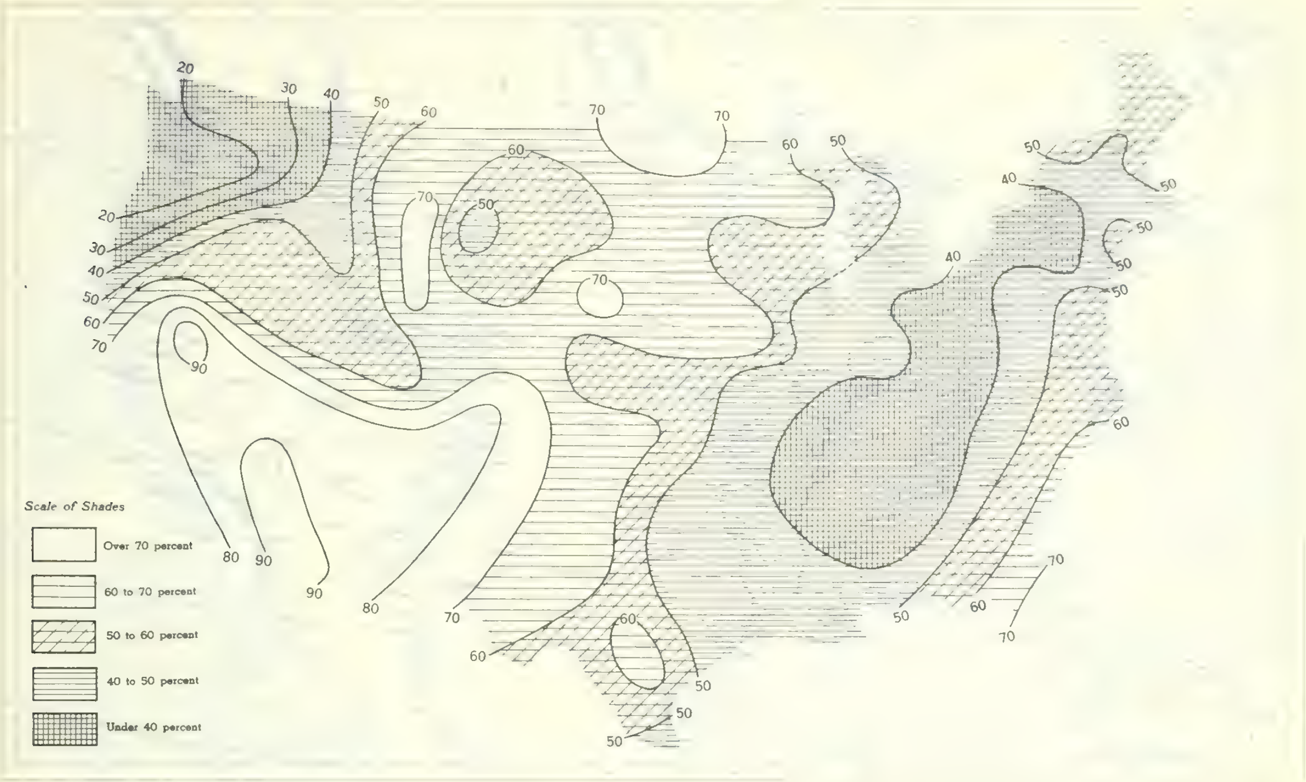


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, February 1956.

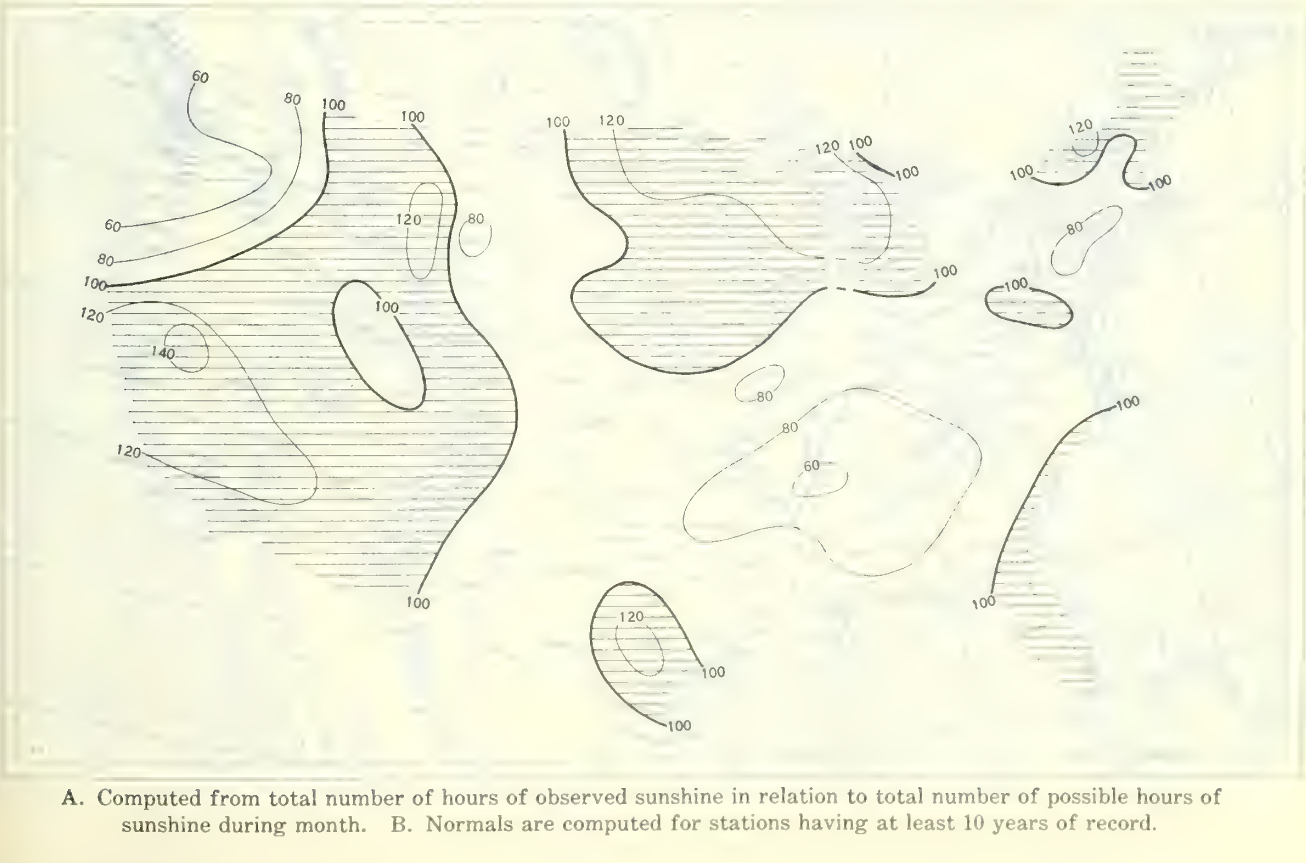


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, February 1956.



B. Percentage of Normal Sunshine, February 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, February 1956. Inset: Percentage of Mean Daily Solar Radiation, February 1956. (Mean based on period 1951-55.)

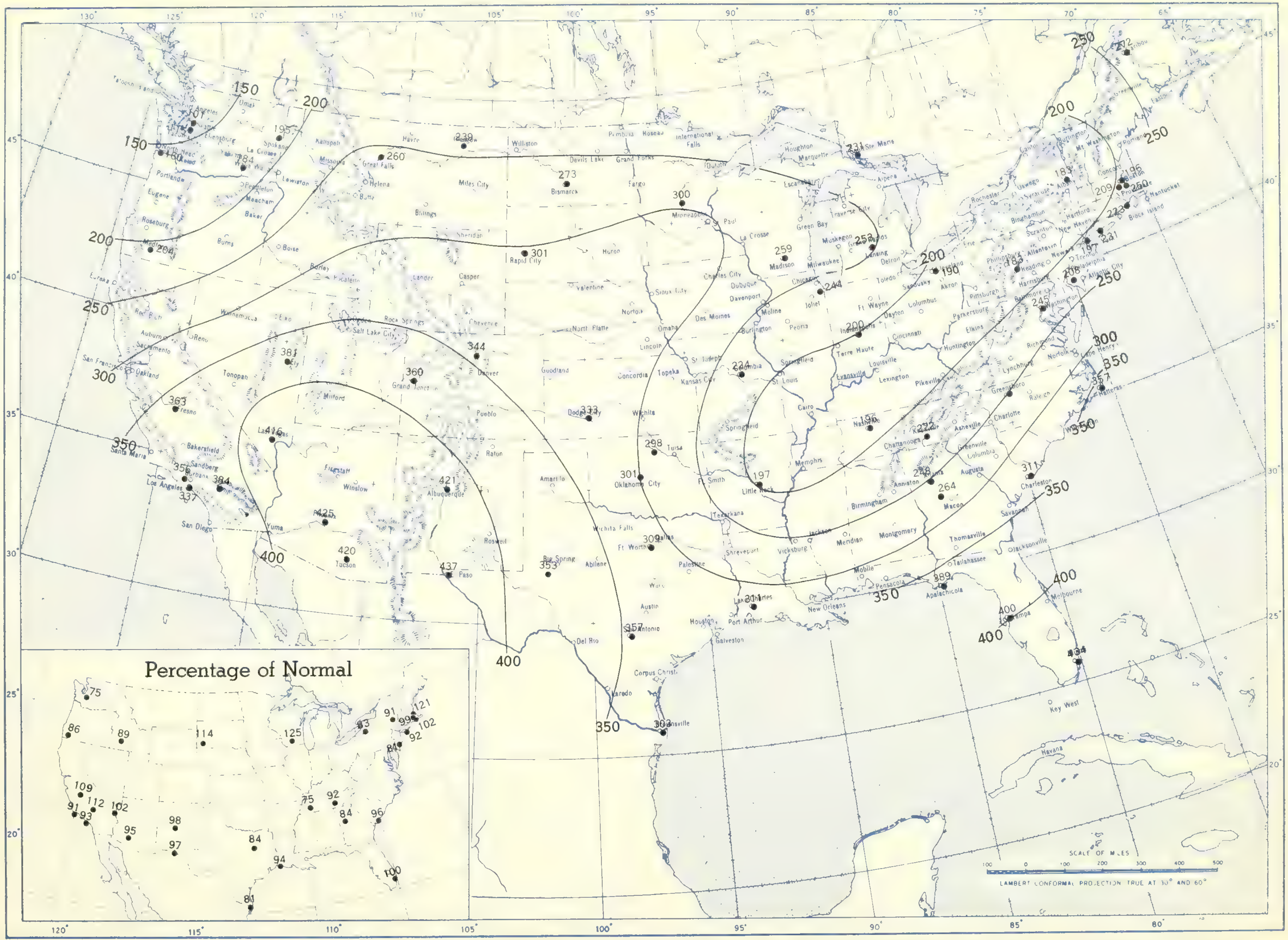
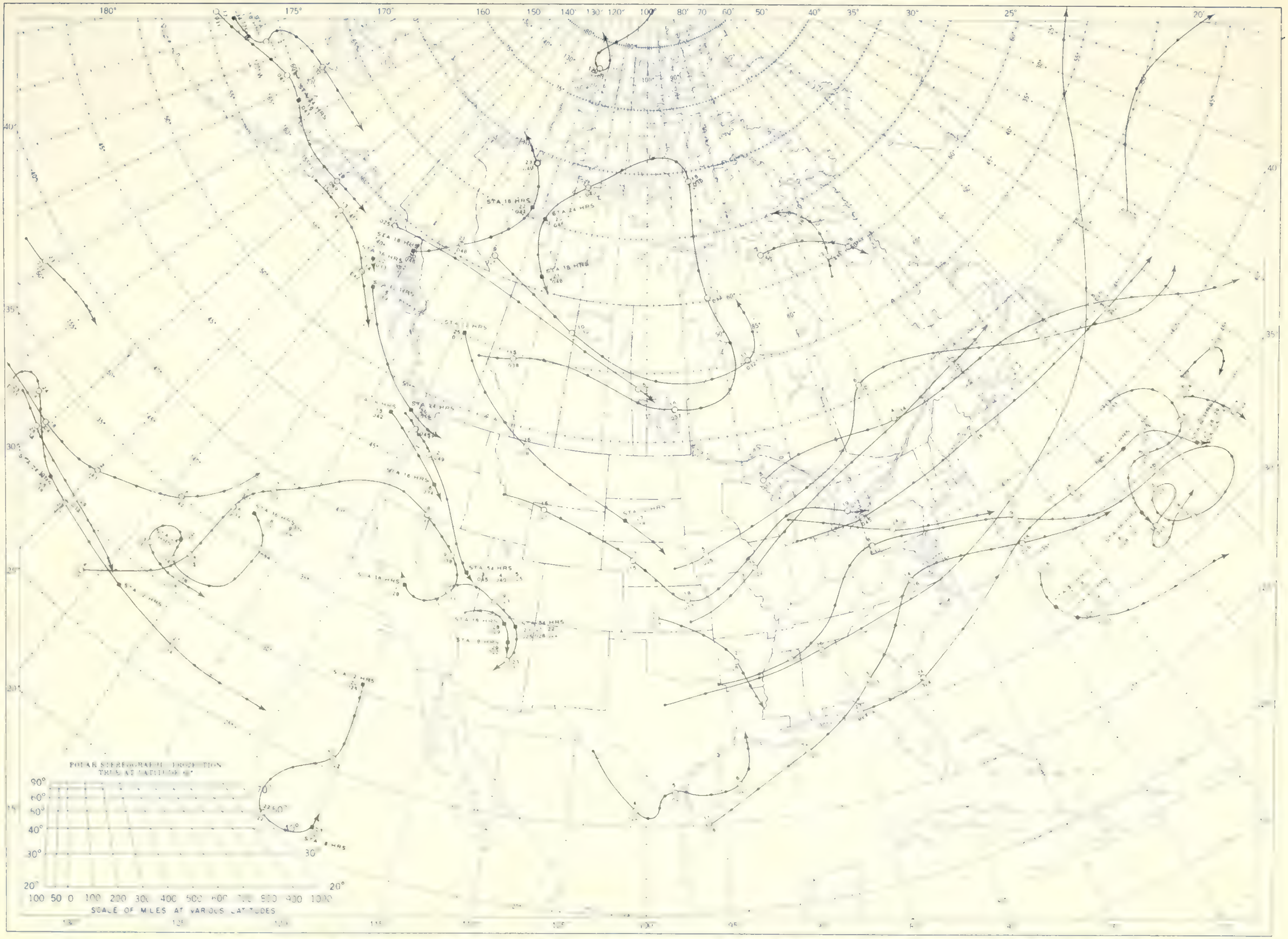


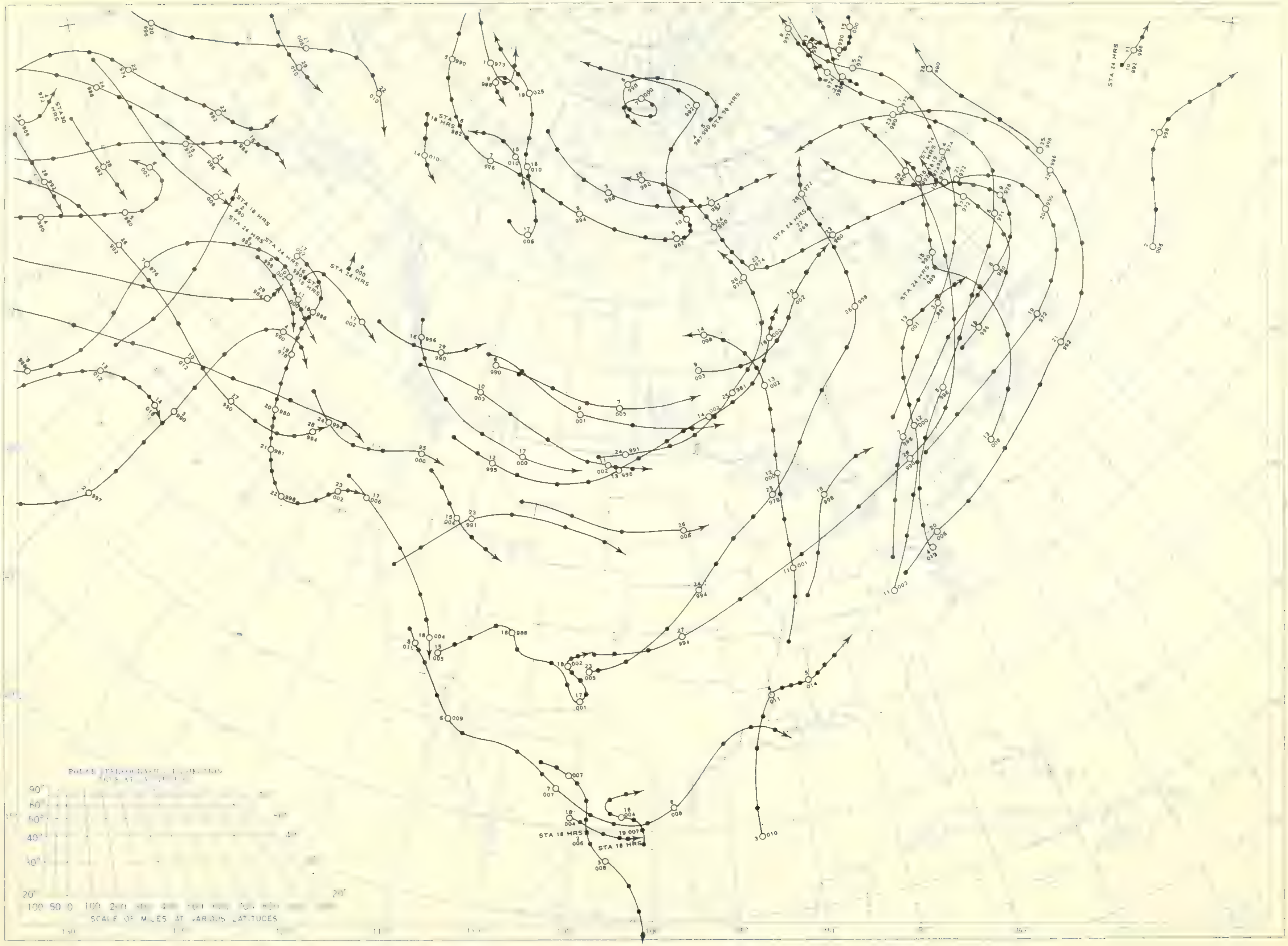
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.^{-2}). Basic data for isolines are shown on chart. Further estimates are obtained from supplementary data for which limits of accuracy are wider than for those data shown.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, February 1956.



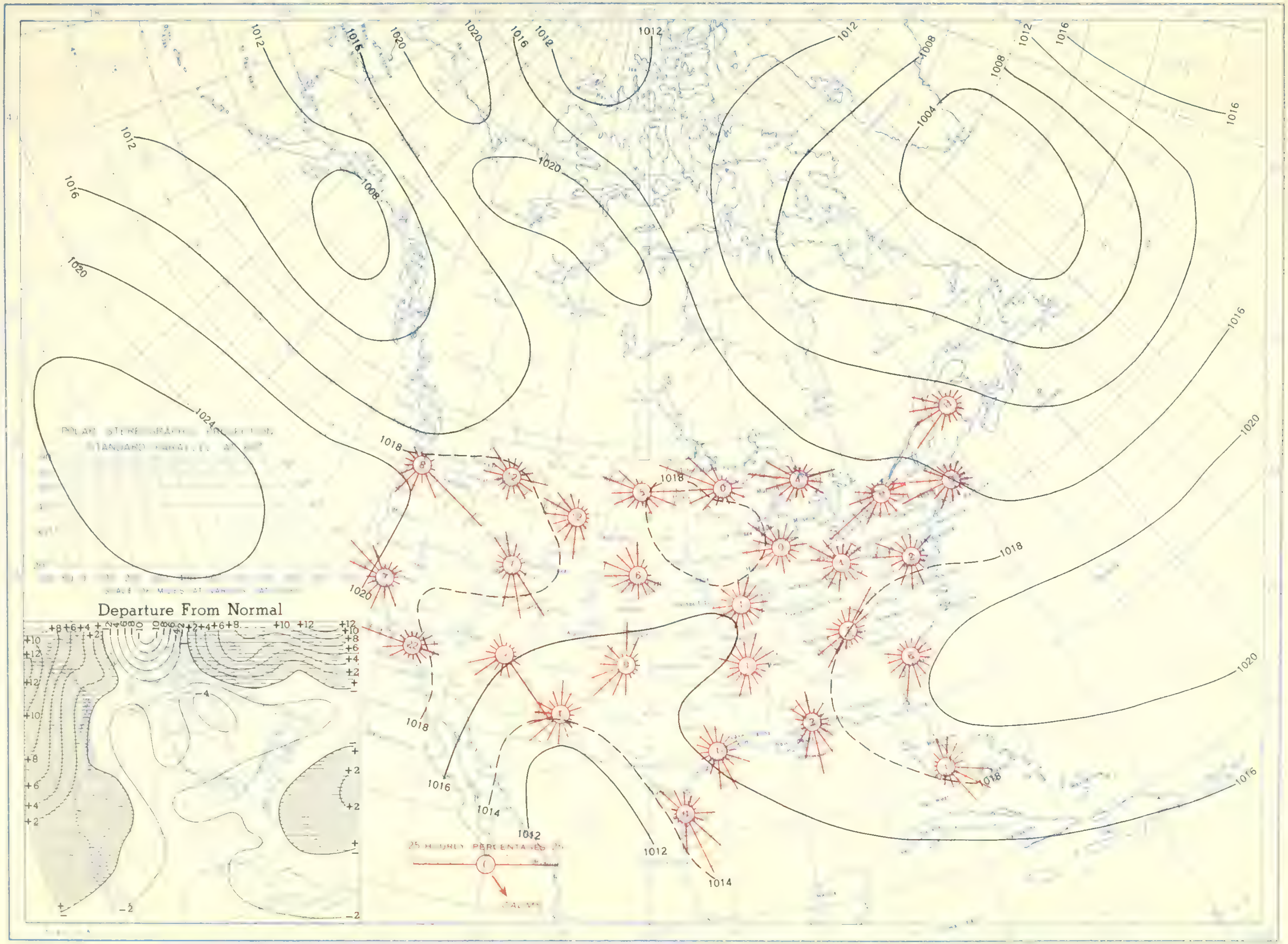
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, February 1956.



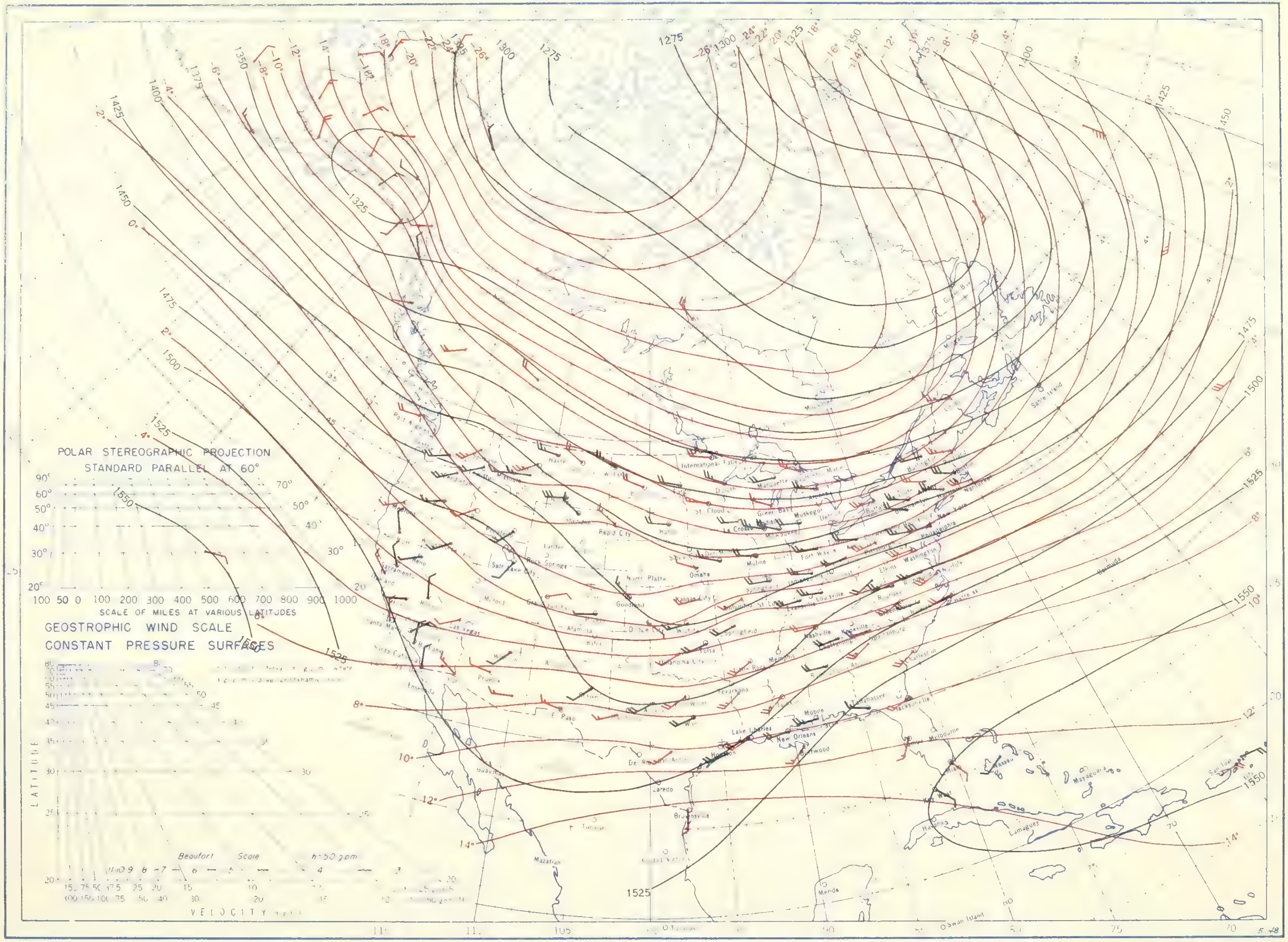
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, February 1956. Inset: Departure of Average Pressure (mb.) from Normal, February 1956.



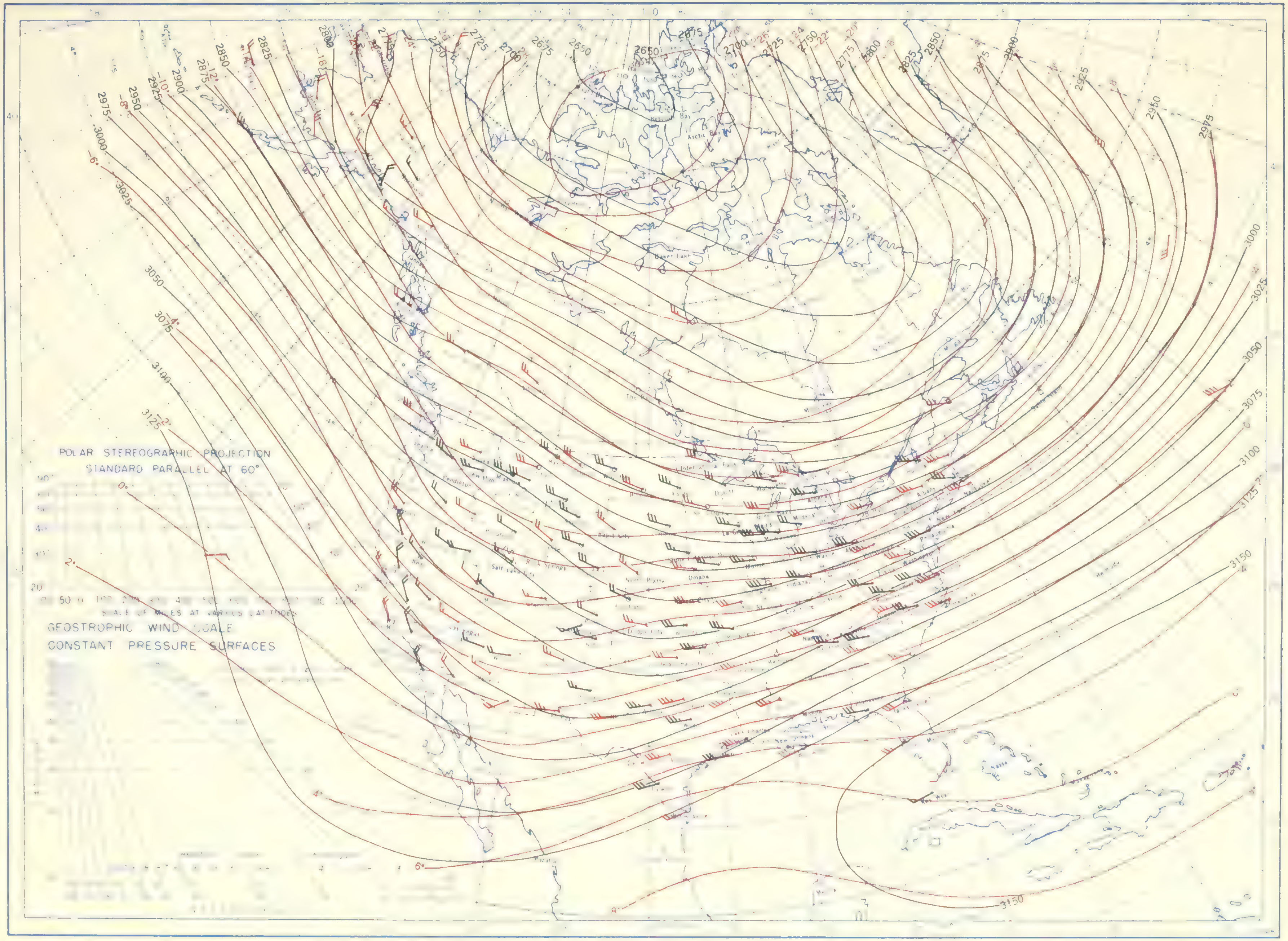
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 850-mb. Pressure Surface, Average Temperature in °C. at 850 mb., and Resultant Winds at 1500 Meters (m.s.l.), February 1956.



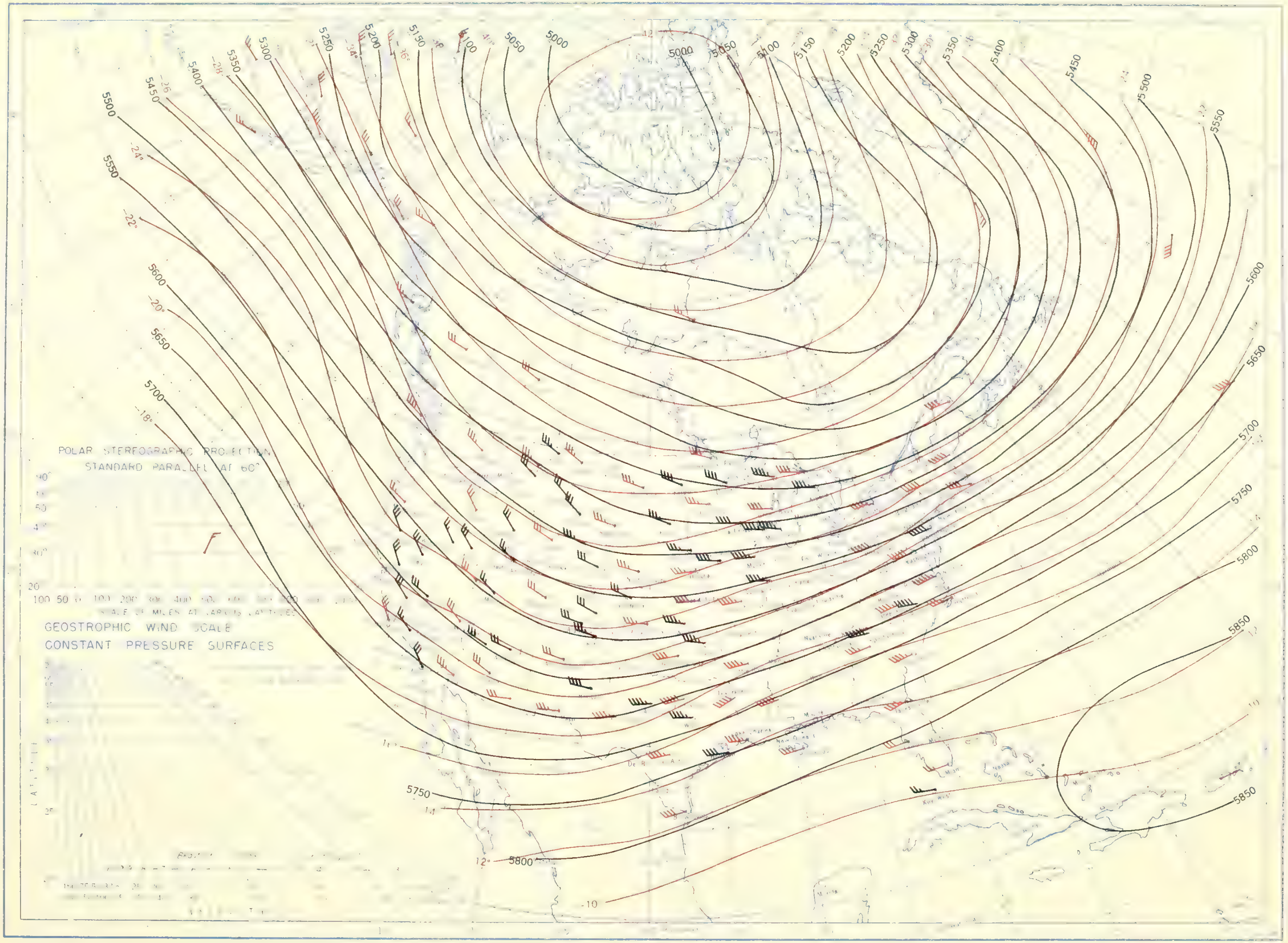
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 700-mb. Pressure Surface, Average Temperature in °C. at 700 mb., and Resultant Winds at 3000 Meters (m.s.l.), February 1956.



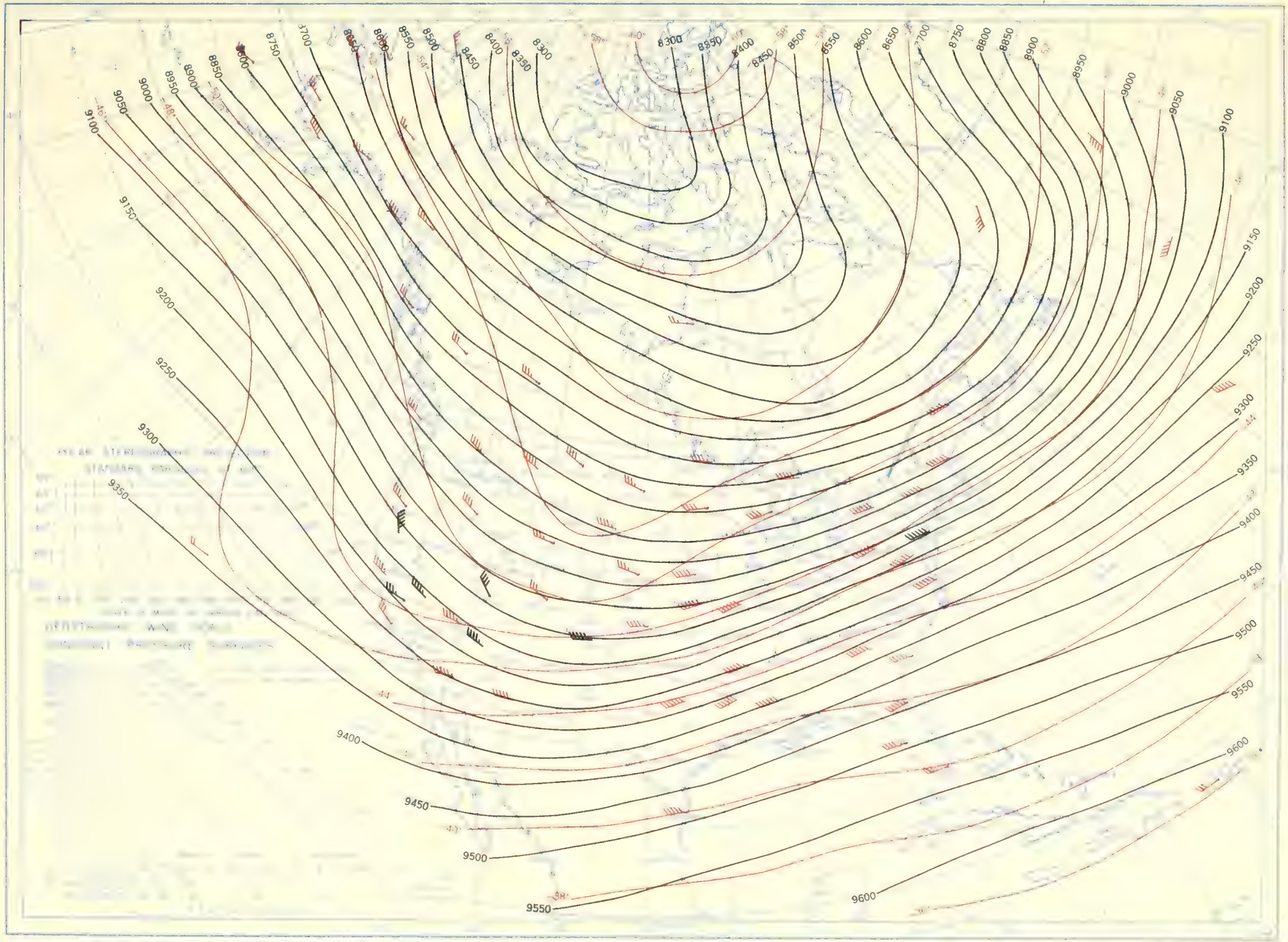
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIV. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 500-mb. Pressure Surface, Average Temperature in °C. at 500 mb., and Resultant Winds at 5000 Meters (m.s.l.), February 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Surface, Average Temperature in °C. at 300 mb., and Resultant Winds at 10,000 Meters (m.s.l.), February 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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MARCH 1956

Volume 7 No. 3

ASHEVILLE: 1956

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NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

MARCH 1956

Volume 7 No. 3

GENERAL SUMMARY OF WEATHER CONDITIONS

Extremely dry weather in Iowa, Missouri, western Illinois, and from the central and lower Great Plains to the Pacific Coast was the main weather feature of the month. Continued drought and dust-blowing winds in the Great Plains further damaged small grains and dimmed the spring crop outlook. Dry weather also continued in Florida where irrigation of truck and citrus was necessary throughout the month. In the Southwest the month of almost continuous fair weather was marked by record sunshine at Albuquerque, N. Mex., and Red Bluff and Fresno, Calif., and unusually low relative humidity which averaged only 5 percent (a new record) for the 5 p.m. readings at Yuma, Ariz., and only 14 percent for the month at Las Vegas, Nev.

In most of the remainder of the Country precipitation was ample to excessive. Minor flooding occurred along many streams in a wide area extending from the lower Mississippi Valley northeastward through New York State. Heavy snowfall in most northern areas continued the excellent outlook for irrigation water in the Far West, but virtually paralyzed New England's transportation on the 16th and 17th when the worst late-season snowstorm in a generation blanketed that area.

TEMPERATURE.--Temperatures, fluctuating between near record late season lows and early season highs, averaged slightly above normal in the Rocky Mountain region and lower Great Plains and slightly below elsewhere. Average monthly departures ranged from -6° at some stations in New England, Minnesota and eastern North Dakota to +4° in southeastern Montana.

The month's coldest weather occurredon the 10th, 11th, and 12th when minima fell to subzero levels over the central and northern portions of the Rockies and Great Plains. West Yellowstone, Mont., recorded -40° (the month's lowest temperature) on the 11th and Bismarck, N. Dak., -25° on the 12th. Many stations in the Northeast recorded subzero minima on the 18th and 19th when cold Canadian air moved over the area toward an area of low pressure off the New England coast.

Temperatures below freezing were recorded on the north Pacific Coast on several dates during the first half of the month, over nearly all the southwestern interior on the 13th, deep into Texas on the 16th, throughout most of the South on the 8th and 9th, and along the Atlantic Seaboard into northern Florida on the 1st, 9th, 21st, and 25th. Damage from these freezes, although minor compared with that in March 1955, consisted of heavy apricot damage in western Colorado on the 28th when a hard freeze followed a warm spell from the 18th to 26th, some minor damage in the San Antonio, Tex., area, on the 8th, local fruit damage in west-central Texas on the 12th, some local fruit damage in the lower Mississippi Valley on the 8th and 20th, and some fruit and truck damage in the Southeast during the last decade.

During a warm spell over the West the fourth-week maxima rose to record heights for so late in the season, ranging from a March high of 78° for Prescott, Ariz., to an early season high of 74° at Miles City, Mont. Temperatures were unusually high over the southeastern quarter of the country and the Ohio and Mississippi Valleys from the 5th to 7th when several stations recorded early season highs, including Knoxville, Tenn., 79°, Evansville, Ind., 77°, Peoria, Ill., 80° and Norfolk, Va., 83°. Follett, Tex., recorded 101° on the 6th for the highest temperature of the month.

PRECIPITATION.--In Iowa, Missouri, western Illinois, and from the central and lower Great Plains to the Pacific Coast, precipitation totaled less than one-half inch which was less than 50 percent of normal. Many scattered stations with long-term records such as Columbia and Springfield, Mo., Dallas and Del Rio, Tex., and Sacramento, Calif., reported their driest Marches on record. The latter station had only 0.03 inch which was the least for March since 1850 or the past 107 years. Many stations had no precipitation at all, including Las Vegas, Nev., where March was the second consecutive month without rain.

At the end of the month drought gripped a large area extending from Iowa, Missouri, and western Illinois southwestward to and along most of the Mexican Border. Since October 10, 1955, less than 2 inches of precipitation had fallen in southern Arizona, most of New Mexico, western portions of Texas, Oklahoma, and Kansas, and southeastern Colorado, and less than 1 inch in eastern New Mexico and extreme western Texas. The effects of the drought would have been much more serious if the soil moisture had not been ample when the dry weather began and if the drought had not occurred during the cooler months. Even though corn planting time was still nearly a month away, farmers in Iowa and other sections of the western Corn Belt were becoming apprehensive about soil moisture for proper germination and growth of the 1956 crop.

Drought also continued in Florida, an area bypassed by generous rains which fell in most other sections east of the Mississippi. Tampa and Fort Myers reported their second driest March on record with only 0.06 and 0.05 inch of rain, respectively, and Miami its third driest with only 0.14 inch. Lakeland, in the center of the Peninsula, reported a deficiency of 27.70 inches of rainfall for the past 27 months. Irrigation was necessary for citrus and truck throughout the month.

Precipitation totaled 6 to over 8 inches in the Ohio Valley and South-Central States and over 2 inches in most other sections east of the Mississippi, except in western Illinois and the Florida Peninsula. The heaviest precipitation fell in most of these areas during the 16th to the 19th as the center of a low pressure system moved from the lower Mississippi Valley northeastward across Nantucket, Mass.

Monthly totals from the Great Lakes to the Cascade Mountains totaled about 1 or 2 inches, except in northern areas of Montana east of the Divide, where totals were less than one-half inch. West of the Cascades totals ranged from 2 to 26.29 inches, the latter amount which was recorded at Naselle, Wash., being the month's largest total.

SNOWFALL.--The most notable snowstorm of the month occurred in the Northeast when low pressure systems from the Gulf and northern Great Plains crossed that area on the 16th and 17th. Falls of 4 to 19 inches were reported from Ohio eastward and from Virginia northward. A record depth of 21 inches for March was reported at Bradley Field, near Hartford, Conn., where the previous record was 16 inches in 1916. The snow, of dry character and whipped into high drifts by northeasterly gales of 60 to over 70 m.p.h. in gusts, brought traffic almost to a standstill. This blizzard was the worst storm of its kind to hit New England in a generation.

The snowcover at the end of the month was of about the same extent in the Northeast and Far West as at the beginning. In north-central areas, however, the cover disappeared from the greater portion of the Great Plains during the month, and at the end was limited to northern portions of Michigan, Wisconsin, Minnesota, and northeastern North Dakota. Depths of the remaining snowcover both in the Far West and north-central areas decreased somewhat, while those in the Northeast increased considerably due principally to the heavy falls on the 16th, 17th, 19th, and 20th.

DESTRUCTIVE STORMS.--High winds, reaching speeds of 70 to 90 m.p.h. in gusts, swept across Washington and Oregon on the 2d and 3d, damaging utilities and other property to the extent of hundreds of thousands of dollars.

Tornadoes struck in Indiana, Illinois, and Ohio on the 6th and 7th, causing property losses of $2,000,000 in Marion, Ind., alone.

On the 16th to the 19th snowfall in the Northeast was responsible for near 100 deaths resulting from traffic accidents, heart attacks, and exposure. High winds, accompanying the storm, with gusts of 60 to 70 m.p.h. along the coast caused much property damage.

Several tornadoes and thundersqualls occurred in central and Coastal Bend sections of Texas when a squall line moved across the State on the 21st.

On the 30th an outbreak of thunderstorms with hail occurred in the Dakotas and Mississippi Valley as an extensive low pressure system moved across the center of the country.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Enterprise	89	7	Helfin	17	21	Rockford	12.40	Colbert Steam Plant	2.82
Arizona	4 Stations	97	7+	Springerville	-3	7	Lukachukai	.55	182 Stations	.00
Arkansas	Subiaco	89	27	Gravette	16	8	Huttig Dam	6.01	Yellville	.32
California	Cow Creek	100	24	White Mountain 2	-32	6	Gasquet RS	8.63	203 Stations	.00
Colorado	Holly	90	25	Walden	-34	12	Wolf Creek Pass 4W	3.24	Cimarron 3SE	.00
Connecticut	2 Stations	59	5	Falls Village	-8	18	Norfolk 2SW	7.36	Milford	3.37
Delaware	Selbyville	73	8	Georgetown 5SW	17	1	Wilmington City Hall	5.36	Selbyville	3.16
Florida	3 Stations	92	14+	Jasper 9ESE	20	21	DeFuniak Springs	6.90	5 Stations	.00
Georgia	2 Stations	87	14	Blairsville Exp. Sta.	14	21	La Grange	8.92	Savannah Beach 2N	1.01
Idaho	do	80	24+	Island Park Dam	-35	12	Burke 2ENE	7.14	3 Stations	T
Illinois	E. St. Louis Parks C	87	6	Mount Carroll	8	13	Harrisburg	3.65	Galesburg	.15
Indiana	Evansville	79	5	Wheatfield	10	13+	Leavenworth Dam 44	4.97	Whiting	.55
Iowa	Missouri Valley	84	25	Sibley	-22	12	Osage	4.75	2 Stations	.03
Kansas	Medicine Lodge	93	25+	2 Stations	-6	12	Sedan	1.61	6 Stations	T
Kentucky	3 Stations	82	6+	Inez	12	20+	Dema	8.90	Paducah	1.69
Louisiana	do	88	6	Converse	20	8	Angola 3SW	10.69	Burrwood WB	.48
Maine	Millinocket	55	22	Fort Kent	-22	13	Sanford 2NNW	6.86	Caribou WB Airport	1.36
Maryland	Clear Spring	76	5	Oakland 1SE	0	20	Clear Spring	6.09	Owings Ferry Landing	2.69
Massachusetts	Framingham	59	23	Birch Hill Dam	-17	18	East Wareham	9.64	2 Stations	3.77
Michigan	Eau Claire 4NE	65	6	Champion Van Riper Pk.	-25	15	Bloomingdale	3.83	Eagle Harbor Coast Gd	.21
Minnesota	Fairmont 1S	59	26	Red Lake Falls	-34	14	Harmony	3.90	Baudette	.37
Mississippi	Port Gibson	87	7	Pontotoc	21	20	Russell 2W	11.29	Sardis Dam	2.04
Missouri	5 Stations	87	5+	Edgerton	4	8	Advance	3.31	La Belle	.10
Montana	Miles City	81	24+	West Yellowstone	-40	11	Haugan	5.14	2 Stations	.00
Nebraska	Beaver City	90	25	Fort Robinson	-16	12	Bloomfield	1.03	Taylor	.00
Nevada	Mesquite	92	24	Mountain City RS	-19	7	Jarbidge	.90	24 Stations	.00
New Hampshire	2 Stations	58	23	Woodstock	-25	16	Petersboro 2S	7.51	Lakeport 2	2.87
New Jersey	do	68	5+	Layton 3NW	-5	1	Elizabeth	7.66	Belmar	1.97
New Mexico	Jal	90	26	Gavilan	-11	7	Chacon	.71	108 Stations	.00
New York	Scarsdale	67	5	Saranac Lake	-23	18	Scio	7.44	Theresa	1.23
North Carolina	7 Stations	85	7+	Celo 2S	7	21	Clingmans Dome	9.99	Kinston	1.89
North Dakota	Marmarth	76	31	Belcourt Indian Res	-32	14	Walhalla	2.55	Sentinel Butte 20S	.04
Ohio	Ironton	82	6	Bucyrus Sewage Plant	-3	17	Racine Dam 23	7.66	Greenville Sewage Plant	2.02
Oklahoma	Mangum	97	26	3 Stations	6	12	Kiamichi Tower	3.43	Grandfield	.00
Oregon	5 Stations	78	18+	2 Stations	-14	11+	Valsetz	22.94	Ironside 2W	T
Pennsylvania	Newburg 3W	79	6	Pleasant Mount 1W	-8	18	Kregar 4SE	7.82	Scranton	1.98
Rhode Island	Providence WB AP	54	3	Greenville	7	18	Woonsocket	8.25	Kingston	5.15
South Carolina	2 Stations	86	27+	3 Stations	19	25	Crescent 1W	6.56	Hilton Head	1.45
South Dakota	6 Stations	82	26+	2 Stations	-30	12	Pine Ridge	2.32	Ralph	T
Tennessee	2 Stations	85	6+	Gatlinburg 2SW	15	21	Haw Knob	8.45	Selmer	2.00
Texas	do	101	6+	Follett	6	12+	Four Notch Guard Sta.	4.64	Numerous Stations	.00
Utah	St George PH	89	24	Silver Lake Brighton	-21	12	Alta	2.41	24 Stations	.00
Vermont	Bellows Falls	55	23	Chelsea	-26	18	Peru	9.17	Huntington Center	2.20
Virginia	2 Stations	84	6+	Big Meadows	7	20	Dunbar	7.81	Copper Hill	1.53
Washington	Battle Ground	77	18	Bumping Lake	-16	11	Naselle	26.29	Smyrna	.03
West Virginia	Huntington WB City	82	6	Kumbrabow State Forest	-4	21	Pickens 1	9.68	Richwood 2N	2.35
Wisconsin	Lake Geneva	64	26	3 Stations	-25	12+	La Crosse State Col.	4.46	Martintown	.25
Wyoming	Morrisey	81	24+	Foxpark	-39	12+	Bondurant	3.82	Evanston 1E	.00
Puerto Rico	3 Stations	93	6+	2 Stations	49	5+	Bayamon Hato Tejas	12.16	2 Stations	.00

+ And also on a later date or dates.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

State and station	Pressure			Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
	Elevation, ground	Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F.	°F	°F	°F	°F		°F				°F.	%	In.	In.	In.			In.	In.	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	993.2	1018.7	67	41	53.8	0.0	84	7	23	20	0	8	39	63	6.09	-0.22	1.43	13	4	T	0	9.3	S	42	W	7	10	9	12	5.7	63
Mobile	211	1010.9	1019.1	70	49	59.5	.0	80	28	33	20	0	0	49	73	9.74	2.12	3.31	11	6	0.0	0	11.2	S	--	---	--	13	5	13	5.1	--
Montgomery	193	1011.5	1019.2	69	44	56.8	-.3	85	6+	29	21	0	4	44	69	8.69	2.19	2.70	11	4	.0	0	8.4	S	34	SW	7	10	11	10	5.5	61
ARIZONA																																
Flagstaff	6993	-	--	55	19	36.9	2.5	70	24	-1	13	0	31			.12	-1.45	.12	1	0	3.4	3	----	-	--	---	--	24	1	6	2.2	--
Phoenix	1114	974.9	1014.1	78	45	61.6	1.7	91	24	32	13	1	1	27	28	.00	-.66	.00	0	0	.0	0	5.2	E	*38	NW	6	23	4	4	2.5	96
Prescott	5014	846.6	1015.7	65	29	47.1	2.3	78	24	14	13	0	20		-	T	-.98	T	0	0	T	T	10.1	SSW	56	W	6	22	6	3	2.1	95
Tucson	2556	925.5	1013.1	78	42	60.2	2.3	91	24	26	13	1	3	14	19	.00	-.68	.00	0	0	.0	0	7.6	SE	36	W	6	21	3	7	2.9	96
Winslow	4880	851.0	1014.5	65	28	46.6	1.1	81	24	15	7	0	23	7	26	.21	-.19	.20	2	0	2.1	1	9.5	WSW	*42	WSW	5	22	5	4	2.5	--
Yuma	199	1007.5	1014.6	81	48	65.8	.1	95	23	33	13	8	0	13	16	.00	-.26	.00	0	0	.0	0	7.9	N	43	N	6+	23	5	3	2.1	98
ARKANSAS																																
Fort Smith	458	1000.0	1017.0	64	40	52.4	.1	85	6	27	8	0	3	36	59	1.74	-1.35	1.02	5	3	T	0	9.6	SW	30	SW	5+	15	4	12	5.0	62
Little Rock	257	1004.1	1017.4	64	42	53.0	.2	83	6	23	8	0	2	37	60	3.81	-1.04	.97	9	7	T	0	11.2	SSW	36	NW	27	9	7	15	5.9	66
Texarkana	361	-	--	66	44	55.0	-1.0	85	6	29	8	0	2		--	2.82	-2.11	1.17	8	4	T	0	----	---	--	---	--	--	--	--	---	--
CALIFORNIA																																
Bakersfield	489	1002.0	1020.2	71	43	57.0	-.1	84	18	31	7	0	1	38	52	T	-1.11	T	0	0	.0	0	5.8	NW	*27	NNW	31	14	10	7	3.9	--
Bishop	4108	874.7	1016.6	68	28	48.1	.7	79	21+	16	7	0	22	--	--	.00	-.66	.00	0	0	.0	0	----	--	--	---	--	19	12	0	2.5	--
Blue Canyon	5280	840.5	1019.6	48	32	39.7	1.0	59	17	9	6	0	14	--	--	1.86	-5.60	1.17	5	0	16.5	35	----	- -	-	---	--	12	10	9	5.0	--
Burbank	699	990.9	1017.[illegible]	73	46	59.1	2.5	86	23	38	7	0	0	38	52	T	-2.25	T	0	0	.0	0	4.3	S	*30	NNW	6	19	9	3	3.0	--
Eureka (I)	43	1020.7	1023.0	54	41	47.4	-1.7	63	17+	33	6	0	0	--	--	2.36	-2.28	.84	9	0	T	T	7.4	-	36	NW	5	7	6	18	6.6	58
Fresno	331	1008.[illegible]	1020.1	68	40	53.8	-1.7	80	18+	30	7	0	1	38	60	.08	-1.55	.06	2	0	.0	0	6.7	NW	26	NW	26	19	10	2	3.1	95
Los Angeles (I)	312	- -	--	71	50	60.5	1.6	84	28	43	7	0	0	42	59	T	-2.36	T	0	0	.0	0	6.0	---	34	NW	6	20	7	4	2.8	86
Los Angeles	99	1013.5	1017.2	68	50	58.8	2.3	82	28	43	7	0	0	45	66	T	-1.91	T	0	0	.0	0	6.7	W	%51	N	6	16	9	6	3.7	--
Mt. Shasta (R)	3544	891.7	1020.4	53	28	40.6	-1.1	68	16+	15	7	0	23	--	--	.29	-3.79	.15	2	0	2.9	8	----	---	--	-	--	12	7	12	5.2	--
Oakland	3	1021.7	1021.9	62	42	51.7	-1.7	73	16	34	7	0	0	40	69	.04	-2.27	.02	3	0	.0	0	7.7	■	*30	W	31	12	11	8	4.5	--
Red Bluff	341	1007.8	1020.5	66	42	53.8	-.5	78	17	29	6	0	1	32	49	.01	-2.60	.01	1	0	.0	0	9.7	NNW	42	SE	4	13	10	8	4.6	88
Sacramento	17	1019.3	1020.4	67	41	54.0	.1	78	17	33	7	0	0	38	60	.17	-1.92	.11	3	0	.0	0	9.4	SW	34	NW	11	14	13	4	3.7	89
Sandberg (R)	4517	863.9	1017.3	56	38	46.5	1.8	73	21	19	6	0	7	-		.05	-1.76	.05	0	0	.5	1	20.0	---	*69	NNW	26	18	5	8	3.4	--
San Diego	9	1014.2	1017.4	67	50	58.1	-.1	80	17	43	13	0	0	45	67	T	-1.52	T	0	0	.0	0	6.6	WSW	19	NW	6	17	8	6	3.8	76
San Francisco (I)	52	----	-	60	47	53.7	-1.2	73	16	39	6	0	0			.12	-2.66	.08	4	0	0	0	8.6	- -	27	W	2	16	8	7	4.0	79
San Francisco	8	1021.0	1021.8	60	43	51.7	-1.1	71	16	35	6+	0	0	43	74	.15	-2.29	.10	4	0	.0	0	8.2	WNW	32	WNW	5	14	9	8	4.2	--
Santa Maria	238	1010.8	1019.7	65	40	52.4	-1.6	79	28	29	7	0	3	40	69	T	-2.29	T	0	0	.0	0	8.5	WNW	*27	WNW	19	21	7	3	2.6	-
COLORADO																																
Alamosa	7538	768.7	1017.3	51	14	32.4	.6	66	24	-2	8	0	31	--	--	.19	.24	.07	5	0	4.9	1	----	---	--	- -	—	18	8	5	3.2	--
Colorado Springs	6173	807.7	1015.9	52	23	37.8	1.0	73	25	-11	12	0	25	11	42	.84	.15	.41	8	0	10.4	5	11.6	NNE	*43	NW	2	17	6	8	4.0	--
Denver	5292	834.7	1014.2	54	27	40.[illegible]	2.3	75	25	0	12	0	19	11	40	.89	-.30	.37	5	0	13.0	5	14.4	SSW	49	W	27	13	11	7	4.5	77
Grand Junction	4849	858.8	1016.4	56	29	42.3	1.1	73	21+	15	7	0	20	11	35	.07	-.80	.07	1	0	2.5	2	10.2	ESE	52	NW	27	16	7	8	4.1	80
Pueblo	4639	854.4	1015.0	56	25	40.7	.7	79	25	-5	12	0	23	15	46	.82	.12	.40	5	0	12.7	7	9.8	W	55	NW	27	17	8	6	3.6	86
CONNECTICUT																																
Bridgeport	7	1015.6		42	28	35.1	-1.8	59	5	15	25	0	22	-	--	4.19	.59	1.17	14	1	19.4	12	- --	-	--	- -	-	10	7	14	6.5	--
Hartford	169	1009.6	1015.6	39	22	30.3	-6.9	50	3+	1	18	0	29	21	72	6.61	2.80	1.49	15	1	43.3	21	11.1	NW	50	NE	16	5	12	14	6.5	49
New Haven	6	1015.0	1015.6	41	27	33.8	-3.3	56	5	13	18	0	27	--	—	4.94	.82	1.06	17	2	26.9	19	8.1	---	34	N	16	8	7	16	6.5	53
DELAWARE																																
Wilmington	73	1012.6	1016.2	47	30	38.6	-3.9	66	5	20	20	0	20	29	70	5.18	1.57	1.65	17	2	12.3	8	10.1	NW	-	--	--	6	9	16	6.6	--
DIST. OF COLUMBIA																																
Washington, D. C. (U)	72	-		53	35	43.7	-2.0	74	5	24	20	0	12			4.16	.80	1.31	13	2	3.3	2	8.9	-	31	N	8	-	--	--	---	--
Wash. Nat'l AP	14	1012.0	1016.5	52	34	43.2	-2.1	73	5	24	20	0	12	28	60	3.53	.50	1.27	15	2	4.0	2	11.5	NW	40	W	8	6	8	17	6.9	56
FLORIDA																																
Apalachicola (I)	13	1017.9	1019.[illegible]	68	53	60.[illegible]	-.3	76	30	38	21	0	0		-	2.29	-2.63	.99	7	0	.0	0	8.7	--	30	NW	8	17	5	9	4.0	66
Daytona Beach	31	1017.9	1019.3	76	49	62.8	-.9	88	14+	35	1	0	0	52	72	.25	-3.37	.08	6	2	.0	0	11.0	SSW	*37	SW	16	10	17	4	4.5	—
Fort Myers	15	1018.1		80	53	66.7	-1.9	87	13+	40	21	0	0	--	--	.05	-2.13	.04	2	0	.0	0	9.4	---	*25	SW	16	18	12	1	2.9	--
Jacksonville (I)	18			72	53	62.2	-1.2	87	14+	37	21	0	0			.59	-2.92	.43	4	-	.0	0	- -	-	--		--	--	--	--	---	--
Jacksonville	24	1018.4	1019.4	75	49	62.3	.0	89	14	31	1	0	0	47	64	.81	-2.61	.72	4	1	.0	0	9.7	SW	36	NW	16	14	10	7	4.6	69
Key West (I)	9	1016.9	1017.6	81	67	74.1	.4	86	13+	56	21	0	0	-	-	.01	-1.56	.01	1	0	.0	0	8.8	--	19	■	22+	21	9	1	3.0	82
Lakeland (I)	214			78	55	66.5	.1	87	14+	39	21	0	0	-	--	1.01	-2.79	1.00	2	2	.0	0	7.4	-	--	---	--	15	12	4	3.6	82
Miami (I)	8			76	64	69.6	-1.2	86	16+	44	21	0	0	-	--	.14	-2.01	.11	2	0	.0	0	12.7	--	33	NE	25	22	6	3	2.6	86
Miami	6	1017.3	1018.5	80	61	70.3	-1.0	88	16+	42	21	0	0	58	69	.02	-2.73	.01	2	0	.0	0	11.2	SE	*23	SSE	7+	15	14	2	3.7	-
Miami Beach	[illegible]			77	66	71.7	-.5	85	30	50	21	0	0			.15	-2.14	.15	1	0	.0	0	---				-	--	-	---	-	
Orlando	[illegible]	1015.1	[illegible]	79	52	65.7	-1.0	89	7+	40	1+	0	0	52	68	.16	-3.10	.11	3	0	.0	0	9.8	S	*38	NW	8	14	14	3	3.5	-
Pensacola (I)	13	1016.7		68	52	59.7	-.5	78	24	36	20	0	0	-	--	5.37	-.63	2.64	13	2	.0	0	11.4		27	SW	16	-	--	--	---	61
Tallahassee	64	1016.4	1018.1	72	47	59.7	-.8	82	7+	29	21	0	2	47	70	2.00	-3.07	.68	7	2	.0	0	7.5	S	--	---	--	13	7	11	5.0	--
Tampa	19	1018.1	1018.6	77	51	65.1	-.9	84	15	41	1	0	0	53	72	.06	-3.06	.06	1	0	.0	0	10.6	S	*43	WNW	16	20	9	2	2.8	87
West Palm Beach	15	1017.7	1018.3	79	59	69.0	-1.0	90	16	44	21	1	0	58	71	.33	-2.89	.27	3	1	.0	0	11.7	SE	*28	NNE	25	14	11	6	4.1	--
GEORGIA																																
Atlanta	975	976.2	1018.6	65	43	53.9	1.2	79	6+	27	20	0	5	40	65	5.93	.26	3.42	10	2	.0	0	13.4	NW	51	W	16	10	7	14	5.6	56
Athens	798	[illegible]	1017.8	65	40	52.5	-.2	79	7	25	21	0	7	39	66	5.44	.27	2.99	8	3	.0	0	11.5	SW	*38	NNW	24	12	4	15	5.7	--
Augusta	143	1011.1	[illegible]	69	41	54.7	-1.8	83	7	27	9+	0	8	43	71	4.96	.70	2.70	9	3	.0	0	8.4	SW	*38	W	8	11	10	10	5.5	--
Columbus	[illegible]	1001.1	1018.6	68	42	55.2	.5	82	7	25	21	0	5			5.59	-.22	1.46	11	2	.0	0	- - -	---	--	-	--	10	4	17	5.8	-
Macon	356	1004.6	1018.4	69	44	56.8	-1.0	84	7	28	21	0	4	42	64	4.74	.37	1.91	12	2	.0	0	10.5	SSW	35	W	16	11	7	13	5.7	62
Rome	637	991.8		65	38	51.6	-.1	82	6+	21	9+	0	12		-	4.05	-1.78	1.22	12	2	T	0	---	--	--	---	—	8	13	10	5.6	--
Savannah	48	1016.9	1018.6	71	44	57.8	-1.2	83	14	26	21	0	5	45	69	1.76	-1.73	.84	9	1	.0	0	9.9	SW	39	SW	16	12	10	9	4.9	72
Thomasville (I)	283			72	49	60.6	.0	83	14	32	21	0	1			3.37	-1.98	1.14	8	3	.0	0	- -	-	--	--	--	--	--	--	---	--
IDAHO																																
Boise	2842	921.4	1019.1	53	31	41.9	.1	74	24	17	11+	0	19	25	54	.39	-.95	.14	7	0	2.6	2	11.9	SE	38	NW	13	7	8	16	6.5	72
Idaho Falls 16W (R)	[illegible]	[illegible]	1019.3	42	16	29.0	-1.0	63	24	-10	11	0	30		--	.27	-.18	.09	4	0	4.1	5	10.7	---	a41	WSW	26	--	--	--	---	--
Idaho Falls 42NW (R)	4790			44	17	30.3	1.6	67	24	0	12	0	31	—	—	T	-.45	T	0	--	——	--	11.4	--	a50	S	3	--	--	--	--	--
Lewiston	1413	966.1	1018.1	51	33	42.1	-1.5	67	18	18	11	0	15	-	-	1.18	.04	.37	15	1	4.4	2	----	---	--	---	--	5	3	23	7.9	--
Pocatello	4444	862.9	1018.5	47	24	35.7	-.9	70	24	3	14	0	24	23	62	.20	-.93	.10	4	0	2.5	1	14.5	SW	49	W	3+	7	14	10	6.0	73
ILLINOIS																																
Cairo (I)	314	1004.1		59	40	49.5	.5	77	26	27	8	0	3	--	-	2.29	-2.43	1.17	11	4	T	T	11.7	---	37	S	6	11	11	9	5.0	62
Chicago	610	992.[illegible]	1016.4	44	29	36.4	-.6	59	10	18	8	0	23	25	67	1.10	-1.75	.31	14	4	3.9	2	10.8	NE	46	SW	10	4	10	17	7.2	49
Moline	589	[illegible]	1017.3	46	26	36.1	-1.1	62	26	10	13	0	24	24	65	.54	-1.94	.37	6	1	.7	T	14.3	■	49	W	10	8	9	14	6.2	59
Peoria	[illegible]	993.9	1016.1	49	29	38.9	.6	75	6	15	8	0	23	26	61	.54	-2.25	.20	8	2	4.5	4	14.0	---	49	W	10	11	9	11	5.7	65
Springfield	589	992.9	1016.7	53	30	41.3	1.1	83	6	15	8	0	23	28	63	.63	-2.68	.25	10	2	4.6	3	15.7	SSW	48	SW	28	9	10	12	5.6	64
INDIANA																																
Evansville	383	1000.7	1016.9	56	34	44.9	-1.7	77	5	21	8	0	17	32	63	2.68	-1.61	1.20	11	3	T	T	12.0	SSW	45	SW	1	9	9	13	5.7	62
Fort Wayne	801	984.1	1015.9	46	27	36.2	-.6	69	6	16	16+	0	27	27	74	3.54	.38	1.19	14	4	7.5	3	13.4	N	49	SSW	1	7	5	19	7.1	45
Indianapolis	793	986.1	1016.7	50	30	40.2	.1	75	5	19	19	0	21	28	65	1.90	-1.99	.59	13	3	9.0	3	15.2	SW	53	SW	1	8	5	18	6.5	72
South Bend	768	[illegible]	1015.9	44	25	34.7	-1.0	68	6	16	20	0	27	26	74	1.59	-1.36	.60	13	5	4.2	1	12.3	SSW	*37	WSW	11	5	7	19	7.5	--

See footnotes at end of table

CLIMATOLOGICAL DATA

Table 2—Continued

State and station	Elevation of ground, Ft	Pressure: Station, Mb	Pressure: Sea level, Mb	Temperature: Average maximum, °F	Average minimum, °F	Average, °F	Departure from normal, °F	Highest, °F	Date	Lowest, °F	Date	No. of days: Max 90° F or above	No. of days: Min 32° F or below	Average dew point, °F	Average relative humidity, %	Precipitation: Total, In	Departure from normal, In	Greatest in 24 hours, In	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total, In	Max depth on ground, In	Wind: Average hourly speed, M p.h.	Prevailing direction	Fastest mile: Speed, M p.h.	Direction	Date	No. of days sunrise to sunset: Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10	Sky cover, tenths, sunrise to sunset, 0-10	Percent of possible sunshine
IOWA																																
Burlington	694	990.5	1016.8	49	27	38.2	-0.3	72	23	11	8	0	25	25	61	2.65	-0.76	1.61	8	1	4.6	2	12.7	NE	41	W	10	9	11	11	6.0	50
Des Moines	948	984.4	1016.7	46	25	35.2	-1.8	76	25	5	11	0	25	23	66	.71	-1.12	.29	5	1	2.5	2	14.8	NNE	47	NW	1	8	12	11	6.3	69
Dubuque	1065	990.5	1016.5	40	23	31.2	-2.1	59	26	9	12	0	31	21	66	.89	-1.36	.59	9	2	1.2	1						7	10	14	6.6	
Sioux City	1094	974.3	1016.7	45	22	33.7	-1.3	72	25	1	12	0	27	20	61	.55	-.97	.11	7	1	2.5	2	16.9	NNW	50	W	20	6	9	14	6.3	
Waterloo	870	-	--	39	22	30.1	-4.0	61	25	0	12	0	29			.47	1.02	.50	9	1	3.6	2	14.6									
KANSAS																																
Concordia (U)	1375	965.5		55	29	41.6	.0	81	31	6	12	0	19		53	.06	-1.27	.02	1	0	.8	T	9.7		37	NW	22	13	11	7	4.5	77
Dodge City	2594	926.2	1015.2	61	30	45.2	2.6	88	25	7	12	0	19	16	44	.25	-.90	.13	4	1	2.5	2	15.9	N	57	N	27	14	11	6	4.1	82
Goodland	3645	886.2	1015.1	55	23	38.8	2.3	83	27	1	12	0	26	17	49	.19	-.60	.34	1	0	6.3	1	13.4	WSW	*44	NNW	27	16		10	4.1	
Topeka	879	980.4	1016.7	58	29	43.6	1.0	84	5	11	12	0	19	25	52	[illegible]	1.61	.16	1	0	2.9	1	13.7	S	42	N	7+	10	14		4.1	69
Wichita	1321	966.1	1015.7	59	32	45.4	.1	89	25	10	12	0	14	26	52	.41	-.83	.72	3	1	2.9	1	15.4	S	40	N	7+	11	12		4.4	77
KENTUCKY																																
Lexington	979	980.4	1016.9	55	33	43.6	1.2	76	6	19	20	0	17	32	63	6.51	2.05	2.40	16	3	1.2	T	12.8	SSW					6	12	6.6	
Louisville	474	997.0	1016.5	57	36	46.1	.5	77	6+	23	8	0	11	33	64	4.50	.17	1.24	12	3	1.6	1	12.2	SSW	50	SW	25	11	7	13	6.0	58
LOUISIANA																																
Baton Rouge	64	1015.6	1018.6	72	49	60.3	.0	83	6	34	8+	0	0	50	73	3.38	-2.44	1.28	8	2	0	0	10.2	SSE	--	--	-	14	6	11	5.5	
Lake Charles	12	1016.3	1017.8	71	52	61.5	.9	82	6+	35	8	0	0	52	76	4.68	-.08	1.78	6	3	0	0	9.3	S	*29	SE	21	9	6	16	5.9	
New Orleans (U)	9	1016.3	----	75	55	63.3	.3	82	6+	40	20	0	0	-		1.19	-2.37	1.06	9	3	0	0	7.5		21	SW	7	12	9	10	5.1	56
New Orleans	3	1016.3	1018.4	73	52	62.5	.8	82	7+	38	9	0	0	53	74	3.66	-2.24	1.45	9	4	0	0	9.6	SSW	*29	NW	7+	14	7	11	5.3	
Shreveport	252	1007.8	1017.2	66	46	57.3	-.6	85	1	29	8	0	1	45	67	4.47	-.27	1.82	8	5	0	0	11.7	S				11	8	12	5.4	60
MAINE																																
Caribou	624	990.2	1014.4	30	8	18.8	-2.9	45	22	-9	19	0	31	7	61	1.36	-1.04	.68	10	0	18.9	19	11.9	NW	*52	WSW	11+	13	4	14	5.6	
Portland	61	1011.6	1015.7	36	15	25.6	-5.9	47	3+	-4	1	0	31	6	65	3.75	-.28	.71	15	0	46.6	28	10.5	NNE	44	N	17	11	4	16	5.8	60
MARYLAND																																
Baltimore (U)	14			51	35	43.4	-1.9	71	5	25	25	0	11	-		4.32	.69	1.38	12	-												
Baltimore	146	1011.7	1016.6	50	31	40.7	-2.5	71	5	16	1	0	17	26	65	4.11	.38	1.41	11	1	7.8	6	11.7	WNW	52	W	8	5	10	16	6.7	57
Frederick	294	-		49	28	38.6	-4.7	74	5	11	20	0	26	-	-	3.74	.43	1.22	11	1	8.3	5		-								
MASSACHUSETTS																																
Blue Hill Obs (R)	629	990.7	1014.9	38	24	30.3	-3.8	50	3+	6	13	0	29		70	8.09	4.22	1.93	17	3	52.0	25	14.6	NW	53	NE	16	9	7	15	6.3	46
Boston	15	1010.2	1015.0	40	28	33.6	-4.0	52	3	13	18+	0	21	22	67	5.39	1.96	1.26	15	1	31.2	16	16.2	WNW	*51	NE	16	8	8	15	6.3	57
Nantucket	43	1014.1	1014.6	41	29	34.8	-1.8	48	8+	17	18	0	20	29	80	6.53	2.48	1.68	17	2	24.5	11	15.1	WNW	73	N	17	9	4	18	6.7	47
Pittsfield	1153	971.2	-- --	34	18	25.9	-4.9	47	22	5	18	0	31		-	4.19	.47	1.01	17	0	40.2	41										
MICHIGAN																																
Alpena (U)	587	993.2	- -	33	18	25.2	-2.5	45	1+	6	15+	0	31			.89	1.15	.25	13	0	9.6	8	11.4	-	36	E	1+	7	7	17	6.4	58
Detroit	619	988.8	1016.4	39	26	32.4	-2.7	55	1	14	25	0	27	24	75	3.57	1.04	1.11	14	2	13.3	5	10.8	N	51	W	11	5	6	20	7.5	47
Detroit (Willow Run)	722	986.5	1015.7	41	25	32.9	-2.6	55	1	11	25	0	28	24	73	2.38	.03	.65	12	2	12.4	7	13.8	SW	*44	W	11	6	5	20	7.3	
East Lansing (U)	856	- - -	----	39	24	31.0	-2.2	52	1	10	24+	0	29		-	2.76	.19	.90	15	2	11.4	6	6.0		23	SW	11					50
Escanaba (U)	594	993.6	--- -	33	14	23.3	-2.9	39	26	-2	13	0	31			1.40	-.38	.47	9	1	17.6	21	11.0		49	N	11	6	10	15	6.5	68
Flint	761	987.5	1016.2	37	22	29.4	-3.4	46	1+	6	25	0	29	22	76	1.91	-.11	.84	15	3	6.4	3	11.3	WNW	*58	W	11	6	5	20	7.2	
Grand Rapids	681	989.5	1016.0	38	22	30.1	-2.4	49	1	10	24	0	29	24	78	2.43	.08	.86	19	3	17.5	2	10.5	ENE	52	NW	6	5	7	19	7.1	52
Marquette (U)	677	988.8	- ----	32	19	25.2	-1.7	47	25	6	15	0	31	-	72	1.14	-.91	.68	9	0	16.0	23	8.1		26	SW	21	4	7	20	7.4	52
Muskegon	627	992.6	1016.4	37	23	29.6	-2.8	48	1	11	13	0	30	24	76	2.39	.21	.65	17	2	17.9	6						7	6	18	7.0	
Sault Ste Marie	721	993.9	1017.6	30	10	20.2	-2.8	38	1+	5	15	0	31	15	78	1.55	-.30	.51	11	0	22.7	30	9.1	WNW	37	N	11	9	5	17	6.3	53
MINNESOTA																																
Duluth	1409	973.9	1017.0	30	9	19.4	-2.8	47	27	11	12	0	31	12	71	1.07	-.71	.51	11	1	17.5	31	12.8	WNW	56	E	26	10	8	13	6.2	62
Intern'l Falls	1179	974.3	1017.6	29	3	15.6	-4.4	45	5+	-26	12	0	31	8	68	.60	-.13	.27	13	0	11.9	25	12.1	NE		-		10	6	15	5.9	
Minneapolis	830	982.1	1017.7	34	18	25.9	-5.0	56	26	8	12	0	31	19	76	1.62	.14	.75	12	1	14.0	9	11.8	NW	33	E	27	5	8	18	7.0	44
Rochester	1017	978.3	1017.1	34	15	24.5	-5.9	55	26	12	15	0	31	18	77	3.42	1.87	[illegible]	14	1	18.8	14	10.3	WNW				8	5	18	6.7	
St. Cloud	1034	977.3	1017.1	31	13	21.9	-5.0	48	25	12	12	0	31	16	77	1.13	.02	.65	9	0	11.2	14	7.5	NW				1	11	19	7.0	
MISSISSIPPI																																
Jackson	305	1006.1	1018.3	68	43	55.3	-1.5	84	6	29	8	0	1	41	68	6.52	.29	2.70	12	8	0	0	9.2	S	41	NW	7	9	7	15	6.0	57
Meridian	294	1004.7	---	70	42	56.0	-.5	84	7	28	9+	0	5			4.97	1.49	3.60	11	4	0	0						9	11	11	5.4	
Vicksburg (U)	234	1009.1	------	67	47	57.0	-1.1	84	6	33	20	0	0			6.50	.47	2.41	12	8	0	0	9.6		32	NW	7	6	10	15	6.1	64
MISSOURI																																
Columbia	778	987.1	1016.2	56	32	44.0	1.2	85	6	13	8	0	15	27	57	5.51	2.50	.30	6	3	5.2	1	13.1	SSE	50	SW	1	11	11	9	4.9	76
Kansas City	741	981.0	1016.7	57	31	45.2	1.4	84	5	14	12	0	13	27	52	4.51	1.97	.18	5	0	1.4	T	11.1	SSW	60	SW	28+	12	9	10	5.2	71
St Joseph	809	------	----	54	28	41.2	-.7	80	27	10	8	0	20			4.24	1.92	.15	5	0	2.0	T	11.5		*40	WNW	27	13	7	11	5.0	
St Louis (U)	465	995.6	------	56	36	45.9	.6	85	6	16	8	0	14			1.36	2.28	.53	10	4	1.0	2	14.1		50	SW	31	11	9	11	5.3	66
St. Louis	552	995.6	1016.5	56	34	45.1	.7	85	6	16	8	0	15	29	65	5.84	2.58	.49	6	1	5.4	3	12.6	WNW				9	11	11	5.3	
Springfield	1265	968.2	1016.4	57	34	45.4	.5	83	6	22	8+	0	13	30	61	5.50	2.66	.20	6	1	[illegible]	2	16.9	S	45	SW	26	13	7	11	5.3	66
MONTANA																																
Billings	3568	888.6	1015.0	46	25	35.5	1.4	71	24	11	11	0	31	21	56	.36	-.63	.14	5	0	1.9	2	14.1	SW	61	NW	3	6	7	18	6.8	73
Butte	5530	826.3	1018.7	39	12	25.4	1.8	64	24	-26	11	0	30	15		.45	-.59	.10	5	0	7.6	5	7.5	NW	*47	WNW	26	5	9	17	6.8	
Glasgow	2277	938.7	1015.7	39	14	26.2	-2.2	65	25	-24	11	0	28	9	74	.13	-.47	.13	1	0	3	5	10.4	ESE	*37	WNW	27	2	12	17	7.1	
Great Falls	3664	885.5	1014.7	44	23	33.8	1.3	69	25	14	11	0	24	17	55	.38	-.61	.14	4	0	2.7	1	13.4	SW	61	SW	3	5	10	16	6.9	61
Havre (U)	2488	924.1	1015.5	44	21	32.3	2.0	72	25	16	11	0	25	20	63	.14	-.56	.06	6	0	2.5	1	9.0		44	W		5	4	22	7.4	53
Helena	3893	871.0	1016.4	44	23	33.4	1.2	73	25	10	11	0	28	19	57	.42	-.30	.25	7	0	5.5	3	10.1	W	45	SW	3	6	7	18	7.0	61
Kalispell	2965		-	39	22	30.8	-2.9	51	25	15	11	0	24			.89	-.12	.29	16	0	1.9	20						4	7	20	7.4	
Miles City	2629	929.6	1015.7	48	22	34.9	3.7	75	24+	-7	11	0	24	22		.08	-.62	.03	5	1	.5	T	12.1	NW	*47	WNW	3	2	12	17	7.3	
Missoula	3200	901.5	1018.7	43	21	31.9	-2.8	65	25	-5	11	0	27	22	67	1.17	.34	.40	15	0	7.1	6	7.1	W	43	W		4	7	20	7.5	61
NEBRASKA																																
Grand Island	1841	948.5	1016.2	50	24	37.0	.6	84	25	1	12	0	27	25	65	.52	-.79	.44	4	0	1.7	T	12.6	N				15	7	9	4.4	
Lincoln (U)	1166	-----	-	51	27	39.1	-.3	81	25	4	12	0	13			2.35	1.22	.07	6	0	1.5	T	11.9		45	NW	27	13	13	5	4.5	62
Norfolk	1544	960.0	1017.1	46	22	34.1	-.8	70	25	3	12	0	23	21	63	.14	1.41	.05	4	0	[illegible]	1						9	6	16	6.2	
North Omaha	1323	966.5	-	48	23	35.6		80	25	0	12	0	27			[illegible]		.07	3	0	[illegible]	T										
North Platte	2779	914.3	1015.3	53	22	37.1	.7	83	25	1	12	0	27	21	58	.21	-.67	.15	1	0	[illegible]	2	12.8	NW	67	NW	28	16	6	9	4.5	71
Omaha	978	976.0	1016.8	50	25	37.6	-.6	80	25	3	12	0	23	22	57	.12	1.20	.08	1	1	.4	T	14.8	SSE	45	N	6	9	11	11	5.9	68
Scottsbluff	3950	876.4	1015.1	52	21	36.5	1.6	78	26	12	12	0	27	14	53	.29	-.59	.16	4	0	3.8	2	13.0	WNW				13	8	10	5.3	
Valentine (U)	2587	921.1	---	46	20	33.1	-.6	80	31	4	12	0	28			.14	[illegible]	.08	5	0	2.8	2	12.5		46	NW	3	10	10	11	5.5	72
NEVADA																																
Elko	5075	845.9	1019.8	50	23	36.6	.5	72	24	0	7	0	30	22	60	.19	-.51	.14	3	0	2.9	2	[illegible]	WSW	*38	WNW	26	10	12	9	5.2	
Ely	6257	808.3	1018.3	51	21	35.8	.5	69	24	7	7	0	30	16	47	.71	-.95	.54	3	0	3.2	1	11.9		38	N	6	14	9	8	4.3	80
Las Vegas	2162	949.2	1014.8	72	41	56.5	.0	88	24	25	13	0	5	7	15	.00	-.35	.00	0	0	0		[illegible]	SW	*55	NNW	6	24	4	3	2.0	95
Reno	4397	863.5	1019.4	58	24	41.4	.8	74	23	15	8+	0	27	19	44	.05	-.65	.05	1	0	T		[illegible]	WNW	70	SW	1	13	14	4	4.0	93
Winnemucca	4299	869.6	1019.5	55	22	38.6	-.8	75	24	5	12	0	27	14	44	.06	-.80	.04	4	0	[illegible]	T	[illegible]		47	W	1	9	10	12	5.2	84
NEW HAMPSHIRE																																
Concord	339	1004.3	1015.5	37	15	25.6	-6.2	52	22	-8	1	0	31	15	71	4.67	.63	.54	14	0	38.3	24	6.8	NNW	24	NW	27	10	6	15	6.4	50
Mt Washington	6262	794.2	-	15	1	7.7	-4.3	30	8	-17	25	0	31		97	7.44	1.33	1.56	20	0	67.5	1	39.6	W	%121	W	11	5	6	20	7.5	36

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure: Station ∅	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90° F or above	Temperature: No. of days: Min. 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max. depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days (sunrise to sunset): Partly cloudy	No. of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F	°F	°F	°F	°F.		°F				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
NEW JERSEY																																
Atlantic City (U)	8	1011.8	----	46	34	40.0	-1.5	55	23	23	25	0	12	--	-	4.40	0.87	1.09	13	1	10.2	6	16.5	---	57	NE	19	9	6	16	6.6	46
Newark	11	1014.8	1016.0	45	29	36.9	3.6	65	5	18	17+	0	20	25	66	6.29	2.51	1.76	15	2	26.0	21	12.0	NNE	*36	NNE	16	8	8	15	6.5	--
Trenton (U)	56	1008.1	1015.2	45	31	38.0	-3.3	64	5	20	17	0	16	-	-	5.54	2.34	1.56	14	3	18.8	12	11.2	---	34	N	16	8	6	17	6.3	51
NEW MEXICO																																
Albuquerque	5310	847.3	1013.2	64	34	49.2	3.2	77	24+	18	12	0	12	9	22	T	-.44	T	0	0	.0	0	10.1	SE	51	E	11	19	9	3	2.9	92
Clayton	4969	842.9	1013.9	61	26	43.5	2.0	82	25	7	11+	0	24	--	--	.16	-.50	.13	2	0	2.1	2	----	---	--	---	--	17	10	4	3.7	--
Raton	6379	802.2	1013.3	59	20	39.8	1.7	74	25+	5	12	0	28	--	--	.06	-.58	.06	1	0	.6	1	----	---	--	---	--	18	10	3	3.3	--
Roswell	3612	892.0	1013.7	72	33	52.5	1.8	87	26	18	8	0	14	14	34	.03	-.50	.03	1	0	.3	T	11.3	---	65	SW	6	18	11	2	3.1	--
NEW YORK																																
Albany	277	1012.5	1016.2	36	20	27.9	-5.2	49	2	-3	18	0	29	20	72	4.76	2.43	1.41	13	1	34.7	20	9.5	W	34	W	9	7	8	16	6.8	57
Binghamton	1601	954.4	1015.0	34	19	26.7	-4.4	48	11	1	18	0	30	19	79	5.11	2.12	1.20	19	2	31.7	14	13.9	NW	46	SE	8	4	6	21	7.7	49
Buffalo	693	987.3	1016.4	38	23	30.6	-2.4	55	6+	10	18	0	27	23	75	5.25	2.53	1.62	17	2	23.1	10	13.9	SW	57	SW	11	3	7	21	7.7	53
New York (U)	10	1003.9	------	45	31	37.9	-2.8	64	5	18	25	0	15	-	--	5.16	1.60	1.09	15	3	20.6	12	15.7	---	60	N	16	11	7	13	5.8	54
New York	19	1014.2	1016.0	44	32	38.0	-2.5	64	5	19	25	0	16	25	63	4.76	1.26	1.08	15	5	17.7	13	16.5	NW	54	NE	16	7	9	15	6.5	--
Rochester	543	996.4	1016.3	36	21	28.7	-4.3	57	11	0	18	0	28	22	79	3.41	.45	1.14	18	2	33.3	15	13.4	WSW	65	W	11	6	8	17	7.0	56
Schenectady	217	------	------	37	23	30.2	-2.3	50	2	4	18	0	28	--	--	4.90	2.21	1.33	13	1	32.6	25	----	---	--	---	--	20	4	7	4.0	--
Syracuse	424	994.6	1017.4	36	21	28.5	-5.7	56	11	5	18	0	29	20	73	4.63	1.39	1.01	21	2	36.0	12	9.3	WNW	56	SE	11	6	6	19	7.1	54
NORTH CAROLINA																																
Asheville (U)	2203	-----	-----	59	35	47.2	.4	78	27	21	21	0	16	-	--	3.53	-.04	1.25	14	1	1.1	1	9.6	---	35	NW	8	10	7	14	5.6	66
Charlotte	727	988.9	1017.4	64	39	51.2	.2	82	27	28	21+	0	10	37	64	3.74	-.35	2.36	11	2	T	T	11.0	SSW	47	W	8	9	10	12	5.6	67
Greensboro	891	985.0	1017.6	59	35	47.0	-1.2	78	7	23	22	0	15	33	63	2.54	1.11	1.67	10	2	T	0	11.6	SW	38	WNW	16	10	5	16	5.7	64
Hatteras (R)	4	1016.4	1017.2	57	45	51.2	-1.5	69	8+	33	25	0	0	43	75	2.80	-1.09	.84	10	3	.0	0	14.6	S	45	SW	16	7	10	14	6.3	51
Raleigh	433	1003.2	1017.2	61	37	48.8	-1.3	83	7	24	22	0	10	35	63	3.37	-.23	2.21	11	1	T	0	10.6	S	*29	NW	18	11	6	14	5.5	64
Wilmington	30	1016.5	- -	65	43	53.8	-.9	80	6	27	22	0	6	--	--	2.13	-1.32	1.19	9	0	.0	0	12.8	---	56	SW	8	10	11	10	4.9	71
Winston-Salem	967	981.5	1017.2	59	37	48.0	-.5	80	7	26	21	0	9	32	59	2.91	-.91	1.15	11	2	T	0	10.8	SW	*35	W	16	10	6	15	5.8	--
NORTH DAKOTA																																
Bismarck	1650	954.3	1017.0	34	13	23.6	-3.1	56	24	-25	12	0	31	18	79	1.21	.45	.48	11	0	11.8	7	13.1	NW	44	NW	17	5	12	14	6.5	66
Devils Lake (U)	1471	961.4	-----	25	7	15.6	-7.0	39	20	-21	11	0	31	--	--	2.29	1.56	1.36	12	0	25.6	20	9.6	---	26	N	27	5	11	15	6.7	62
Fargo	895	981.7	1018.0	29	10	19.5	-5.8	46	25	-17	11	0	31	14	77	.91	.02	.68	5	1	9.2	8	15.7	S	47	SE	31	4	9	18	7.3	64
Williston (U)	1877	946.2	1015.8	36	17	26.2	-.3	64	24	-16	11	0	27	18	71	.76	.01	.41	11	0	6.1	5	8.2	---	27	NW	20+	3	9	19	7.2	55
OHIO																																
Akron	1210	977.5	1016.5	44	25	34.2	-2.3	64	6	10	17	0	28	26	73	4.23	1.07	.95	17	3	11.4	5	13.7	N	--	---	--	8	4	19	7.2	--
Cincinnati Obs	761	------	----	53	33	42.9	-.4	75	5	21	19+	0	16	--	--	3.91	-.16	1.32	12	4	6.1	5	8.0	---	38	SW	1	--	--	--	---	50
Cincinnati	869	983.5	1016.1	52	32	41.7	.0	73	5	18	20	0	18	28	62	4.19	.15	1.77	12	3	5.8	4	12.0	SSW	*35	SSW	1+	8	4	19	7.2	--
Cleveland	787	987.1	1016.1	44	28	36.0	-.8	66	6+	13	17	0	26	27	73	4.60	1.71	1.15	15	2	10.7	5	15.6	S	61	SW	1	7	7	17	6.9	44
Columbus (U)	724	-----	------	49	31	40.0	-1.1	71	5	15	17	0	17	--	-	3.13	-.09	.66	13	2	8.1	6	----	---	--	---	--	--	--	--	---	--
Columbus	815	985.8	1016.6	49	30	39.5	.3	72	5	9	17	0	20	29	70	3.49	.06	.80	16	3	7.6	6	11.5	SSW	42	SW	1	5	8	18	7.0	49
Dayton	1002	979.1	1016.3	48	29	38.5	-1.3	71	5	14	17	0	21	28	67	3.36	.12	1.22	11	4	8.9	5	13.5	SSW	45	SW	1	6	7	18	7.3	55
Sandusky (U)	603	992.7	----	43	28	35.7	1.8	65	6	14	17	0	23	-	-	4.59	1.70	1.01	13	4	11.2	7	9.4	---	48	W	1	6	8	17	6.5	55
Toledo	676	990.1	1016.2	42	25	33.7	---	64	6	11	17	0	28	26	76	3.39	-- -	1.28	15	4	7.9	3	11.8	WSW	56	W	11	6	4	21	7.1	53
Youngstown	1178	972.6	1016.3	44	24	33.9	-2.8	64	6+	13	25	0	28	25	75	4.45	1.00	1.00	19	4	18.2	7	11.6	NNE	*46	WNW	8	7	6	18	7.2	--
OKLAHOMA																																
Oklahoma City	1280	971.9	1016.0	64	37	50.5	.8	87	5	18	12	0	9	28	49	.56	-1.53	.42	5	1	.2	T	16.9	SSE	53	SE	20	18	4	9	3.8	74
Tulsa	672	991.5	1016.1	64	39	51.7	1.8	88	27	21	12	0	10	34	54	1.23	-1.38	1.12	4	2	T	0	13.8	S	33	S	27	18	6	7	3.9	72
OREGON																																
Astoria	8	1018.3	1019.2	49	36	42.8	-2.5	67	17	27	6+	0	11	38	84	13.47	5.20	2.66	24	2	2.9	1	9.2	S	--	---	--	2	5	24	8.5	--
Burns (U)	4140	874.0	1019.0	49	25	36.7	-2.2	68	23+	8	12	0	25	22	60	.37	-.40	.12	6	0	3.4	4	----	---	--	---	--	7	13	11	6.3	--
Eugene	361	1007.5	1021.3	53	36	44.2	-2.5	66	16	20	6	0	9		-	4.83	.97	1.66	15	0	2.0	2	10.5	---	--	---	--	1	8	22	8.3	--
Meacham	4050	- -	------	42	24	33.1	-.9	57	18+	7	12	0	27	--	--	2.28	-2.13	.55	18	0	25.0	42	----	---	--	---	--	2	7	22	8.1	--
Medford	1312	973.2	1021.6	56	32	44.0	-3.2	70	16	16	6	0	13	32	68	1.31	-.21	1.01	5	0	8.1	6	5.0	NNW	*29	WSW	25	9	5	17	6.7	--
Pendleton	1492	964.1	1018.6	53	34	43.5	1.7	69	25	20	11	0	11	30	61	.54	-.64	.22	8	0	.5	T	11.9	WNW	*63	WNW	2	5	6	20	7.5	--
Portland	21	1014.6	1020.3	52	37	44.2	-2.4	70	17	24	11	0	10	37	78	4.30	.83	.78	19	0	1.8	2	10.9	SSW	37	S	7	3	4	24	8.3	29
Roseburg	505	1002.4	1021.3	57	35	45.6	-	70	16+	19	6	0	9	-	-	3.05	.12	1.23	12	0	7.0	3	5.0	---	27	S	2	4	4	23	7.9	40
Salem	195	1012.9	1020.3	52	36	43.9	-2.9	68	16	23	6	0	11	37	79	5.91	1.72	.97	20	0	1.8	1	10.0	S	--	---	--	5	3	23	8.2	--
Sexton Summit (R)	3836	----	- --	44	30	36.5	2.8	61	17	16	6	0	21	-	--	2.49	-.47	.86	12	0	25.0	77	----	---	--	---	--	7	5	19	7.3	--
PENNSYLVANIA																																
Allentown	376	1002.2	1016.7	44	26	34.9	-3.0	64	5	10	21	0	26	25	69	4.88	1.69	1.04	15	1	18.1	11	14.1	WNW	--	---	--	7	9	15	6.6	--
Harrisburg	335	1002.4	1016.7	46	30	38.2	-2.6	70	5	19	1+	0	20	22	57	4.41	1.54	.96	13	2	20.2	9	9.9	W	34	W	8	5	7	19	6.9	55
Philadelphia (U)	26	-	-----	46	33	39.2	-4.3	63	5	22	25	0	13	--	--	4.49	1.12	1.60	14	--	----	--	----	---	--	---	--	--	--	--	---	--
Philadelphia	10	1011.4	1016.0	46	31	38.8	-3.5	65	5	21	25	0	14	26	66	4.65	1.33	1.56	14	2	10.9	9	11.5	N	47	N	16	6	8	17	6.8	51
Pittsburgh (U)	749	---	----	49	31	40.4	-1.2	69	7	20	17+	0	19	--	--	5.03	1.62	1.11	20	--	9.5	--	----	---	--	---	--	--	--	--	---	48
Pittsburgh	1151	985.0	1016.0	47	28	37.2	1.4	67	7	15	20	0	25	26	68	5.31	2.11	1.21	16	2	14.8	9	12.5	WSW	*41	W	8	5	6	20	7.2	76
Reading (U)	266	1003.7	1015.9	46	31	38.3	-3.3	69	5	21	17+	0	17		--	4.82	1.51	1.15	14	2	11.2	9	13.5	---	42	W	8	5	9	17	6.8	50
Scranton	940	980.1	1016.7	40	23	31.5	4.8	55	5	6	18	0	27	22	67	2.48	-.35	.60	18	3	14.5	9	9.0	NNW	42	W	8	5	6	20	7.3	41
Shippingport (U)	736	-----	--	47	28	37.7	---	68	7	14	20	0	26	--	--	4.30	---	1.36	13	3	9.0	8	4.2	---	%41	WSW	1	--	--	--	7.9	--
Williamsport	527	997.0	--	44	26	35.0	-3.3	62	5	13	1	0	26	--		3.28	-.06	.81	18	0	12.0	7	----	---	--	---	--	6	7	18	6.9	--
RHODE ISLAND																																
Block Island	110	1005.3	1009.9	40	29	34.2	-2.9	47	8+	16	25	0	19	--	--	5.47	1.93	1.10	14	1	24.1	12	----	---	--	---	--	11	6	14	6.0	--
Providence	55	1008.8	1015.0	41	25	33.0	3.8	54	3	10	18	0	25	22	68	5.51	1.93	.96	15	1	31.6	20	12.1	NE	*42	NE	16	11	5	15	6.1	50
SOUTH CAROLINA																																
Charleston (U)	9	----		66	49	57.9	.2	77	27	35	25	0	0	--	-	2.58	-.80	1.37	8	1	.0	0	10.3	---	38	SE	3	11	7	13	5.5	74
Charleston	41	1016.8	1018.7	69	45	56.9	-.3	83	27	27	22	0	4	44	69	2.45	-1.17	.70	9	2	.0	0	12.5	SSW	--	---	--	13	11	7	5.2	--
Columbia	217	1008.9	1017.5	68	41	54.7	.5	84	7+	27	21	0	8	40	67	3.99	.20	1.98	9	2	T	T	9.1	SW	*32	W	8	11	10	10	5.2	73
Florence	146	1011.9	---	68	42	54.8	-.6	85	27	27	25	0	6	--	--	2.31	-1.23	.84	7	1	.0	0	----	---	--	---	--	10	11	10	5.2	--
Greenville	1018	979.1	1016.9	63	40	51.5	.0	78	27	29	17+	0	6	33	57	4.84	.33	2.77	11	1	T	0	11.9	SW	42	NW	16+	10	7	14	5.9	69
Spartanburg	801	- --	---	63	40	51.7	.0	80	27	28	25	0	5	-	--	4.55	.06	2.71	12	1	.0	0	11.5	---	*39	W	8	--	--	--	---	--
SOUTH DAKOTA																																
Huron	1282	968.2	1017.2	37	16	26.6	5.1	64	25	-16	12	0	30	21	81	1.35	.26	.52	8	0	12.6	12	14.3	SSE	50	NW	28	4	10	17	7.2	56
Rapid City	3165	898.7	1015.6	47	21	34.1	2.8	79	26	10	12	0	27	21	64	.75	.31	.53	8	0	7.5	5	11.0	NNW	49	NW	3+	9	10	12	6.0	62
Sioux Falls	1420	963.8	1016.9	38	17	27.6	-4.4	62	26+	-20	12	0	30	18	68	2.19	.84	1.96	6	1	21.6	19	13.6	WNW	*39	WNW	29	8	5	18	6.8	--
TENNESSEE																																
Bristol	1519	961.9	-	59	35	46.9	.2	79	7	20	20+	0	15		-	4.60	.83	.80	13	3	T	T	----	---	--	---	--	8	8	15	6.1	--
Chattanooga	670	990.0	1018.0	64	39	51.4	.7	82	6	24	21	0	13	37	63	3.80	-2.25	1.12	11	4	T	0	8.5	SSW	41	SW	3	9	7	15	5.7	56
Knoxville	950	981.6	1017.5	61	39	50.0	.6	79	6+	25	25	0	9	36	62	4.58	-.25	1.41	13	4	T	T	10.5	SW	47	SW	1	9	9	13	5.7	58
Memphis (U)	271	-	---	61	44	52.2	-.2	79	6	30	20	0	2	--	--	2.70	-2.50	1.49	7	--	T	T	----	---	--	---	--	--	--	--	---	--
Memphis	263	1003.1	1018.1	62	41	51.5	-.5	80	6	28	20	0	3	38	62	2.54	-3.05	1.21	7	3	T	T	13.0	S	45	N	18	8	9	14	6.1	60
Nashville	577	997.4	1017.7	61	38	49.5	-.3	78	6+	24	20	0	8	37	67	4.08	-1.20	1.67	10	4	T	0	10.9	S	40	NW	3	8	10	13	5.9	75
Oak Ridge (R)	905	984.1	--	62	38	50.4	2.9	81	6	24	21	0	19	--		6.44	.75	1.59	15	3	T	0	6.1	---	--	---	--	8	8	15	6.2	--
TEXAS																																
Abilene	1759	953.6	1014.9	73	44	58.7	3.6	91	26+	23	12	2	5	30	40	.35	-.77	.35	1	1	T	T	15.1	SSW	50	N	7	13	9	9	4.5	71

See footnotes at end of table

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No of days							No of days		Snow, Sleet				Fastest mile							
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover tenths (sunrise - sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F	°F	°F	°F		°F		#		°F	%	In	In	In			In	In	M p h		M p h			0-3	4-7	8-10	0-10	%
TEXAS (Cont'd.)																																
Amarillo	3590	887.2	1014.0	65	30	47.5	1.1	86	26	9	12	0	18	16	36	0.03	1.01	0.03	1	0	0.3	T	17.1	SW	56	NE	6	15	5	8	3.2	80
Austin	615	994.9	1017.0	75	49	61.8	1.5	91	27	31	8	1	1	41	59	.26	2.26	.23	2	1	0	0	12.9	S	38	N	7	10	13	8	4.4	61
Brownsville	16	1011.5	1015.6	78	59	68.6	.5	92	7	43	6+	1	0	60	79	.29	.85	.22	4	1	0	0	14.0	SE	45	N	7	13	15	3	5.1	69
Corpus Christi	41	1015.2	1016.3	75	56	65.6	.3	86	3	31	8	0	1	57	79	.04	1.51	.07	4	1	0	0	12.3	SSE	42	N	7	11	8	12	5.8	73
Dallas	487	998.3	1017.2	71	47	59.0	1.6	95	27	30	12+	1	4	38	53	.11	2.67	.08	3	0	0	0	11.6	SSE	42	NW	7	12	6	13	5.1	61
Del Rio	1091	980.7	1015.2	80	50	65.2	2.3	97	27	29	8	3	1	33	42	T	.73	T	0	0	0	0	10.9		52	NW	7	11	1	6	4.0	76
El Paso	3920	885.5	1013.3	73	42	57.5	3.0	83	25	24	8	0	5	11	17	T	.28	T	0	0	0	0	13.3	WSW	52	W	6	17	10	1	3.3	90
Fort Worth	544	996.6	1017.3	71	46	58.4	2.7	96	27	28	8	1	4	36	51	.12	2.56	.05	3	0	T	T	11.6	S	*13	NNW	7	12	8	11	5.6	
Galveston (U)	7		-	68	57	62.2	1	78	3	41	8	0	0			1.11	1.96	.34	7		0	0	12.8		42	NW	7					46
Galveston	5	1015.2	1017.6	68	56	62.2	1	77	3+	40	8	0	0	55	81	1.62	1.64	.68	7	1	0	0	15.0	S				11	7	13	5.8	
Houston (U)	41	1011.9	- - -	72	54	63.3	7	85	11	38	8	0	0			1.27	1.87	.69	9	1	0	0	10.9		38	NW	7	10	7	11	6.1	16
Houston	50	1014.6	1017.6	73	52	62.6	1.1	86	11	32	8	0	1	52	71	.78	2.00	.55	8	0	0	0	12.4	SSE				8	9	14	6.2	
Laredo	500	999.3	1014.7	83	57	70.2	1.8	101	6	41	8	7	0	52	60	.10	-.80	.08	2	0	0	0	12.7	SE	*40	NNW	7	19	1	7	1.8	
Lubbock	3243	902.1	1013.9	69	34	51.8	2.1	88	26	17	16	0	12	23	37	T	-.80	T	0	0	T	T	17.5	SW	*17	NNE	6	19	8	4	3.1	
Midland	2854	915.3	1014.4	73	41	57.0	1.3	90	26	22	12	1	6	24	33	.04	-.59	.04	1	0	T	T	9.7	WSW	*29	SW	5	17	9	5	3.5	-
Port Arthur	16	1016.3	1017.8	71	52	61.2	.9	82	3	31	8	0	1	53	78	2.81	-1.19	1.46	9	3	.0	0	13.2	S	42	NW	7	9	7	15	6.1	48
San Angelo	1903	947.9	1015.2	75	44	59.5	1.3	91	27	25	8+	1	1	30	39	.05	-.90	.05	1	0	T	T	12.8	SW	*38	N	7	16	9	6	3.7	
San Antonio	792	991.2	1016.2	77	50	63.3	1.9	89	27	28	8	0	1	44	57	.27	-1.85	.19	5	1	0	0	10.0	SSE	38	N	7	12	12	7	4.5	72
Victoria	110	1011.9	1016.6	75	53	63.6	-.3	85	3+	35	8	0	0	52	69	.64	2.00	.26	5	0	0	0	12.5	-	%52	NNW	7	9	9	13	6.1	
Waco	500	995.3	1016.6	74	46	59.8	1.4	93	27	26	8	1	4	41	55	.04	2.90	.03	2	0	0	0	16.3	S	-	- - -		10	11	10	5.3	
Wichita Falls	1020	978.7	1015.6	70	41	55.5	2.5	94	27	22	12	4	5	30	43	T	1.61	T	0	0	T	T	13.7	S	*33	N	6	11	10	7	1.2	
UTAH																																
Milford	5028	844.2	1017.8	58	22	40.0	.8	78	24	5	13	0	28			.30	.76	.29	3	0	3.3	2	- -		-	- -	-	19	1	8	3.6	
Salt Lake City	4220	867.9	1017.9	55	30	42.4	1.3	78	24	13	12	0	19	21	46	.10	1.56	.07	4	0	2.2	1	9.9	SE	42	SW	31	9	15	7	5.2	72
VERMONT																																
Burlington	331	1001.0	1016.3	33	14	23.7	-5.6	43	2+	5	19	0	30	14	68	2.37	.18	.73	15	0	28.0	14	8.2	N	42	SW	11	8	5	18	6.5	56
VIRGINIA																																
Lynchburg	947	981.6	- ----	57	34	45.3	-1.1	80	6	23	25	0	12	-	-	2.52	1.05	.64	14	3	7	T	10.1		41	S	8	6	11	14	6.4	55
Norfolk	26	1015.8	1017.0	58	39	48.1	-1.0	83	7	28	1+	0	8	36	68	3.09	.18	1.74	15	2	T	T	13.2	SSW	47	SW	14	8	6	17	6.4	50
Richmond	162	1010.7	1017.0	58	35	46.3	-1.2	82	6	22	1+	0	12	32	63	3.06	-.36	.87	12	1	T	0	9.9	S	30	SW	8+	8	6	17	6.5	57
Roanoke	1174	973.6	1016.6	58	34	45.9	.4	80	6	22	21	0	14	29	57	2.22	-.97	.50	12	2	T	0	11.1	SE		-		8	9	14	6.2	--
WASHINGTON																																
Olympia	190	1011.5	1018.7	49	32	40.6	-3.1	72	18	20	11	0	16	33	76	8.27	3.77	1.36	21	1	2.9	1	9.4	SSW	*40	SW	2	2	5	24	8.5	
Seattle (U)	14	-----	-- -	49	38	43.2	-3.8	63	18	28	11	0	4	-	-	5.69	2.63	.74	21	1	2.1	1	12.1		60	SW	2	3	4	24	8.3	60
Seattle	14	1017.6	1018.6	--	--	--	--	-				-	-	35	75	--		--			--	--	9.3	SSE	-	--						
Seattle-Tacoma	379	1004.4	1019.0	48	34	40.8	-3.7	66	18	20	10	0	11	35	82	4.95	1.55	.62	19	3	2.3	1	13.8	SW	*51	SW	2	1	5	25	8.6	-
Spokane	2357	947.2	1017.6	45	28	36.1	-2.0	60	18	7	6	0	22	28	75	1.29	-.05	.20	16	0	7.6	3	10.8	SW	40	SW	1	6	8	17	7.2	57
Stampede Pass (R)	3958	877.4	1018.6	32	23	27.3	-3.4	46	18	11	11	0	31	-		12.79	2.19	3.12	24	0	95.8	210			-	---		2	4	25	8.7	-
Tatoosh (R)	101	1013.5	1016.8	45	38	41.4	-3.3	53	18	31	4	0	3	36	82	9.88	2.06	1.38	22	2	8.1	1	17.2	E	72	S	2	3	4	24	8.4	29
Walla Walla (U)	949	982.4	1018.6	53	37	45.1	-1.7	67	25	22	11	0	7	-		.97	-.55	.56	11	1	3	T	6.8		45	W	2	4	5	22	7.7	44
Yakima	1061	978.3	1018.1	52	29	40.5	-3.2	63	29	16	11	0	18	28	62	.21	-.25	.11	3	1	T	4	9.1	W	-	--	--	8	3	20	7.1	-
WEST VIRGINIA																																
Charleston	950	980.2	1016.4	55	33	44.2	-.7	80	6	18	21	0	16	30	63	6.59	2.43	1.78	17	1	2.8	1	9.7	SW	*31	WSW	14	4	6	21	7.7	-
Elkins	1970	---- -	--- --	51	27	39.0	-.3	68	5	8	20	0	24	26		4.97	1.18	.96	22	4	9.3	5	8.8	WNW	*34	W	16	5	5	21	7.5	-
Huntington (U)	565	-----	----	57	34	45.2	-2.0	82	6	20	20	0	14	--		7.58	3.50	2.11	18	--	T	T			- -							
Parkersburg (U)	615	------ -		53	32	42.5	-1.1	73	5	19	20+	0	16	-	--	5.71	2.17	1.74	16	3	3.3	3	7.4		27	NW	29	6	6	19	7.1	40
WISCONSIN																																
Green Bay	689	993.2	1016.9	33	15	24.0	-4.5	47	26	-5	13	0	31	17	71	1.86	.10	.85	13	3	19.0	14	11.5	NE	47	NE	11	10	8	13	5.9	58
La Crosse	652	991.2	1017.0	36	17	26.1	-5.5	51	5+	8	16	0	30	19	72	3.64	1.78	1.58	15	2	22.4	17	9.9	NW	*32	ESE	27	10	7	14	6.3	--
Madison	857	980.0	1016.4	39	21	30.0	-2.5	58	26	3	24	0	31	22	74	2.53	.70	1.02	15	3	14.3	5	11.0	NW	45	NE	10	9	7	15	6.4	65
Milwaukee	672	990.5	1016.3	39	24	31.4	-1.9	54	26	14	12+	0	28	22	70	2.36	.17	.81	12	3	11.7	6	14.4	WNW	56	SW	11	6	11	14	6.6	52
WYOMING																																
Casper	5322	833.4	1013.8	46	21	33.2	-.8	70	24	-13	11	0	24	13	49	.71	-.42	.50	6	0	11.3	6	17.4	WSW	*81	WSW	3	8	10	13	6.0	
Cheyenne	6131	807.7	1014.7	46	21	33.0	1.2	70	24+	-9	12	0	24	11	45	.24	-.98	.12	6	0	4.0	3	18.6	W	66	NW	27	13	[illegible]	9	4.6	74
Lander	5563	832.4	1015.6	46	19	32.7	1.4	70	25	-11	11+	0	25	14	48	.62	-.52	.40	5	0	11.2	7	8.6		50	SW	3+	10	11	10	5.5	86
Sheridan	3942	882.2	1016.7	44	19	31.7	.1	72	25+	-18	11	0	25	21	64	1.99	.62	.63	11	0	21.9	11	9.9	NW	54	NW	27	4	13	14	6.5	58
PACIFIC AREA																																
Canton Island	9	1008.5	1008.7	88	78	82.6	.5	90	29	75	19+	1	0	73	77	.69	1.23	.20	8	0	0	0				--		2	22	7	6.2	
Hilo	31	1016.3	1017.7	78	63	70.8	0	81	6+	59	23	0	0	64	82	15.08	-.64	3.53	28	0	0	0	8.1	WSW	*23	ESE	26	0	8	23	8.5	40
Honolulu	7	1017.3	1018.0	80	68	73.8	.8	82	2+	61	12	0	0	62	69	.53	1.77	.29	6	0	0	0	11.6	ENE	57	NE	29	4	10	17	7.3	59
Koror (R)	94	1006.1	1010.0	88	75	81.3	.4	90	4	73	8+	1	0	75	82	8.80	1.12	1.73	19	1	0	0				--		2	7	22	8.1	
Lihue	115	1012.9	1017.8	79	67	72.7	2.1	82	7	58	12	0	0	65	79	1.00	-.07	1.26	23	1	0	0	10.8	E	26	NE	16	2	9	20	7.9	27
Majuro	10	1008.5	1008.8	85	77	81.1	--	88	14+	73	23	0	0	75	81	14.33		2.74	22	1	0	0						4	3	24	8.3	--
Ponape (R)	112	1004.1	1009.6	86	75	80.4	-1.2	90	11	71	5+	1	0	75	84	18.33	6.97	4.13	28	2	0	0						0	3	28	9.2	
Truk (Moen Is.)	8	1009.1	1009.7	85	76	80.4	.9	87	4+	73	23+	0	0	75	82	12.21	5.58	2.42	25	4	0	0		-				0	1	30	9.6	-
Wake Island	11	1015.6	1016.3	82	73	77.4	.5	84	6+	69	2	0	0	67	73	1.86	.46	.77	14	0	0	0	18.5	ENE				7	19	5	5.1	
Yap (R)	53	1008.1	1010.0	86	76	80.9	.6	89	29+	72	9+	0	0	74	80	8.71	4.03	3.30	19	0	0	0	-	-				0	1	30	9.8	
WEST INDIES																																
San Juan, P.R. (U)	47	-	- ---	81	71	76.0	.4	91	25	68	1+	1	0	-		7.82	5.40	5.26	17		0	0										
San Juan, P.R.	15	1014.3	1016.4	83	69	75.7	-	88	25	63	1+	0	0	27	78	4.83		2.12	17	1	0	0	9.9	ENE	29	NE	23	5	22	4	5.3	76
ALASKA																																
Anchorage	92	1003.7	1008.7	30	9	19.6	-5.2	42	15	-22	2+	0	31	4	52	.28	-.32	.11	4	0	4.6	29	6.3	NE	*25	S	20	12	4	15	5.5	69
Annette	110	1007.5	1011.5	41	30	35.9	-2.2	51	31	18	5	0	17	29	76	9.60	.92	1.63	22	0	13.7	4	12.0	SE	*42	SE	6	4	5	22	7.8	
Barrow	22	1017.6	1018.3	-9	-21	14.8	.1	6	20	-36	6	0	31	29	46	.20	.08	.08	4	0	2.0	12	12.2	NE	35	NE	10	11	7	13	5.1	
Bethel	10	1006.4	1007.8	17	-3	7.2	-4.3	41	12	-42	1	0	31	2	78	.77	-.15	.17	15	0	6.4	24	12.8	N	*37	SSE	19	14	3	14	5.2	
Cold Bay	90	1003.1	1007.2	29	17	22.9	-6.8	43	10	7	4	0	29	19	84	2.53	.64	1.34	17	0	13.4	8	20.2	NNW	*62	SE	9	0	7	24	8.5	
Cordova	40	1005.8	1007.6	35	12	23.6	-6.5	47	23+	24	3	0	31	-		3.99	1.93	1.16	8	0	15.7	42						8	8	15	6.4	
Fairbanks	436	994.6	1012.7	21	-9	5.9	-3.1	42	16+	-19	1	0	31	-3	65	.15	-.43	.07	3	0	3.1	38	4.6	NNE	*27	W	17	9	10	12	5.8	
Juneau	15	1009.8	1010.8	36	20	28.0	-4.8	46	22+	11	10	0	28	2	74	4.69	1.22	1.26	15	0	33.9	34	7.6	ESE	31	SE	17	4	5	22	7.9	37
King Salmon	44	1004.1	1006.2	24	6	15.0	-6.3	42	12	-34	1	0	30	10	80	1.59	.37	.81	11	0	14.2	16	13.8	NNW	*15	SSE	17	11	3	17	6.9	
Kotzebue	10	1012.5	1013.1	10	-11	-.4	1.2	32	15	-46	1	0	31	-5	74	.20	-.07	.07	8	0	5.6	15	9.4	E	*35	ENE	19	15	2	14	5.1	
McGrath	334	997.6	1011.1	21	10	5.5	-1.8	41	19	-51	2	0	31	1	67	1.40	.42	.30	11	0	15.6	43	[illegible]	N	*23	SSE	16	14	2	15	5.2	
Nome	13	1009.8	1010.3	14	-6	3.9	-4.6	33	15+	-33	1+	0	31	1	77	.70	-.21	.16	13	0	6.9	41	9.5	ENE	45	NE	19	12	5	14	5.5	46
Northway	1713	947.2	1013.5	17	-13	2.0	-4.9	41	17	-56	2	0	31			.05	-.17	.02	4	0	2.0	15						4	10	17	6.9	
St Paul Island	22	1004.7	1005.8	23	13	17.8	-6.7	36	11+	-13	2	0	31	15	77	[illegible]	-.56	.13	13	0	4.8	1						6	5	20	7.6	
Yakutat	28	1007.5	1008.7	36	18	26.8	-4.0	48	27	-13	3	0	30	22	81	6.73	3.16	1.91	13	0	42.9	81	8.3	E	*10	ESE	17	3	5	23	8.1	

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.
- * Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.
- + And also on a later date or dates.
- % Peak gust.
- a Maximum hourly average.
- Ø Station pressures apply to elevations shown in Table 10b of the annual issue of this publication.
- # Number of days maximum 70° or above for Alaskan stations.

Table 3

HEATING DEGREE DAYS

(Base 65°F.)

MARCH 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	354	2681	2622
Mobile	183	1585	1565
Montgomery	274	2164	2057
ARIZONA			
Flagstaff	864	5598	6161
Phoenix (U)	94	1061	1430
Phoenix	131	1264	1624
Prescott	547	3508	3984
Tucson	167	1389	1692
Winslow	564	3735	4215
Yuma	72	940	937
ARKANSAS			
Ft. Smith	407	3246	3037
Little Rock	386	2937	2842
Texarkana	334	2472	2278
CALIFORNIA			
Bakersfield	246	1907	1989
Bishop	514	3733	3725
Blue Canyon	780	4814	4523
Burbank	175	1459	1549
Eureka (U)	540	3829	3543
Fresno	340	2350	2344
Los Angeles (U)	150	1246	1235
Los Angeles	189	1413	1653
Mt. Shasta (R)	750	4985	4833
Oakland	409	2720	2550
Red Bluff	341	2395	2318
Sacramento (U)	297	2166	2314
Sacramento	333	2338	2490
Sandberg (R)	568	3370	3491
San Diego	208	1270	1283
San Francisco (U)	346	2635	2362
San Francisco	405	2721	2666
San Jose	334	2094	1998
Santa Maria	384	2695	2277
COLORADO			
Alamosa	1002	6849	7317
Colorado Springs	838	5291	5317
Denver	764	5024	5256
Grand Junction	695	4647	5226
Pueblo	747	4972	5023
CONNECTICUT			
Bridgeport	922	4961	5048
Hartford	1066	5666	5379
New Haven	959	5212	5146
DELAWARE			
Wilmington	810	4618	4398
DIST. OF COLUMBIA			
Washington (U)	635	3964	3864
Washington	668	4033	3923
FLORIDA			
Apalachicola (U)	163	1269	1274
Daytona Beach	137	947	857
Fort Myers	53	416	405
Jacksonville (U)	130	1100	1099
Jacksonville	155	1246	1220
Key West (U)	2	31	77
Miami (U)	30	214	173
Miami	23	188	178
Miami Beach	6	120	123
Orlando	85	695	650
Pensacola (U)	183	1431	1390
Tallahassee	200	1561	1481
Tampa	76	653	674
West Palm Beach	32	272	248
GEORGIA			
Athens	386	2873	2657
Atlanta	348	2703	2673
Augusta	319	2481	2076
Columbus	318	2342	2299
Macon	269	2155	1987
Rome	417	3142	2952
Savannah	253	1903	1667
IDAHO			
Boise	710	5151	5096
Lewiston	705	5336	4785
Pocatello	900	6046	5962
ILLINOIS			
Cairo (U)	479	3642	3527
Chicago (U)	859	4908	
Chicago	878	5438	5516
Chicago University	882	5370	
Moline	890	5891	5667
Peoria	801	5463	5419
Springfield	730	5159	5086
INDIANA			
Evansville	619	4281	4013
Ft. Wayne	889	5581	5492
Indianapolis	763	5123	4973
South Bend	931	5750	5683
IOWA			
Burlington	822	5731	5463
Des Moines	916	6214	5762
Dubuque	1038	6650	6385
Keokuk (U)	737	5113	
IOWA			
Sioux City	967	6666	6256
KANSAS			
Concordia (U)	718	5249	4816
Dodge City	614	4640	4561
Goodland	805	5470	5534
Topeka (U)	632	4799	4499
Topeka	655	4926	4731
Wichita	602	4455	4183
KENTUCKY			
Lexington	660	4326	4456
Louisville	584	4069	4055
Pikeville (U)	498	3580	
LOUISIANA			
Baton Rouge	180	1494	1547
Lake Charles	157	1305	1503
New Orleans (U)	103	1149	1156
New Orleans	124	1279	1286
Shreveport	267	2078	2056
MAINE			
Caribou	1427	8119	8551
Greenville (U)	1428	7849	
Portland	1213	6643	6477
MARYLAND			
Baltimore(U)	663	3994	3804
Baltimore	749	4445	4289
Frederick	808	4899	4380
MASSACHUSETTS			
Blue Hill Obs.	1077	5964	
Boston	966	5222	4979
Nantucket	931	5026	4927
Pittsfield	1202	6770	6563
MICHIGAN			
Alpena (U)	1226	6701	6739
Detroit	1003	5616	5535
Detroit (Willow Run)	988	5725	5618
East Lansing (U)	1048	5970	
Escanaba (U)	1284	7171	7216
Grand Rapids	1076	6092	6089
Marquette (U)	1227	6950	7074
Muskegon	1091	6038	5981
S. Ste. Marie	1381	7650	7906
MINNESOTA			
Duluth (U)	1360	8410	8086
Duluth	1406	8631	8439
Internat. Falls	1527	9450	9158
Minneapolis	1205	7629	6944
Rochester	1250	7803	7105
St. Cloud	1331	8482	7793
MISSISSIPPI			
Jackson	310	2296	2121
Meridian	285	2312	2239
Vicksburg (U)	260	2049	1929
MISSOURI			
Columbia	647	4693	4638
Kansas City	613	4593	4477
St. Joseph	731	5259	4869
St. Louis (U)	589	4238	4098
St. Louis	615	4437	4290
Springfield	606	4358	4264
MONTANA			
Billings	908	6552	6119
Glasgow	1196	8682	7668
Great Falls	960	7043	6409
Havre (U)	1008	8156	7178
Helena	971	7554	7000
Kalispell	1053	7505	6810
Miles City	925	7505	6889
Missoula	1019	7241	6723
NEBRASKA			
Grand Island	864	6166	5654
Lincoln (U)	797	5662	5284
Norfolk	949	6805	6253
North Platte	855	6296	5755
Omaha	841	5934	5564
Scottsbluff	878	6029	5888
Valentine (U)	980	6915	6161
NEVADA			
Elko	877	6297	6162
Ely	901	6220	6186
Las Vegas	268	2205	2333
Reno	723	5115	5034
Tonopah	712	4726	4946
Winnemucca	813	5481	5413
NEW HAMPSHIRE			
Concord	1218	6616	6554
Mt. Washington Obs.	1773	11034	
NEW JERSEY			
Atlantic City (U)	768	4224	4060
Newark	864	4702	4643
Trenton (U)	832	4640	4495
NEW MEXICO			
Albuquerque	483	3549	4030
NEW MEXICO (Cont'd.)			
Clayton	660	4289	4510
Roswell	384	3208	3211
NEW YORK			
Albany	1145	6318	6069
Binghamton	1180	6622	6459
Buffalo	1062	5856	5815
New York (U)	836	4553	4423
New York	828	4440	4391
Rochester	1118	6113	5905
Schenectady	1074	5933	
Syracuse	1123	6136	5666
NORTH CAROLINA			
Asheville (U)	550	3804	3677
Asheville	574	4058	
Charlotte	430	3003	3004
Greensboro	554	3721	3519
Hatteras (R)	418	2588	2196
Raleigh	506	3402	3126
Wilmington	351	2518	2212
Winston-Salem	530	3527	3440
NORTH DAKOTA			
Bismarck	1281	8849	7905
Devils Lake (U)	1527	9627	8659
Fargo	1406	8945	8148
Grand Forks	1527	9573	
Pembina	1520	9250	
Williston (U)	1194	8619	7907
OHIO			
Akron	946	5668	5381
Cincinnati (U)	625	4108	4110
Cincinnati	719	4669	4631
Cleveland	891	5294	5206
Columbus	786	4937	4960
Dayton	811	5136	4944
Sandusky (U)	903	5295	5088
Toledo	961	5841	5534
Youngstown	956	5712	5344
OKLAHOMA			
Oklahoma City	464	3652	3422
Tulsa	429	3492	3367
OREGON			
Astoria	683	4588	3957
Burns (U)	870	6188	5858
Eugene	636	4249	3961
Meacham	983	6788	6317
Medford	643	4048	3890
Pendleton	660	5110	4570
Portland (U)	589	3941	3527
Portland	639	4373	3901
Roseburg	595	3941	
Salem	647	4252	3826
Sexton Summit (R)	876	5534	4876
PENNSYLVANIA			
Allentown	928	5317	5196
Harrisburg	824	4855	4693
Philadelphia (U)	795	4246	4061
Philadelphia	808	4528	4360
Pittsburgh (U)	759	4628	4496
Pittsburgh	857	5215	5188
Reading (U)	820	4648	4515
Scranton	1033	5825	5300
Williamsport	923	5442	5215
RHODE ISLAND			
Block Island	948	4948	4809
Providence	986	5376	5239
SOUTH CAROLINA			
Charleston (U)	235	1795	1726
Charleston	275	2106	1910
Columbia	333	2545	2352
Florence	325	2496	2424
Greenville	417	3005	2867
Spartanburg	413	3007	2866
SOUTH DAKOTA			
Huron	1187	8152	6985
Pierre	1079	7699	
Rapid City	953	6560	6415
Sioux Falls	1155	7740	6934
TENNESSEE			
Bristol	555	4004	3779
Chattanooga	427	3231	3160
Knoxville	466	3461	3344
Memphis	425	3063	2974
Nashville	479	3465	3284
TEXAS			
Abilene	245	2448	2544
Amarillo	540	3819	3948
Austin	168	1568	1663
Brownsville	52	455	617
Corpus Christi	95	808	1005
Dallas	244	2244	2197
Del Rio	91	1420	1386
El Paso	238	2112	2531
Ft. Worth	260	2294	2266
Galveston (U)	123	1000	1181
Galveston	123	1026	1205
Houston (U)	131	1122	1249
TEXAS (Cont'd.)			
Houston	141	1209	1352
Laredo	42	737	781
Lubbock	413	3250	3350
Midland	263	2378	
Port Arthur	164	1330	1478
San Angelo	223	2143	2045
San Antonio	140	1439	1545
Victoria	128	1084	1112
Waco	214	1978	1959
Wichita Falls	343	2896	2869
UTAH			
Milford	771	5123	5583
Salt Lake City	694	4943	5099
VERMONT			
Burlington	1273	6957	6805
VIRGINIA			
Lynchburg	606	3965	3777
Norfolk	527	3319	3130
Richmond	578	3783	3618
Roanoke	588	3962	3782
WASHINGTON			
Olympia	751	5074	4482
Seattle (U)	669	4292	3689
Seattle-Tacoma	741	4945	4336
Spokane	890	6400	5815
Stampede Pass (R)	1159	8300	7238
Tatoosh Island (R)	725	5081	4432
Walla Walla (U)	612	4914	4301
Yakima	753	6146	5179
WEST VIRGINIA			
Charleston	647	4252	3989
Elkins	799	5244	5019
Huntington (U)	615	4059	3732
Parkersburg (U)	690	4440	4271
WISCONSIN			
Green Bay	1265	7291	7109
La Crosse	1198	7218	6774
Madison (U)	1064	6508	6382
Madison	1076	6607	6484
Milwaukee	1036	6150	6124
WYOMING			
Casper	979	6280	6451
Cheyenne	986	6101	6210
Lander	996	6846	7057
Sheridan	1027	6918	6710
ALASKA			
Anchorage	1403	10395	8964
Annette	899	6624	5607
Barrow	2482	17331	15673
Bethel	1791	11694	10587
Cold Bay	1297	8298	
Cordova	1279	9011	7601
Fairbanks	1830	13629	12336
Juneau	1144	8509	7223
King Salmon	1549		
Kotzebue	2026	13625	12867
McGrath	1842	13606	12261
Nome	1895	12414	11220
Northway	1952	15055	13392
St. Paul	1456	8902	8163
Yakutat	1179	8279	7361

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

MARCH 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IDAHO Teton Basin	First week						4		Wind and snow	Week of almost continuous strong winds and frequent snowfall. Highways into Teton Basin blocked most of time and no trains able to reach Driggs until Mar. 14. Schools closed for several days.
IDAHO Shoshone County	1	1:13 a.m.			1	18	4		Snow and wind	Overhanging ledge of snow apparently loosened by strong winds from southwest. Many tons of snow and ice careened down mountain slope west of village of Mace. 6 houses, 2 other buildings destroyed, and 5 houses, and 3 other buildings damaged. 10-year-old boy killed and 18 other persons buried in houses crushed by avalanche, but prompt rescue work saved lives of the 18. Several automobiles buried and badly damaged and there was considerable damage to powerlines and transformers.
KENTUCKY	1	P.m.				1	4		Wind, rain, hail, and electrical	Most of State hit by high winds, causing damages to residences, business establishments, barns, and utilities. A number of trees and TV antennas toppled.
IDAHO McCammon (north of), Bannock County	1						2		Wind and ice	Second section of double trailer blown off overpass; icy surface also contributing factor.
	1									Minor storm also reported at Libby, Mont.
	2									Minor storms reported in New Jersey; and at Minco and Morrison, Okla.
WASHINGTON Entire State	2-3	P.m. 2d-a.m. 3d					5	1	Wind, rain, snow, and electrical	Wind velocities ranging from 60 to 80 m.p.h.; thunderstorm, snow, and rain occurred as rapidly moving frontal system moved eastward across State. Storm associated with deep low-pressure center over Queen Charlotte Islands. Power and communication lines disrupted over entire State. Several barns wrecked. New warehouse under construction near Pasco damaged. Homes and other buildings over State damaged by falling trees. Ferry service on Puget Sound disrupted. All highway passes in Cascades closed for several hours by slides and heavy snow.
OREGON Entire State	2-3	Late p.m.-early a.m.					5	3	Wind and electrical	High winds, felt in practically every section, reached gusts in excess of 80 m.p.h., at some points and caused hundreds of thousands of dollars damage. While large portion concentrated in Willamette valley, it extended to lesser degree over statewide area. Hundreds of large trees blown down, many in more densely populated, metropolitan districts. These crashed into power and telephone lines, highways, homes, garages, farm buildings, and even automobiles. Along north coast and at scattered inland areas winds accompanied by fairly severe lightning. In Portland, score or more windows blown out including several large store fronts. Double shift of police and emergency firemen kept busy throughout night answering automatic burglar and fire alarms set off by wind-caused shorts. A number of roofs blown off and some older buildings damaged. Insured wind losses in city placed at between $22,000 and $25,000. Town of Silverton blacked out for 3 hours when powerlines downed by falling trees. In Tualatin Valley between 5,000 and 6,000 homes without power for several hours. At Molalla, rodeo grandstand collapsed under force of wind, resulting in $10,000 damage. Large greenhouse demolished at Tillamook and several thousand orchid plants it contained badly damaged. In north coastal area, lightning teamed up with winds to create additional havoc. At Seaside, 2 homes and several power poles struck, blacking out entire beach area from Warrenton to Arch Cape. A number of homes through Willamette Valley struck by falling trees. Some of these suffered several thousand dollars damage. At least 3 cars badly crushed as trees came down on them. Several arterial highways and a number of secondary roads temporarily closed by wind-felled trees and/or power poles. In Umatilla County gusts reached 81 m.p.h., at Pendleton Airport and in Milton-Freewater area at least 2 homes struck by fallen trees, several large farm buildings demolished by wind, chimney of church blown down, and horse killed by flying debris. Similarly, at Ontario roof blown off and several farm buildings wrecked or badly damaged. Power and telephone lines blown down or broken by falling trees at a large number of points in middle and upper Willamette Valley. Much of this same trouble occurred in area from Medford to Klamath Falls. Storm moved eastward.
IDAHO Northern and western sections	3	Early a.m.					4		Wind, snow, and electrical	Power and telephone lines broken, in many cases by toppling trees, at a number of northern Idaho towns and cities. Crews worked all day repairing

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

MARCH 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IDAHO (Cont'd)										damage in vicinity of Lewiston, Orofino, Pierce, and Kamiah. Greenhouse damaged at Lewiston. At Weiser, plate-glass windows blown in and broken in 5 business houses, and telephone lines broken by falling tree limbs.
MONTANA Western portion	3	Forenoon	300-400	*275			4		Wind and electrical	Lightning damage about $800 at Silver City, 15 miles northwest of Helena. Timber blown down at Rexford, Lincoln County.
SOUTH DAKOTA Western portion	3	4-7 p.m.					4		Wind	High winds accompanied cold-front passage. Gusts to 70 m.p.h. at Rapid City at 5:28 p.m. damaged 2 aircraft.
	3									Minor storm also reported in northeastern Florida.
KANSAS Wichita, Sedgwick County	4	Day				3			Wind	2 slamming doors and board blown by wind caused 3 injuries. Gusts from south reach 34 m.p.h.
OREGON Western portion	4-5	10:30 p.m.-10 a.m.	300-400	*80-100			4	1	Snow	Snowfall of over 6 inches at Medford set new March record there and seasonal records exceeded at a number of other points. In Portland, worst of storm came just at morning rush hour. Snow rapidly packed into sheet of ice and jammed traffic prevented even sanding trucks from getting through to alleviate situation. Schools closed in a large number of western districts. Storm struck with such suddenness that between 1,000 and 1,500 cars, including 2 bus loads of high school girls returning to Bend from Portland, trapped for more than 6 hours. On Santiam Pass, cars stacked up in line 6 miles long before slide could be sufficiently cleared to permit one-way convoys. Power and telephone interruptions as lines broke or poles gave way under weight of snow often increased by branches of trees which landed on lines after being broken off by weight of snow. Traffic accidents from slick streets and highways, but snow did not last very long in most sections. Damage apparently not great. Storm moved northeastward.
MICHIGAN Berrien County (southern portion)	5	11 p.m.	25			1	5	1	Hail, wind, rain, and electrical	Storm moved eastward, with most damage in Buchanan and Niles areas. Stones ranged up to 2 inches in diameter and in some places covered ground 2 inches deep. Heavy damage to greenhouses, windows, and neon signs, and there also was damage to roofs, automobiles, and utility lines.
	5									Minor storm also reported at Wagoner, Okla.
INDIANA Goshen and New Paris, Elkhart County	6	2:15 p.m.					3	1	Hail, wind, rain, and electrical	Hailstones, some size of baseballs, punctured wings of 5 airplanes at airport and damaged windshield of another. Hail dented cars at New Paris.
ILLINOIS Lexington, McLean County	6	4:45 p.m.	3	200	0	0	4	1	Tornado, wind, rain, hail, and electrical	Not a severe tornado, although funnel cloud and roaring sound reported by witnesses. Storm moved eastward.
ILLINOIS Buckley (northeast of), Iroquois County	6	5:55 p.m.	8	200-500	0	6	5	1	Tornado, rain, hail, and electric	About 10 farmsteads suffered heavy damage along straight path. Many witnesses reported unusual white appearance of funnel cloud when viewed from south or southeast due to favorable light from setting sun. Large hail and heavier showers fell north of damage path. There appeared to be no wavering or turning of tornado path in 8 miles or more. Storm moved northeastward.
INDIANA Dunnington area, Benton County	6	6:40 p.m.	4	100-400	0	3	5	1	Tornado, wind, rain, hail, and electrical	In Dunnington, recent school addition and 3 houses destroyed. Heavy damage occurred to 3 other houses. 1 mile east of Dunnington, farm buildings destroyed leaving house intact. Storm moved east-northeastward.
MICHIGAN (Lower) Southern and central areas	6	Afternoon and night					5	1	Winds, hail, electrical, and rain	High winds caused heavy damage in southern suburbs of Grand Rapids and also in Reed City area. Heavy hail and lightning also caused some damage in a number of localities. Heavy rains and melting snow resulted in flooding in many areas, but no serious flood damage.
INDIANA Delphi, Carroll County	6	7 p.m.		Few	0	0	4	1	Tornado, wind, rain, hail, and electrical	Henhouse upset and 100 chickens stripped of feathers. Tin sheets carried several miles. Wire fence displaced and several small buildings damaged. Storm moved northeastward.
INDIANA Galveston area, Cass County	6	8 p.m.	2	30	0	3	4	1	Tornado, rain, and hail	Southwest of Galveston, house lifted and carried 30 feet from its foundation. 4 other houses damaged. Path of damage began 3 miles west and 1/2 mile south of Galveston and ended 1 mile west and 1/2 mile south of Galveston. Funnel cloud dipped again in southeastern Galveston to knock out some powerlines and topple trees. Storm moved eastward

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MISSOURI Brewer area, Perry County	6	8:30 p.m.	1	Narrow	0	0	4	1	Tornado, wind, and rain	Nearby windstorm damage about $20,000 added to loss. Rainfall unofficially 4 inches near Brewer. Tornado moved eastward.
INDIANA Marion area, Grant County	6	8:50 p.m.	3 1/2	45	1	31	6	1	Tornado, wind, rain, hail, and electrical	Tornado moving northeastward destroyed 45 homes, caused major damage to 40 homes and minor damage to 350 homes. 1 lumberyard torn up and 2 schools damaged, amounting to $225,000 alone. State police reported tornado moved across open country northeast of Marion to farm which was struck. Hail preceded storm.
INDIANA Portland	6	11 p.m.					4	1	Wind	Outdoor theater screen blown down. Antennas, trees, and utility lines damaged.
INDIANA Windfall area, Tipton County	6	P.m.			0	0	4	1	Tornado, wind, rain, and electrical	Northeast of Windfall, large barn wrecked, killing 50 to 60 pigs.
INDIANA Monticello (near), White County	6	P.m.			0	0	3	1	Tornado	Roofs torn off house, 2 cribs, and chickenhouse which was blown quarter mile away. Some trees uprooted and part of fence torn down.
INDIANA Amboy area, Miami County	6	P.m.			0	0	3	1	Tornado, wind, rain, and electrical	Roofs of several buildings torn off 2 miles southeast of Amboy.
INDIANA Burlington	6	P.m.					3	1	Hail, wind, rain, and electrical	Hailstones size of golf balls broke windows in buildings and greenhouse.
MICHIGAN Holland area, Ottawa County	6	Evening	12		0	0	4	1	Tornado	Storm apparently formed about 6 miles north of Holland and moved about 12 miles east-northeastward through rural area. 5 barns, 1 home, and several smaller structures destroyed or badly damaged, and telephone lines downed. Farmer, whose property was hit, reported seeing tornado funnel.
CALIFORNIA Southern portion	6					1	5	1	Wind, snow, sand, and dust	Cold front caused high northerly winds over southern California, resulting in dust- and sandstorms and considerable damage to trees, powerlines, trailers, and homes. Sandstorm forced closing of Highways 60, 70, and 99 from Banning to Indio and disrupted telephone and teletype services between Los Angeles, Palm Springs, and Blythe when main cable blown down. At Fontana and Kaiser winds reached 57 m.p.h., on 6th and 73 m.p.h., early on 7th. More than 40 trees reported uprooted in Los Angeles, and several streets in Riverside blocked by fallen trees. Snow fell above 4,000 feet closing Highway 99 between Lebec and Castaic from 3:10 to 8:45 a.m., on 6th.
IOWA Northern and western portions	6					1	3	1	Snow, sleet, and wind	Storm moving southeastward slowed or stopped traffic, downed utility lines, and forced schools to close.
	6									Minor storms also reported at Elkhart, Flora, Logansport, and Rolling Prairie, Ind.
CONNECTICUT Western portion	6-7	11 p.m. 6th-10 a.m. 7th					5	1	Rain, hail, snow, and electrical	Lightning-caused fires damaged 1 house in Washington to extent of $55,000 and 2 houses in Newtown to total extent of $10,000. Power and telephones knocked out in Fairfield County. Hailstone broke window and set off burglar alarm in service station at Ansonia.
PENNSYLVANIA Western portion	6-7						5	1	Electrical and rain	Lightning struck lumberyard in Vandergrift, setting it on fire. Damage estimated at $75,000. In same area, barn and several other buildings destroyed by fire which caused an estimated $5,000 damage. In Bedford, home hit by lightning, but no fire resulted. However, much damage to plaster, windows, roof, and siding resulted. At Erie, bolt of lightning caused power failure at local radio station.
INDIANA Salem area, Washington County	7	12:10 a.m.	1	Narrow	0	0	4	1	Tornado, wind, rain, and electrical	1 mile south of Salem, buildings of 4 farms damaged. Concrete blocks carried 50 feet. Storm moved eastward.
MASSACHUSETTS and NEW HAMPSHIRE	7	Early a.m.					4	1	Electrical	First thunderstorm of year rocked eastern Massachusetts and southern New Hampshire area, with deafening thunderclaps. Property damage consisted of lightning-caused fires in homes, hundreds of shattered windows, and powerlines downed. In Medford, Mass., lightning hit gasline, tore 3-foot-deep section of front cement sidewalk, and ripped open water pipe. Another bolt uprooted part of concrete walk, traveled to tree and knocked down large limb.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
OKLAHOMA Winding Stair Mountain, Le Flore County	7	Early a.m.					3	1	Wind and rain	Air Force radio relay station tent and masts destroyed by winds of over 50 m.p.h.
OHIO Wakefield, Pike County	7	3:30 a.m.	3	400	0	0	4	1	Tornado, rain, and electrical	Main destruction to cabin camps on Scioto River and to farm buildings. Schoolhouse roof partially removed, with rain damage inside. Storm moved eastward.
WEST VIRGINIA Camden	7	5:45 a.m.	1	200	0	1	5	1	Tornado	Damage of $250,000 to $500,000 given out by Weston Fire Chief. Estimate of $50,000 reported by Camden Postmaster which, however, covered only buildings probably. Numerous trees and telephone poles blown down. 2 houses destroyed and a large number with some damage.
TENNESSEE Livington (near), Overton County	7	8:30 a.m.	4		0	0	4	1	Tornado (suspected), wind, and rain	Storm moving northeastward over small area 4 miles west of Livingston blew down some barns, damaged farmhouses, and uprooted some trees, then hit small area in northern part of Livingston where property damaged and trees uprooted.
ALABAMA Gorgas and Sayre areas, Walker and Jefferson Counties	7	5:50-7 p.m.					4	1	Hail, wind, and rain	Damage in path from Gorgas area, passing 4 miles west of Sayre. Hailstones 2 to 2-1/2 inches in diameter at Gorgas, becoming smaller in passing Sayre. Storm moved northeastward.
ALABAMA Collinsville, De Kalb County	7	Early evening					4	1	Hail, wind, and rain	Hailstones 1-1/2 to 2 inches in diameter. Damage over area 4 miles long and 1 mile wide.
	7									Minor storms also reported in northern and south-central Kentucky; in Knox County, Tenn.; and at Ravenswood, W. Va.
	7-8									Minor storm reported in New Jersey
GEORGIA Unadilla, Dooly County	8	3:05 a.m.		Narrow	0	0	2	1	Tornado (suspected), rain, and electrical	Funnel cloud observed by 2 men, but apparently did not reach entirely to surface. Roof tops damaged and some trees uprooted and others delimbed. Storm moved northeastward.
NEW ENGLAND	8	All day			1	20		1	Ice and wind	Worst ice storm of winter. Slicked roads and highways caused many skidding accidents. Power failures struck many communities as ice-heavy tree branches fell on power and communications lines. Walking extremely hazardous and schools in 24 towns closed as precautionary measure. In Boston, Mass., elevated trains brought to stop for more than an hour when third rail of lines became ice-coated. At Lincoln Downs Race Track near Providence, R. I., freak gust of wind blew out plate-glass window which crashed 50 feet to ground and injured 14 persons. Single highway fatality due to skidding accident on ice-covered road.
SOUTH CAROLINA Columbia area, Richland County	8	1:30 p.m.				1	1	1	Wind	
FLORIDA Opalocka (near), Dade County	8	1:45 p.m.			0	0			Tornado	Aircraft pilot estimated cloud to be 1,000 feet above ground 20 miles west-southwest of Opalocka.
NORTH CAROLINA Blue Ridge Parkway	8		** 300	25	0	0		3	Tornado (suspected)	Destroyed 4 acres of spruce and balsam timber between mile posts 356 and 359. Damage reported by forest ranger--no one present to see storm when it struck.
	8									Minor storm also reported at Eatonton, Ga.
MAINE Central and northern portions	8-9	A.m. 8th-a.m. 9th						1	Snow and wind	Heaviest snowstorm of season in area brought up to 20 inches in Piscataquis County and more than 10 inches elsewhere. Highway crews working without letup kept main highways and some secondary roads open to traffic. Parked automobiles hampered in town snow clearance. Airline operations cancelled until morning of 9th. Railroad and bus schedules generally maintained.
ILLINOIS Extreme northeastern portion	10	11 p.m.					4	1	Wind and rain	Deepening low moved from Madison, Wis., eastward across Lake Michigan. From about 11 p.m., to 2 a.m., following cold frontal passage, northwest winds 50 to 60 m.p.h., caused scattered damage in northeast including Chicago area.
WISCONSIN Monroe and Jackson Counties	10	Late p.m.			3	2			Snow and wind	2 persons killed and 2 injured in aircraft crash at Sparta from blizzard. 1 died from exposure at Merrillan.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

MARCH 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IOWA Northern portion	10				1	2	3	1	Snow and wind	Impaired travel; 1 man died of exposures when car stalled in drift; another received frozen arms and legs.
MINNESOTA Southern third	10					Many	3	1	Snow	Near-blizzard conditions with new snowfall 4 to 12 inches. Traffic halted in many localities on 10th and 11th, postponing church services on 11th. Many traffic accidents. Small aircraft made forced landing near Stillwater on highway. Storm moved eastward.
SOUTH DAKOTA	10				2				Blizzard and wind	Snow began falling on evening of 9th, with 1 to 2 feet falling in band across southeast. High winds drifted snow. Farm wife died of exposure near Mission after leaving stranded car to walk for help. Near Burke, rancher died while caring for livestock. Transportation halted for about a day.
MICHIGAN	10-11	6 p.m. 10th-11th				1	6	1	Wind, snow, and electrical	High winds reported throughout State, with gusts as high as 80 m.p.h., in southern Lower Michigan where most property damage occurred. Winds damaged roofs, trees, TV antennas, broke many store windows, and downed utility lines. Blizzard conditions occurred in northern Lower Michigan and in southern and eastern portions of Upper Peninsula, with high winds and heavy snow. Snowdrifts 6 to 8 feet high reported in many parts of north. Hundreds of motorists stranded in snow area and many northern localities isolated for 1 to 2 days. Unusual feature was occurrence of thunderstorms during snowstorm at many northern localities. Storm moved northeastward.
NEW YORK Cayuga Lake	11						4	1	Wind	Strong south wind drove broken ice on shore, damaging installations and boats as well as flooding cottages.
	11									Minor storm also reported in northern Vermont.
CALIFORNIA Southern portion	12				1		5	1	Wind, sand, and dust	Winds reached 87 m.p.h., at Fontana and Kaiser on 12th. 2 house trailers and cars blown off Highways 60 and 70 between Blythe and Indio, killing 1 driver. Probably greatest wind damage occurred before dawn on 12th in Verdugo Valley-Tujunga area where winds with gusts estimated above 80 m.p.h., destroyed 2 residences and contributed to burning of 3 others (in Tujunga's Manzanita Slopes development) and about 80 acres of brush. High winds made fire fighting extremely difficult. Roofs of several buildings damaged severely and widespread minor damage.
WEST VIRGINIA Spencer	13	2 p.m.						1	Hail	Hail as large as golf balls did considerable damage, breaking 22 windows in elementary school and damaging a large number of roofs.
	13									Minor storm also reported at Oak Ridge and Bastrop, La.
	14									Minor storm reported in Spencer, W. Va.
LOUISIANA New Orleans, Orleans Parish	15	9 p.m.					4	1	Wind, rain, and electrical	High winds on Lake Pontchartrain during thunderstorm broke 4 barges loose from tug; in preventing hitting 24-mile long bridge, tug and barge sunk; all seamen rescued.
ALABAMA Geneva and Houston Counties	16	5:30-6 a.m.	20	Narrow	0	0	4	1	Tornado (suspected) and wind	Damage seemed to be in skipping path from Oak Grove community in Geneva County to 3 miles west of Ashford, Houston County. Storm moved east-northeastward.
GEORGIA Leslie (near), Sumter County	16	8:30 a.m.	Short	200	0	0	3	1	Tornado and rain	Struck 1 farm house, demolishing outbuildings and damaging residence. Many trees uprooted.
GEORGIA Southern portion	16	A.m.					3	1	Wind, rain, and electrical	Strong winds swept across southern part of State before noon, causing widespread but relatively minor damage. Specific damage reported from Early, Mitchell, Colquit, Tift, Berrien, Coffee, Jeff Davis, and Appling Counties. Tifton, with winds up to 65 m.p.h., was one of hardest hit places. Many trees uprooted and powerlines downed. Some damage also suffered by roofs and plate-glass windows. Strong winds also felt in Damascus, Moultrie, Hazlehurst, Douglas, Nashville, and Camilla. Storm moved east-northeastward.
GEORGIA Northern and central portions	16	A.m.					3	1	Wind and rain	High winds following rainfall amounts in excess of 3 inches caused damge in Atlanta, Gainesville, and Augusta areas. Carrollton and parts of Atlanta flooded for short time.
SOUTH CAROLINA Southern and eastern portions	16	A.m.					4	1	Wind, rain, hail, and electrical	Passage of Gulf low and a squall line caused considerable minor wind damage. At Sumter, Sumter County, small hanger blew down, damage $1,000; Cooper Store area, Berkley County, wind damage to home, estimated $300; Yemassee, Hamton County, wind damage estimated $500; Charleston and Sullivans Island areas, Charleston County, wind

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
SOUTH CAROLINA (Cont'd)										damage, estimated $300; Beaufort, Beaufort County, wind damage, estimated $100; Walterboro area, Colleton County, wind damage, estimated $100; Bishopville area, Lee County, wind damage, estimated $20,000.
NEW JERSEY Entire State	16	All day			Many	Many			Wind, snow, sleet, electrical, and rain	Thunderstorms reported in northern half of State in p.m. Some lightning damage. Greatest damage due to wind and weight of snow on poles, wires, and buildings. Also, there were innumerable injuries and deaths due to traffic accidents. Winds reached 50 to 55 m.p.h., in exposed places and coastal areas. Lightning in northern regions caused some damage. Storm moved northeastward.
NORTH CAROLINA Onslow County	16					1	3		Winds	Trailer, truck, and boat damaged; truck driver injured, when wind caused accident.
	16									Minor storm also reported in Tallahassee and Jacksonville, Fla.
CONNECTICUT and RHODE ISLAND	16-17	A.m. 16th-a.m. 17th			18	10		1	Snow and wind	13 ships including destroyers driven aground or torn from moorings off Newport, R.I.; 4 sailors died from exposure in open boat in Narragansett Bay. Roof ripped off laundry in New Haven. Winds up to 60 to 70 m.p.h., and 6 to 15 inches of snow over 2 states. Many traffic accidents, road tieups, and abandoned vehicles in both states. Deaths resulted from exposure, overexertion, and traffic accidents.
NEW ENGLAND Central and northern portions	16-17	Late a.m. 16th-early a.m. 17th			30	Many		1	Snow and wind	Heaviest snowstorm of winter to-date stopped 4-state area in its tracks. Badly drifted new snow cover ranged up to 19 inches on level with drifts to 5 feet or more. Thousands of commuters stranded and huge number of cars abandoned on roads, streets, and highways. Public transportation very seriously affected. Thousands of storm victims sheltered in private homes and public buildings. Storm's early peak came during evening (16th), rush-hour traffic causing snarls along all arteries. In many cases workers dismissed early so that most city dwellers were safely at home before cumulative effect of snow and wind reached maximum in early hours of 17th. Snowfall ended generally around sunrise (17th). Deaths due mostly to exposure, exhaustion, and traffic accidents.
PENNSYLVANIA Entire State	16-18				12		3	1	Snow, wind, and electrical	Up to 19 inches of snow blanketed State, closing schools and crippling transportation facilities. High winds drifted snow 4 to 5 feet deep in some areas. Slippery roads caused numerous automobile accidents. Many other accidents by falls on slippery sidewalks. Most property damage caused by accompanying thunderstorm. This was heaviest in Reading area where thunder broke many windows, while lightning knocked out numerous power transformers and electric lines. 2 radio and TV stations in area were off the air several hours, because of technical trouble caused by lightning. Storm moved eastward.
VIRGINIA	18	Afternoon			4	2			Wind and snow	5-inch snowfall in Fauquier County made driving hazardous and resulted in deaths of 4 persons in auto collision near Warrenton. Winds caused 4 ships to burst their moorings and another to run aground in Hampton Roads area. Winds toppled 2 rifle range observation towers at Fort Lee, injuring 2 members of National Guard. Storm moved eastward.
NORTH CAROLINA Wake and Durham Counties	18	3:30 p.m.	1/4	100	0	0	3		Tornado	Tobacco barn and timber destroyed about 2 miles northwest of Raleigh-Durham Airport. Tornado moved northeastward.
NORTH CAROLINA Garner, Wake County	18	3:30 p.m.	1/4	50	0	1	4		Tornado	Several low-cost dwellings destroyed or damaged and barn destroyed. Tornado moved northeastward.
NORTH CAROLINA Louisburg (north of), Franklin County	18	3:45 p.m.	1/2	100	0	0	4		Tornado	Home damaged and 8 outbuildings destroyed. Tornado moved northeastward.
NORTH CAROLINA Grifton, Pitt County	18	4:30 p.m.	1	40	0	0	3		Tornado	Funnel seen. Tobacco barn demolished, packing house unroofed. Tornado moved southeastward.
NORTH CAROLINA Smiths Chapel, Wayne County	18	4:30 p.m.	1	30	0	0	3		Tornado	3 barns destroyed and roofs damaged.
NORTH CAROLINA Swanquarter, Hyde County	18	6 p.m.	1	150	0	1	3		Tornado	Funnel seen. Destroyed 1 home, damaged several outbuildings, and blew down trees. Tornado moved northeastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NORTH CAROLINA Weeksville, Pasquotank County	18					2	4		Wind	Navy blimp and mooring mast blown over and damaged.
	18									Minor storm also reported in Halifax County, N.C.
NEW JERSEY Entire State	18-19				Many	Many		1	Snow, wind, and sleet	Greatest snowfall in many years, with amounts up to 18.2 inches in Newark. Schools closed and business at virtual standstill for several days. Many injuries and some deaths as result of traffic accidents. Wires and poles down as well as some trees with weight of snow. Winds reached 40 to 48 m.p.h., in gusts in exposed areas, drifting snow over 6 feet. Storm moved eastward.
NEW YORK Southwestern portion	18-19				20			1	Wind and snow	Snow depths up to 16 inches with drifts about 12 feet caused near paralysis of human activity. Deaths caused by overexertion and heart failure.
CONNECTICUT and RHODE ISLAND	19	All day			5	10	1	1	Snow and wind	Snowfalls 12 to 18 inches on top of heavy snowfalls of 16th. Winds up to 40 m.p.h. Most highways blocked and highway equipment severely taxed. Schools, offices, and stores closed on 19th. Second heaviest snowfall of record at Providence with bad drifting throughout 2-state area. Rail, air, and bus lines halted or badly delayed. Worst general snowstorm in 10 years.
WEST VIRGINIA Most of State	19								Snow	Snowstorm leaving from 1 to 10 inches of snow made highways slippery and dangerous in spots.
NEW ENGLAND	19-20	A.m. 19th-a.m. 20th			4	Many	6	1	Snow and wind	Heaviest snowstorm of season, exceeding that of 16 and 17th. Conditions further aggravated by heavy snow cover remaining from earlier storm, but overall effect somewhat lessened by recent snowstorm experience. Most cars left at home so that plows in and around cities were less hampered by abandoned vehicles. Main roads and highways kept open, but most secondary streets impassible, and remained that way for days. Public transportation once again seriously affected and thousands of city workers from suburban areas unable to get home. These spent night at emergency shelters and were aided by Red Cross, Salvation Army, and the police. Greatest part of loss was accounted for by cost of snow removal. In Boston alone, more than $500,000 was spent under this item. Reduction in number of deaths in this storm (compared with that of 16 and 17th) resulted from experience gained and from advice issued by public agencies.
KANSAS Western half	20	9 a.m.-8:30 p.m.							Wind and dust	Widespread duststorm with visibility reduced to less than 5 miles over western half of State. Most severe area was in Goodland-Garden City area. At Goodland visibility below 2 miles lasted from 9 a.m., to 2:30 p.m., and was down to 1/4 mile when storm began at 9 a.m. At Garden City 2-mile visibility recorded from 10 a.m., through 6:30 p.m. Highest winds at Goodland 20 to 25 m.p.h., with gusts to 32 m.p.h. Speeds in Garden City and Dodge City area reached 34 to 40 m.p.h., with gusts of 48 to 52 m.p.h. Comparable winds and restricted visibilities of less than 2 miles reported for less time in central part of State. Worst of storm was over by sundown. Wind from south.
TEXAS Jim Wells and Live Oak Counties	21	3 p.m.			0	0			Tornado, wind, rain, and hail	Tornado moving northeastward reported to hit ground 20 miles south of Alice, but no damage. Funnel sighted north of George West did not touch ground. 2 DC-4's in severe turbulence at Rockport turned back and landed at Corpus Christi.
TEXAS Cameron (5 miles north of), Milam County	21	3 p.m.			0	0	1	1	Tornado and wind	2 highway patrol units reported seeing funnel moving northeastward on U. S. Highway 80 between Rosebud and Cameron.
TEXAS Gatesville (10 miles southeast of), Coryell County	21	3 p.m.	3/4	30	0	0	3	2	Tornado, wind, rain, and hail	Associated with other tornadoes, hail, and heavy rains in advance of cold front. Destroyed 4-room house and turned car over. Storm moved northeastward.
TEXAS Rio Hondo area, Willacy and Cameron Counties	21	3 p.m.	30				4	5	Hail, wind, and rain	Hail, marble to baseball size, with 5-inch rain over 30-square mile area battered citrus trees. Hail drifted 12 inches deep. Broke 300 windows in high school. Storm moved northeastward.
TEXAS Willow Grove, Bell County	21	3:25 p.m.	15	50	0	0	3	1	Tornado, wind, and dust	Tornado moving northeastward demolished pumphouse; dipped and rose back into clouds; roaring sound heard .

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TEXAS Temple (10 miles northwest of), Bell County	21	3:25 p.m.	10	50	0	0	1	1	Tornado and wind	Airline pilot spotted cloud kicking up dust, but touching ground only slightly; moved eastward.
TEXAS Oenaville (3 miles east of), Bell County	21	4:10 p.m.			0	0	3	1	Tornado (suspected), rain, and hail	Hailstorm followed in wake of "terrible roaring" and accompanied by heavy showers. Hail size of golf balls. Hail size of dime at Oenaville.
	21									Minor storm also reported in Pauls Valley, Okla.
FLORIDA Jacksonville (5 miles north of), Duval County	22	12:30 p.m.			0	0		1	Whirlwind	Small home partially unroofed.
CONNECTICUT and RHODE ISLAND	24	2 a.m.-5p.m.			1	1	1	1	Snow and wind	Death resulted from traffic accident on slippery roads. Snowfalls generally 4 to 8 inches and winds up to 40 m.p.h. Snowfall heaviest in northern Connecticut. Numerous traffic accidents, but no property damage of any consquence.
NEW ENGLAND	24	Early a.m. - evening			1		5	1	Snow and wind	This was third major snowstorm in 9 days for most of area. Total of from 5 to 12 inches was dumped by this latest storm. Its consequences were far less severe than those of its predecessors because of lesser falls and fact that emergency snow-clearance crews, on job cleaning up damages of earlier snowfalls, met new storm head-on. Single fatality due to overexertion. Once again, major portion of damage losses incurred by snow-removal expenses.
	24									Minor storm also reported in Colleton and Orangeburg Counties, S. C.
NORTH DAKOTA Eastern and northern portions	26-28								Wind, snow, and electrical	Worst snowstorm of winter, with blizzard conditions. Devils Lake had 16 inches of new snow and other stations in east had equal amounts. This heavy snow was accompanied by winds up to 40 m.p.h. Highways snow blocked and some farmers in northeast isolated and could not even get to their livestock. Many stations in northwest and southeast reported thunder and lightning before snowstorm. Verona, La Moure County, reported severe electrical storm during snowstorm.
KANSAS Most of State	27	4:30 a.m.- 8:30 p.m.							Wind and dust	Restricted visibilities of 5 miles or less occurred at all reporting stations, except Chanute and Emporia. At Goodland, visibility of 2 miles or less occurred from 5 a.m., through 6:30 a.m., and after an hour or so of slight relief again lowered and was zero from 10:30 a.m., to 6:30 p.m. Other stations from Salina and Wichita westward reported visibilities of less than 2 miles for several hours. Storm generally most dense about midday. Quite generally, sustained wind speeds of 40 to 50 m.p.h., reported for 3 to 5 hours and gusts reached 50 to 65 m.p.h., over most of western half. Wind directions mostly from west-northwest to north.
OKLAHOMA Wagoner, Wagoner County	27	4:02 p.m.					3	1	Hail, rain, and electrical	Thunderstorms developed in cold front over eastern Oklahoma. Hail 1-1/2 inches in diameter fell during thunderstorm over Wagoner.
OKLAHOMA Latimer and Le Flore Counties	27	7:20 p.m.	1	500	0	0	5	1	Tornado, rain, and hail	Severe thunderstorms developed in a cold front over eastern Oklahoma, causing hail at Wilburton, Latimer County, and tornado at Talihina, Le Flore County. Hailstones as large as chickens' eggs fell over 40-square mile area causing widespread damage to roofs. After rain and hail, there was a brief lull and then tornado sounding like "roar of freight train" moved into southeastern Talihina, causing 6 houses to be swiveled on their foundations and damaged; roofs caved in; windows shattered; trees uprooted; TV antennas blown down; and extensive damage to outbuildings. Funnel then skipped over main part of town and destroyed home and numerous outbuildings east of town. 2 persons reported seeing funnel move in from southwest.
OKLAHOMA Broken Bow and Idabel, McCurtain County	27	9 p.m.					4		Hail	Severe hailstorm hit large area of McCurtain County, centering its greatest destruction near Broken Bow. Hailstones as large as baseballs caused extensive damage to roofs, windows, signs, awnings, and automobiles in Broken Bow. Small hail covered ground in Idabel, but no damage reported. Storm moved southeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IOWA	27					4	4	1	Wind, electrical, glaze, and hail	Downed utility lines, damaged buildings, and wrecked car and house trailer.
SOUTH DAKOTA Extreme western portion	27						4		Wind and dust	Soil erosion damaged winter wheat.
	27									Minor storm also reported at Conway, Ark.
COLORADO Eastern portion	27-28	Early a.m. 27th-sundown 28th					3		Wind	Cold front passed shortly after midnight on 27th, causing high, gusty wind. Area affected was from Wyoming to Texas. On eastern plains of Colorado, wind wrought damage to 1-1/2 million acres by blowing away topsoil and damaging winter crops. Visibility reduced by blowing dust and dust in the air. Dust aloft reported at 20,000 feet by pilots over southeastern Colorado. State Agricultural Officials said "big blow" was increasing eastern Colorado winter-wheat losses by millions of dollars. Gusts of 80 m.p.h., logged at Rocky Flats and 55 m.p.h., at Pueblo. Roads closed east of Limon where dust clouds cut visibility to near zero. Schools at Vona, Bennett, Stratton, and Arriba closed due to gusty winds and low visibility. Property losses confined to signs, utility poles, buildings, cars, etc. Storm moved southeastward.
MINNESOTA Eastern and northern portions	27-28	P.m. 27th-p.m. 28th			1	6	5	1	Wind, snow, rain, and electrical	At Austin at 10 p.m., on 27th, strong wind estimated at 60 to 70 m.p.h., lifted 5-ton roof off airport hanger blowing it onto motel 500 feet away. Damage reported at $100,000; 5 injured. Strong winds snapped ice-covered telephone poles and lines in southeastern Minnesota during morning of 28th, doing $30,000 damage. As storm cell proceeded northward heavy snow, 4 to 14 inches, fell in north with heaviest fall at Arrowhead. On 28th and 29th, many schools and business concerns closed as storm approached and passed on. 1 man killed near Evansville as he tried to flag down truck in snowstorm.
SOUTH DAKOTA	27-28				2	1			Snow and glaze	Many highway accidents, due to low visibility and icy roads. 2 persons died in car collisions, and bus skidded from highway with no injuries. 2 persons marooned on Highway 34 for a day, with no ill effects. Farmhand frozen near De Smet, but recovered.
WISCONSIN Southern portion	27-28								Wind, snow, freezing rain, and electrical	Communication and powerlines downed from ice and wind. Schools closed, roads closed, some trees blown down, and TV antennas damaged. Storm occurred in Waushara, Clark, Sauk, Crawford, Waukesha, Vernon, Richland, Dodge, Fond du Lac, Washington, and adjacent counties.
MICHIGAN	28	Morning					5	1	Freezing rain and wind	Freezing rain covered Lower Michigan (except extreme north) and south-central Upper Michigan. Damage mostly to utility lines and trees, and was heaviest in western Lower Michigan, especially in Lake Michigan area where ice accumulated to 1/2-inch or more thickness. Winds up to 40 m.p.h., combined with heavy ice coating to snap wires, and to bring down utility poles and trees. Transportation was hampered throughout the affected area.
KANSAS Entire State	28	8 a.m.-7:30 p.m.							Wind and dust	All hourly reporting stations in Kansas reported visibility of less than 5 miles part of day. This was second successive day with duststorm over Kansas, but it was not quite as severe as that of 27th, especially in southwest. Storm began about 8 a.m., in northwest with visibility down to 3 miles. Garden City and Dodge City did not report visibility below 5 miles until near noon and in that area this condition lasted only a few hours. Northern part of State reported most severe conditions on 28th, with visibility below 2 miles most of afternoon, especially in Goodland-Salina area. West to north winds rose to sustained speeds of 30 to 35 m.p.h., for 1 to 4 hours and gusts reached 45 to 55 m.p.h. Minor local damage to buildings, roofs, and transmission lines reported.
	28									Minor storms also reported in Ramer-Dublin area, Ala.; in Elbert County, Ga.; in Bracken County, Ky.; and near Liberty and in Abbeville County, S.C.
	28-29									Minor storm reported at La Grange, Ga.
IDAHO Emmett (near), Gem County	29	5:15 p.m.					3		Wind	Gusts of unusual velocity toppled farm shed 24 x 28 feet. Damage to contents, including hay baler, moderate.
NEW ENGLAND	29-30	P.m. 29th-p.m. 30th				16	4	1	Snow	Fourth major snowstorm within 2 weeks, an unprecedented frequency. This was least severe of

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEW ENGLAND (Cont'd)										the four, with losses mostly due to snow removal costs. New snow depths of 3 to 7 inches over area. Injuries caused in a number of traffic accidents.

* Miles instead of yards.
** Yards instead of miles.

† This is a new form of presentation of storm damage estimates. The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total, storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

MARCH 1956

Major flooding occurred in the upper Allegheny River Basin during March. This flood was the second highest of known records and practically isolated Warren, Pa. The flooding at Salamanca, N. Y., was the worst in the city's history. In the Genesee Valley at Scio, N. Y., the flooding was the 3d highest in a period of 39 years. Record stages were reached in western New York on Cazenovia Creek, Cayuga Creek, and Little Tonawanda Creek in the Buffalo, N. Y., area.

ST LAWRENCE DRAINAGE

Lake Michigan.--An ice jam below the gage caused the Red Cedar River to go above flood stage at Williamston, Mich., on the 2d and 3d. Light rains and snow melt helped to raise the level of the streams and set the stage for more general flooding with the onset of moderate to heavy rains on the 6th and 7th, which totalled more than an inch at a number of points in the Grand and Saginaw Basins. There was considerable frost in the ground which resulted in a high percentage of runoff. The heaviest damage occurred in the suburbs, north of Grand Rapids, Mich., where several dwellings were flooded. There was also some damage to roads and highways and loss of some movable equipment.

Lake Erie.--The flooding in the Lake Erie drainage on the St. Joseph and Maumee Rivers between the 5th and 10th was due to moderate to heavy rain on the 6th and 7th. Damages were minor. In western New York, record stages were reached on Cazenovia Creek at Ebenezer, N. Y., Cayuga Creek near Lancaster, N. Y., and on Little Tonawanda Creek at Linden, N. Y.

Lake Ontario.--The flooding in the upper Genesee Valley between the 6th and 9th was the 3d highest at Scio, N. Y., in its 39-year history. The Sinclair Refining Co. at Wellsville, N. Y., reported that the water within the plant reached the highest level ever experienced. This near record stage was due to rainfall averaging 0.75 inch on saturated soil with streams near bankful stage when the rain began. The floods of March 7 to 10 in Honeoye, Black, and Oatka Creeks were second in magnitude to the flood of March 1950 for the period of record since 1945. The Oatka Creek Basin was the most seriously affected since it extended well into the area of heavy precipitation and had a heavy snow cover when the rains began. Several basements were flooded in the Wellsville and Dansville, N. Y., area. Rich farmland was heavily damaged and some nursery stock lost in the Dansville area.

ATLANTIC SLOPE DRAINAGE

Small streams south of the Mohawk and Hoosic Valleys in New York rose to bankful stage during the period March 7-8 from moderate to heavy rains (around 2 inches in central and southern sections of basins). Schoharie Creek reached bankful stage with minor lowland flooding. The Mohawk River rose about 4 to 6 feet above normal winter levels. Much of the ice broke up and went out of most small streams south of Mohawk Valley.

Local flooding occurred on the upper Delaware River in New York on the 9th and on Perkiomen and Brandywine Creeks in Pennsylvania on the 14th. This flooding was due to heavy precipitation from the 7th to the 9th and from the 13th to the 15th.

Moderate to heavy rains during the period from the 6th to the 8th caused considerable flooding in the Susquehanna River Basin between the 6th and 10th. Moderate temperatures also prevailed during the period to produce considerable snow melt in the northern and western headwater areas to significantly supplement the rainfall runoff. Only a small amount of damage resulted from the local overflows along the Tioga River on the 6th. Damage was also minor along the Chemung and Susquehanna Rivers between the 6th and 8th since most heavily populated areas are protected by flood walls.

The flooding in eastern North Carolina was due to heavy rain that accompanied the storm that moved northeastward through the state on the 15th and 16th. Rainfall averaged slightly over 2 inches over the Tar, Neuse, and Cape Fear River Basins during that period.

Minor flooding occurred on the Pee Dee and Cheraw Rivers in South Carolina from the heavy rain (1 to 2.5 inches) on the 16th-17th. This was the first flood on the Pee Dee River since April 1955. No damage was reported.

The flooding in the Broad, Saluda, and Santee Basins in South Carolina during the last half of March was due to heavy rains on the 15th and 16th. Rainfall previous to this flooding averaged less than an inch during the first part of March. Damage was light.

Light flooding occurred on the Ogeechee River between the 21st and 26th from the heavy rain (3 inches) during the period from the 11th to the 17th. No damage resulted.

EAST GULF OF MEXICO DRAINAGE

The Apalachicola River rose to a stage of 20.4 ft., 5.4 ft. above flood stage at Blountstown, Fla., during the latter half of the month. This was the highest stage reached at this point since December 1953. There was considerable flooding in the Atlanta area where the Peachtree and Nancy Creeks overflowed some areas near the Chattahoochee River. This flooding was caused by very heavy rainfall as well as by backwater from the Chattahoochee River which was running at a high level. Numerous yards and streets were inundated to depths ranging from a few inches to 3 feet or more. Numerous basements were flooded, and water rose as high as first floor levels in some dwellings. No material damage resulted in the Apalachicola River lowlands where the chief industry is logging operations, and these were benefited by the high water in accommodating the floating of millions of board feet of logs from places at some distance from the main river channel. Sand and gravel dredging operations had to be suspended, but losses from suspended operations as to income, movement of property, etc., were not great.

The flooding on the Cahaba and lower Alabama Rivers in Alabama was due to exceptionally heavy rainfall during the period from the 14th to the 16th. No damage was reported.

Light flooding occurred on the Warrior River and moderate flooding on the middle and lower reaches of the Tombigbee River near the middle of March. This flooding was due to moderate to heavy rainfall during the period from the 13th to the 16th.

Extensive flooding occurred on the Pearl, Upper Leaf, and the Chickasawhay Rivers in Mississippi and along the Mississippi - Louisiana border on the lower Pearl River from March 15 through the end of the month. Flooding was most severe in the upper reach of the Chickasawhay from above Enterprise to below Shubuta, Miss. A small boy lost his life in a flooded tributary after he lost control of the bicycle he was riding and fell into the stream. Some livestock and equipment was lost in the Enterprise area.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--The snow cover over the northern half of Minnesota kept decreasing through February and remained about the same through March. It was 6 to 10 inches shallower than reported on January 31 except at Duluth where it was 2 inches deeper. A comparison of snow depths on March 31 with that of other years is given in the following table.

Comparative Snow Depths
(inches)

Cities	Year 1956	Year 1955	Year 1952
Bimidji	20	8	5
International Falls	17	15	2
Duluth	31	13	23
Alexandria	8	T	10
New Ulm	T	0	0
Minneapolis	4	0	T
Rochester	2	0	T

There was little or no runoff on the Minnesota River Drainage. The highest stage reached on the Minnesota River at Mankato, Minn., was 5.8 ft. on the 30th, compared to 9.4 ft. on March 15, 1955, and 10.3 ft. on March 25, 1954.

Ice was unusually heavy on the upper Mississippi River this year. It did not begin to break up at La Crosse, Wis., until the 27th. Navigation was attempted by the diesel oil barges, the Winchester and the W. S. Reah, on the 24th, which managed to get up to the loading dock at La Crosse. Ice on Lake Pepin the middle of March was reported as 36 inches thick in places, with an average thickness of over 30 inches.

The only flooding during the month occurred on the Turkey River at Garber, Iowa, and on the Pecatonica River in Wisconsin. No damages were reported because of the early date of the season since only rural crop-land was inundated.

MISSOURI BASIN

There was some flooding on Camp Creek, Godfre Creek, and Moreland Creek in the Gallatin River drainage at Anceny, Amsterdam, and Manhattan in Gallatin County in Montana, on the 22d and 23d due to snow melt. Six county bridges and a railroad bridge were damaged by the high water. Two business firms and several houses and basements in Amsterdam were flooded and surrounded by water.

A great number of ice jams developed along the Yellowstone River and its tributaries during the month which resulted in some minor flooding of agricultural lands near the Yellowstone River between Billings and Miles City, Mont. Agricultural land near Forsyth, Mont., was flooded for a short time but the water receded almost as fast as it rose. No property damage was reported.

Ice in tributaries of the Missouri River in North Dakota began breaking up after the middle of March. Ice jams were reported near the mouth of the Knife and Heart Rivers on the 20th which resulted in local flood conditions. Highway No. 10 between Bismarck and Mandan was closed for 4 days. Bottom land east of Mandan was inundated resulting in the closing of several business places. The closing was more of a nuisance, and very little damage was reported. The main channel ice on the Missouri River began breaking up at Sioux City on March 16 and was complete as far as Yankton, S. Dak., by the 22d. The ice broke up at Chamberlain, Pierre, and Mobridge, S. Dak., on the 26th, but no jamming of any consequence was reported. At the end of the month, the breakup was nearing Bismarck, N. Dak.

Ohio Basin.--Heavy rainfall during the period from the 5th-8th augmented by melting snow in New York and northern Pennsylvania caused major flooding in the upper Allegheny and lesser flooding on the lower river and along the Ohio River below Pittsburgh, Pa. The hardest hit in the Allegheny River Basin were Warren, Pa., Salamanca, N. Y., Oil City, Pa., and Meadville, Pa. Water up to 4 feet flowed through parts of the business district of Warren, Pa., a community of 15,000 people, as the main Allegheny River and Conewango Creek overflowed their banks. The entire west and south side sections of Warren were flooded with first floors of many residences and business establishments flooded. This flood, the second highest of known records, practically isolated Warren with all main highways flooded and impassable. More than 500 families were evacuated from flooded areas. The water entered the Warren General Hospital along the left bank of the river and about 70 patients were evacuated. In Salamanca, N. Y., the floodwaters exceeded the flood mark recorded in the disastrous July 1942 flood. The city was practically divided with high water coming within inches of overlapping the main hignway bridge in Salamanca connecting the north and south sections of the city. Local officials indicated that this flood was the worst in the city's history. Several miles upstream and downstream from Olean, N. Y., secondary roads and some residences were flooded.

Slight flooding occurred on the Little Kanawha River in West Virginia on the night of the 14th-15th. Damage was minor.

Moderate showers over the Scioto and Sandusky drainage areas in Ohio on the 6th caused light flooding in those drainage areas between the 7th and 11th. Highway traffic had to be rerouted near Prospect, Ohio. Otherwise, no damage developed in connection with flooding of dormant farmlands.

Minor flooding occurred during the month on the upper Kentucky River on the 14th and 15th from the heavy rain (1.5 to 2 inches) on the 14th.

The high water on the Green River in Kentucky did not result in any major damage, except for some damage to rural roads, fills, and a few levees. Construction work was suspended on Locks 1 & 2 on the Green River during most of the month. The lower Green was in flood from February 3 to March 27. The Wabash and White Rivers in Indiana were 1 to 4 ft. above flood stage in the beginning of the month and about 8 feet above flood stage at Edwardsport. In the headwater areas rivers had already crested, but streams were still rising at most points downstream. This rise was due to moderately heavy rains on February 23 to 25. A number of secondary roads were closed for several days, necessitating the rerouting of traffic.

The overflow on the Cumberland River at Williamsburg, Ky., on the 15th was due to heavy rain (2.07 inches) on the 13th-14th. No damage occurred except for the inconvenience due to the flooding of rural roads and low-lying fields.

South Chickamauga Creek near Chattanooga, Tenn., exceeded flood stage slightly from March 14 to 17 due to moderate to heavy rains on the 14th and 15th. The Tennessee River exceeded flood stage at Whitesburg, Ala., on the 18th. No damages resulted from these floods.

The main stem of the Ohio was in flood at and below Dam 47, Newburgh, Ind., in the beginning of the month. This high water was prolonged by the heavy showers during the last few days of February. Additional heavy rain on March 7 and 8 and from the 14th to the 19th produced another rise to above flood stage along the entire course of the Ohio. Flood stage was exceeded by as much as 14 ft. at Dam 50, Fords Ferry, Ky. Damage from the second period of flooding was minimized since river homes that had been evacuated in February had not been reoccupied and some of the damaged bridges, roads, etc., had not been repaired.

White Basin.--The Lower White River continued above flood stage at Clarendon, Ark., from the beginning of the month through the 7th, and at St. Charles, Ark., from the beginning of the month through the 10th. No damage resulted from this flooding, except for a delay in the preparation of bottom lands for planting.

Lower Mississippi Basin.--Minor flooding continued on the Tallahatchie River for the first 5 days of the month in the Swan Lake, Miss., area. The Yazoo River remained at flood stage for the first 3 days of the month, dropping below flood stage on the 4th. Heavy rains on the 13th caused the Yazoo to rise to above flood stage again on the 14th and to remain above flood stage through the 23d.

Columbia Basin.--Damaging high water due to snowmelt occurred in the Silver Bowl drainage near Butte, Mont., on the 23d and 24th. Snow in the lower elevations was unusually heavy around the middle of March. Temperatures ranged from the middle 40's on the 19th through the 22d, to 65° on the 24th. Homes damaged by the high water were located mainly in the area to the west of Blacktail Deer Creek. Five or six small bridges on secondary roads were damaged. One death resulted when a small boy fell into a normally dry wash in which the water was 4 ft. deep.

FLOOD STAGE DATA

Table 5

(All dates in March unless otherwise specified)

MARCH 1956

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
ST. LAWRENCE DRAINAGE Lake Michigan	Ft.			Ft.	
Red Cedar:					
Williamston, Mich.	7	2 6	3 7	7.8 8.7	2 7
East Lansing, Mich.	8	6	8	10.1	7
Grand:					
Lansing, Mich.	11	7	7	11.4	7
Ionia, Mich.	21	7	9	21.8	8
Lowell, Mich.	15	8	9	15.1	9
Shiawassee: Owosso, Mich.	7	7	7	7.8	7
Lake Huron					
Flint: Flint, Mich.	11	7	7	11.3	7
Lake Erie					
St. Joseph: Montpelier, Ohio	10	5	10	13.6	7
Maumee: Fort Wayne, Ind.	15	7	9	16.0	8
Lake Ontario					
Honeoye Creek: Honeoye Falls, N.Y.	5	7	8	6.1	7
Oatka Creek: Garbutt, N.Y.	5	7	8	8.2	8
Black Creek: Churchville, N.Y.	5	7	10	7.5	8
Genesee:					
Scio, N.Y.	8	6 7	6 9	8.2 10.5	6 8
Rochester, N.Y.	10	7	10	11.6	8
ATLANTIC SLOPE DRAINAGE					
Perkiomen Creek: Graterford, Pa.	8	14	14	11.0	14
Chenango:					
Sherburne, N.Y.	8	7	7	8.1	7
Whitney Point, N.Y.	12	7	8	E14.5	8
Greene, N.Y.	13	8	9	13.4	9
Canesteo:					
West Cameron, N.Y.	17	7	7	17.2	7
Addison, N.Y.	17	7	7	17.0	7
Chemung:					
Elmira, N.Y.	12	6	7	16.1	7
Chemung, N.Y.	12	6	9	19.2	8
West Branch: Williamsport, Pa.	20	9	9	20.4	9
Susquehanna:					
Bainbridge, N.Y.	13	7	9	15.5	9
Conklin, N.Y.	11	7	9	E15.7	8
Binghamton, N.Y.	14	8	9	15.9	8
Vestal, N.Y.	18	7	9	22.8	8
Towanda, Pa.	16	7	10	22.4	8
Wilkes-Barre, Pa.	22	8	10	28.2	9
Danville, Pa.	20	9	10	22.6	9
Sunbury, Pa.	16	9	10	17.5	9
Tar:					
Tarboro, N.C.	19	21	23	21.6	22
Greenville, N.C.	13	20	25	14.7	23
Neuse:					
Neuse, N.C.	11	16	21	18.0	17
Smithfield, N.C.	13	17	23	19.25	19
Goldsboro, N.C.	14	20	27	19.3	24
Kinston, N.C.	14	24	30	16.4	28
Cape Fear:					
Fayetteville, N.C.	35	18	19	39.9	18
Lock No. 2, Elizabethtown, N.C.	20	18	22	29.3	19
Pee Dee:					
Cheraw, S.C.	30	17	18	34.35	17
Peedee, S.C.	19	19	23	20.6	22
Saluda:					
Pelzer, S.C.	6	16	17	7.5	17
Chappells, S.C.	13	16	17	14.0	17
Broad: Blairs, S.C.	11	16	19	20.0	17
Santee: Rimini, S.C.	12	3 16	13 31	*** 15.4	 23
ATLANTIC SLOPE DRAINAGE (Cont'd.)	Ft.			Ft.	
Ogeechee:					
Midville, Ga.	6	21	22	6.25	21
Dover, Ga.	7	26	26	7.3	26
Ocmulgee:					
Macon, Ga.	18	19	19	18.9	19
Abbeville, Ga.	11	24	27	12.0	25
Oconee: Mt. Vernon, Ga.	16	25	25	16.1	25
Altamaha: Charlotte, Ga.	15	30	30	15.0	30
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	17	27	20.4	21
Cahaba:					
Centreville, Ala.	23	15	17	28.1	16
Suttle, Ala.	30	16	20	39.0	18
Marion Junction, Ala.	36	19	19	36.5	19
Alabama:					
Montgomery, Ala.	35	17	20	39.5	18
Millers Ferry, Ala.	40	18	24	46.8	20
Claiborne, Ala.	40	20	26	43.1	23
Black Warrior:					
Tuscaloosa Lock & Dam, Ala.	47	17	17	49.0	17
Tombigbee:					
Gainesville, Ala.	36	16	23	39.5	18
Lock 4, Demopolis, Ala.	42	16	26	57.4	20
Lock 3, Whitfield, Ala.	33	Feb. 5 15	1 29	53.3 56.1	12 21
Lock 2, Pennington, Ala.	46	17	28	56.8	22
Lock 1, Jackson, Ala.	31	Feb. 9 17	2 30	35.8 37.4	16 25, 26
Chickasawhay:					
Enterprise, Miss.	20	15	19	33.0	17
Shubuta, Miss.	30	18	23	38.2	20
Waynesboro, Miss.	35	20	23	37.9	21
Leaf: Beaumont, Miss.	20	19	22	21.3	21
Pascagoula, Merrill, Miss.	22	23	23	22.0	23
Bogue Chitto: Franklin, La.	11	18	18	11.6	18
Pearl:					
Edinburg, Miss.	20	16	22	23.8	18
Jackson, Miss.	18	14	Apr. 1	31.2	23
Monticello, Miss.	15	15	Apr. 3	20.4	17
Columbia, Miss.	17	17	Apr. 1	19.85	18
Bogalusa, La.	15	Feb. 4	1/	19.3	23
Pearl River, La.	12	7	1/	15.2	22
MISSISSIPPI SYSTEM Upper Mississippi Basin					
Turkey: Garber, Iowa	11	28	29	16.9	28
East Branch: Blanchardville, Wis.	7	2 7	2 7	8.5 9.7	2 7
Pecatonica: Martintown, Wis.	11	4	4	11.0	4
Ohio Basin					
French Creek: Meadville, Pa.	57	7	9	59.4	8
Allegheny:					
Olean, N.Y.	10	6	12	17.5	8
Warren, Pa.	14	7	11	18.3	8
West Hickory, Pa.	14	7	10	17.3	8
Franklin, Pa.	17	7	10	20.8	8
Parker, Pa.	20	8	10	22.7	9
Lock 9, Rimerton, Pa.	21	8	10	22.5	9
Lock 8, Mosgrove, Pa.	24	8	10	25.8	9
Lock 7, Kittanning, Pa.	23	8	9	24.7	9
Lock 5, Freeport, Pa.	21	7	11	24.9	9
Lock 4, Natrona, Pa.	20	8	11	23.0	9
Lock 3, Acmetonia, Pa.	20	9	11	21.7	9
Little Kanawha:					
Glenville, W. Va.	23	14	15	23.7	14

FLOOD STAGE DATA

Table 5-Continued

(All dates in March unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.) Ohio Basin (Cont'd.)	*Ft.*			*Ft.*	
Little Kanawha (Cont'd.):					
Creston, W. Va.	20	15	15	20.5	15
Paint Creek: Bourneville, Ohio	10	7	8	12.9	8
Sandusky: Upper Sandusky, Ohio	13	6	[illegible]	13.4	7
Scioto:					
La Rue, Ohio	11	[illegible]	[illegible]	**12.0	9
Prospect, Ohio	10	9	10	**11.2	10
Circleville, Ohio	14	9	10	**11.4	10
Piketon, Ohio	16	8	11	18.6	9
Kentucky:					
Hazard, Ky.	20	14	14	20.7	14
Jackson, Ky.	29	15	15	34.1	15
Green:					
Munfordville, Ky.	28	16	17	29.4	17
Lock 6, Brownsville, Ky.	28	16	19	30.3	18
Lock 4, Woodbury, Ky.	33	17	20	38.4	19
Lock 2, Rumsey, Ky.	34	Feb. 2	27	39.8	22
White:					
Elliston, Ind.	18	Feb. 26	2	23.0	Feb. 28
Edwardsport, Ind.	12	Feb. 17 8	5 10	19.9 12.7	1 9
Petersburg, Ind.	16	1	6	20.7	3
Wabash:					
Wabash, Ind.	12	8	8	12.4	8
Lafayette, Ind.	11	8	9	12.7	8
Covington, Ind.	16	Feb. 27	1	19.2	Feb. 29
Montezuma, Ind.	14	Feb. 26	2	17.4	Feb. 27
Terre Haute, Ind.	14	Feb. 26	3	15.5	Feb.27-28
Mt. Carmel, Ill.	17	Feb. 26	7	19.8	1
Cumberland:					
Williamsburg, Ky.	21	15	15	21.1	15
Lock F, Eddyville, Ky.	50	Feb. 1 18	2 20	51.7 50.6	1 19
South Chickamauga Creek:					
Chickamauga (nr), Tenn.	10	14	17	11.6	15
Tennessee:					
Gilbertsville, Ky.	320	1	29	327.3	21
Whitesburg, Ala.	560	16	19	561.4	18
Ohio:					
Pittsburgh, Pa.	25	8	10	26.5	9
Dashields Dam, Pa.	26	9	10	27.3	9
Montgomery Dam, Pa.	32	9	10	33.2	9
Dam 7, Midland, Pa.	30	8	10	35.6	9
Dam 8, Newell, W. Va.	32	9	10	34.7	9
Dam 9, New Cumberland, W. Va.	34	9	10	34.3	9
Dam 10, Steubenville, Ohio	33	9	10	35.8	9
Dam 12, Wheeling, W. Va.	36	9	10	38.3	10
Dam 13, McMechen, W. Va.	37	9	11	41.0	10
Marietta, Ohio	35	10	10	36.3	10
Parkersburg, W. Va.	36	10	10	36.0	10
Point Pleasant, W. Va.	40	10 15	12 16	41.0 40.8	11 15

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.) Ohio Basin (Cont'd.)	*Ft.*			*Ft.*	
Ohio: (Cont'd.)					
Dam [illegible], Ashland, Ky.	[illegible]	15	17	52.5	[illegible]
Dam 30, Greenup, Ky.	52	16	17	[illegible]	[illegible]
Portsmouth, Ohio	50	16	17	50.9	[illegible]
Dam 33, Maysville, Ky.	50	16	[illegible]	51.6	17
Cincinnati, Ohio	52	[illegible]	19	[illegible]	[illegible]
Madison, Ind.	46	[illegible]	[illegible]	46.5	[illegible]
Dam 41, Louisville, Ky. (Upper Gage)	28	17	21	[illegible]	19
(Lower Gage)	55	[illegible]	21	57.2	[illegible]
Dam 43, Evans Landing, Ind.	57	[illegible]	[illegible]	58.6	[illegible]
Dam 44, Leavenworth, Ind.	53	[illegible]	23	[illegible]	20
Dam 45, Addison, Ky.	47	[illegible]	[illegible]	50.8	[illegible]
Tell City, Ind.	[illegible]	[illegible]	[illegible]	44.0	[illegible]
Dam 46, Owensboro, Ky.	41	17	[illegible]	42.7	[illegible]
Dam 47, Newburgh, Ind.	38	Feb. 5 10	6 27	45.0 [illegible]	Feb. [illegible] [illegible]
Evansville, Ind.	42	[illegible]	23	42.6	22
Dam 48, Cypress, Ind.	38	Feb. 7 [illegible]	7 27	[illegible] 44.6	Feb. 25 22
Mt. Vernon, Ind.	35	Feb. 7	[illegible]	42.6 41.8	Feb. [illegible] 23
Dam 49, Uniontown, Ky.	37	Feb. 10	[illegible]	44.5 [illegible]	Feb. [illegible] 23
Shawneetown, Ill.	33	Feb. 6	30	[illegible] 43.0	Feb. [illegible] [illegible]
Dam 50, Fords Ferry, Ky.	34	Feb. [illegible]	30	47.8 45.6	Feb. 27 24
Dam 51, Golconda, Ill.	40	Feb. 19	7	44.8	Feb.27-28
Paducah, Ky.	39	Feb. 19 19	4 23	42.9 39.4	Feb. [illegible] 21
Dam 52, Brookport, Ill.	37	Feb. 5 16	10 28	[illegible] 41.1	Feb. 26 21
Dam 53, Mound City, Ill.	42	Feb. 7 17	8 27	47.7 44.5	Feb. 27 21
Cairo, Ill.	40	Feb. 19 20	6 21	43.6 40.6	Feb. 27 22
White Basin					
White:					
Clarendon, Ark.	26	Feb. 9	7	29.0	Feb. 25
St. Charles, Ark.	25	Feb. [illegible]	10	[illegible]	Feb. [illegible]
Lower Mississippi Basin					
Tallahatchie: Swan Lake, Miss.	26	Feb. 5	4	28.3	Feb. 10
Yazoo: Yazoo City, Miss.	29	Feb. 20 14	3 [illegible]	29.0 ***[illegible]	1-3 16

* Provisional
** Highest stage reported but not necessarily the crest
*** Backwater from Lake Marion
I Continued at end of month
E Estimated

RAWINSONDE DATA

Average monthly values

Table 20

MARCH 1956

ALBANY, N. Y. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	86	- 2.2	71	307	1.6
1,000	30	131			305	1.9
950	30	541	- 4.0	68	304	3.6
900	30	962	- 5.9	69	290	4.9
850	30	1,408	- 7.4	65	285	6.3
800	30	1,878	- 8.9	63	279	9.2
750	30	2,383	-10.8	61	277	12.0
700	30	2,904	-13.1	58	274	14.3
650	30	3,472	-16.3	60	271	15.4
600	30	4,063	-19.4	57	269	17.4
550	30	4,707	-23.2	51	267	19.8
500	30	5,395	-27.7	48	265	22.0
450	30	6,151	-32.9	46	261	24.9
400	30	6,964	-38.0		262	26.9
350	30	7,871	-43.6		263	29.1
300	30	8,892	-49.2		267	31.6
250	28	10,080	-52.2		268	33.2
200	27	11,517	-52.7		265	28.2
175	26	12,373	-52.9		265	26.2
150	25	13,367	-52.6		263	25.2
125	25	14,540	-54.0		263	22.0
100	22	15,949	-55.8		259	17.1
80	19	17,362	-56.1		260	14.6
60	17	19,199	-55.3		257	7.5
50	16	20,376	-55.3		251	8.0
40	15	21,816	-55.2		262	4.4
30	14	23,657	-54.6		265	4.7
20						

ALBUQUERQUE, N. MEX. (836 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	10.7	18	18	1.6
1,000	31	92				
950	31	536				
900	31	996				
850	31	1,480				
800	31	1,986	9.9		307	3.8
750	31	2,520	5.5		287	7.2
700	31	3,077	1.0	25	275	8.6
650	31	3,668	- 3.6	29	273	9.7
600	31	4,294	- 8.5	30	274	11.7
550	31	4,958	-13.8	32	273	13.6
500	31	5,678	-19.0	32	274	14.4
450	31	6,462	-24.4		267	16.0
400	31	7,301	-30.5		280	19.0
350	31	8,236	-37.1		287	21.6
300	30	9,282	-44.6			
250	30	10,479	-52.4			
200	30	11,900	-57.8			
175	30	12,741	-57.7			
150	30	13,712	-58.5			
125	30	14,852	-60.6			
100	27	16,238	-63.5			
80	26	17,609	-63.0			
60	23	19,387	-60.8			
50	21	20,530	-58.9			
40	17	21,935	-56.6			
30	16	23,763	-55.6			
20						

ANCHORAGE, ALASKA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	- 2.8	49	55	0.3
1,000	31	51			20	.8
950	31	455	- 5.5	48	55	1.7
900	31	877	- 8.0	48	85	3.1
850	31	1,318	-10.8	51	108	3.8
800	31	1,782	-13.4	51	125	3.6
750	31	2,273	-15.8	49	158	3.8
700	31	2,788	-18.4	45	192	3.7
650	31	3,341	-21.5	43	226	3.5
600	31	3,922	-25.4	43	243	4.6
550	31	4,548	-29.7	42	236	4.8
500	31	5,220	-34.4		233	5.4
450	29	5,954	-39.3		249	6.1
400	29	6,748	-44.7		257	7.7
350	29	7,630	-50.2		255	8.5
300	29	8,625	-54.1		246	7.5
250	29	9,793	-53.6		249	7.6
200	23	11,229	-49.8		292	8.0
175	22	12,092	-49.2		296	9.5
150	22	13,103	-48.3		295	9.6
125	21	14,295	-48.7		284	12.1
100	20	15,759	-48.3		304	9.2
80	17	17,244	-46.9		309	8.4
60	15	19,194	-46.3		295	6.0
50	14	20,417	-47.2			
40	9	21,936	-46.5			
30						
20						

ANNETTE, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	2.7	76	142	1.2
1,000	31	92			151	2.5
950	31	505	- .4	76	167	3.0
900	31	935	- 3.1	74	196	2.5
850	31	1,385	- 5.9	71	211	3.2
800	31	1,857	- 8.8	70	211	4.4
750	31	2,361	-11.9	67	219	5.3
700	31	2,879	-15.1	64	226	6.4
650	31	3,440	-18.6	58	238	5.4
600	31	4,027	-22.7	55	246	6.3
550	31	4,662	-27.2	52	248	5.8
500	31	5,338	-32.1	53	252	6.4
450	31	6,079	-37.4	49	256	6.6
400	31	6,878	-42.6		263	4.4
350	31	7,769	-47.8		233	3.1
300	30	8,775	-52.1		281	4.6
250	30	9,949	-53.3		275	7.4
200	30	11,388	-51.8		273	10.7
175	30	12,253	-51.3		279	12.6
150	30	13,254	-50.7			
125	30	14,440	-50.7			
100	27	15,893	-50.7			
80	27	17,347	-50.4			
60	25	19,229	-50.1			
50	25	20,421	-49.5			
40	23	21,879	-49.5			
30	15	23,802	-48.2			
20						

ATHENS, GA. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	246	10.6	68	248	1.6
1,000	30	150				
950	30	582	11.8	51	244	3.4
900	30	1,031	8.9	51	255	8.0
850	30	1,501	6.0	52	263	9.4
800	30	1 996	3.7	47	271	10.6
750	30	2,527	1.3	39	272	11.7
700	30	3,071	- 1.3	34	272	12.9
650	30	3,664	- 4.7	30	272	16.0
600	30	4,283	- 8.8		271	17.5
550	30	4,953	-13.1		271	21.1
500	30	5,671	-17.7		272	24.0
450	30	6,462	-23.4		271	26.2
400	30	7,302	-29.6		272	27.6
350	29	8,234	-36.8		273	30.3
300	29	9,283	-44.5		274	32.4
250	28	10,485	-51.9		274	39.2
200	28	11,912	-56.0		274	42.9
175	27	12,757	-55.9		273	41.7
150	26	13,734	-58.1		273	39.0
125	24	14,857	-61.4		272	34.6
100	22	16,228	-63.4		273	29.2
80	20	17,592	-63.0		272	21.5
60	18	19,373	-59.9		272	10.0
50	18	20,517	-57.8		271	8.6
40	14	21,922	-57.3		276	6.1
30	12	23,751	-55.4		284	3.9
20	7	26,339	-52.4			

BARROW, ALASKA (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	24.5	51	36	1.6
1,000	31	128			36	1.9
950	31	520	-17.6	67	65	1.9
900	31	914	-15.2	60	57	1.4
850	31	1,346	-15.8	56	51	1.6
800	31	1,801	-17.4	55	37	.6
750	31	2,289	-19.7	53	304	.3
700	31	2,791	-22.6	51	7	1.4
650	31	3,341	-25.5	52	355	2.0
600	31	3,908	-28.8	51	331	1.6
550	31	4,532	-32.6	49	310	2.0
500	31	5,191	-37.0		321	2.0
450	31	5,920	-41.8		314	1.1
400	31	6,701	-47.2		282	1.2
350	31	7,572	-53.3		251	3.2
300	31	8,550	-58.5		251	5.7
250	31	9,687	-60.7		260	5.7
200	31	11,081	-57.9		277	10.5
175	31	11,922	-57.3		276	12.4
150	31	12,896	-56.8		276	13.3
125	30	14,052	-56.3		277	17.0
100	29	15,479	-55.5		273	17.5
80	29	16,901	-55.0		277	19.4
60	24	18,805	-51.4			
50	21	19,971	-50.6			
40	16	21,407	-49.4			
30	9	23,360	-49.4			
20						

BETHEL, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	-10.7	77	3	2.2
1,000	31	52			18	4.0
950	31	454	-10.0	66	51	2.0
900	31	864	-10.4	62	13	1.7
850	31	1,303	-11.7	61	46	.8
800	31	1,765	-13.6	57	337	1.3
750	31	2,259	-16.3	53	320	1.1
700	31	2,769	-19.4	52	259	1.5
650	31	3,326	-22.5	47	267	2.7
600	31	3,899	-25.8	45	264	3.6
550	31	4,534	-29.8	42	259	4.8
500	31	5,197	-34.2	40	258	5.3
450	31	5,936	-38.9		262	6.9
400	31	6,726	-43.6		269	8.9
350	31	7,613	-48.6		274	10.6
300	31	8,617	-52.1		271	9.2
250	31	9,794	-52.2		266	11.2
200	31	11,243	-50.0		272	11.2
175	31	12,116	-49.3		271	12.0
150	30	13,127	-49.3		271	11.8
125	30	14,324	-48.3		266	12.8
100	30	15,791	-48.1		267	12.0
80	30	17,262	-47.4		266	11.2
60	29	19,165	-46.7		268	13.0
50	28	20,383	-46.8		266	10.2
40	23	21,869	-46.3			
30	12	23,781	-44.5			
20						

BISMARCK, N. DAK. (955 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	- 5.0	81	336	0.3
1,000	31	139				
950	31	550			223	.1
900	31	972	- 3.8	64	289	4.4
850	31	1,422	- 5.1	58	299	7.5
800	31	1,897	- 6.9	51	305	10.3
750	31	2,402	- 9.1	48	304	11.4
700	31	2,928	-12.4	47	302	13.2
650	31	3,495	-15.9	48	300	14.7
600	31	4,090	-19.1	41	301	15.6
550	31	4,731	-23.3	41	293	17.2
500	31	5,422	-28.5	40	293	17.3
450	29	6,172	-34.4		291	19.6
400	29	6,978	-40.4		280	19.7
350	29	7,876	-46.4			
300	29	8,887	-51.8			
250	29	10,057	-55.0			
200	29	11,482	-54.3			
175	28	12,348	-52.4			
150	28	13,344	-52.2			
125	28	14,522	-52.9			
100	28	15,955	-54.2			
80	28	17,385	-54.7			
60	27	19,220	-54.1			
50	25	20,391	-54.2			
40	23	21,833	-53.4			
30	16	23,753	-52.2			
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BOISE, IDAHO (917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	6.0	53	124	1.2
1,000	31	150				
950	31	581				
900	31	1,021	7.0	42	211	.1
850	31	1,489	3.8	42	269	3.0
800	31	1,978	- .3	48	276	5.6
750	31	2,495	- 4.4	52	278	7.3
700	31	3,030	- 8.4	55	280	9.0
650	31	3,609	-12.1	58	282	10.2
600	31	4,209	-15.6	54	288	12.5
550	31	4,866	-19.6	50	286	16.7
500	31	5,562	-24.5	51	285	16.7
450	31	6,328	-30.2	48	290	19.1
400	31	7,150	-36.4	49	276	22.9
350	31	8,063	-42.7		281	21.0
300	31	9,087	-49.7			
250	31	10,262	-56.6			
200	30	11,658	-58.8			
175	30	12,500	-56.6			
150	30	13,480	-55.4			
125	30	14,640	-56.4			
100	30	16,053	-57.1			
80	30	17,464	-56.6			
60	29	19,296	-55.6			
50	28	20,456	-55.3			
40	28	21,879	-54.9			
30	20	23,736	-54.5			
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BROWNSVILLE, TEX. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	18.7	85	110	3.5
1,000	30	138	19.0	79	118	4.7
950	30	582	17.3	74	146	6.8
900	30	1,040	16.4	59	167	4.7
850	30	1,524	14.8	48	197	2.2
800	30	2,035	13.1	37	242	2.5
750	30	2,585	11.2	28	252	5.0
700	30	3,149	8.2	25	260	7.5
650	30	3,760	4.1	23	271	9.5
600	30	4,401	- .2		273	13.2
550	30	5,093	- 4.8		277	14.3
500	30	5,834	-10.2		273	15.3
450	30	6,644	-16.4		280	17.0
400	29	7,510	-23.0		280	20.5
350	28	8,474	-30.5		273	21.9
300	28	9,551	-38.8		271	26.7
250	28	10,776	-48.2			
200	27	12,216	-57.2			
175	27	13,055	-60.0			
150	27	14,008	-63.8			
125	27	15,112	-69.2			
100	23	16,421	-73.6			
80	20	17,716	-73.7			
60	19	19,413	-67.7			
50	19	20,522	-62.7			
40	19	21,912	-58.6			
30	18	23,734	-54.9			
20	10	26,339	-52.1			

BUFFALO, N. Y. (994 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	182	- 2.3	80	267	0.9
1,000	31	130				
950	31	539	- 3.4	68	266	2.1
900	31	963	- 5.3	68	265	4.6
850	31	1,410	- 7.1	63	271	6.9
800	31	1,881	- 9.2	60	272	8.8
750	31	2,383	-11.7	60	272	10.2
700	30	2,902	-14.7	56	275	11.9
650	29	3,462	-17.7	56	277	14.9
600	29	4,050	-20.5	53	278	18.4
550	29	4,692	-24.2	50	276	20.3
500	29	5,378	-28.5	50	275	22.1
450	29	6,129	-33.6		278	25.5
400	29	6,940	-39.3		280	25.3
350	29	7,842	-45.5		286	23.9
300	28	8,860	-50.6		283	24.3
250	27	10,042	-53.8		284	19.1
200	27	11,474	-53.2		278	19.0
175	27	12,335	-52.4		279	17.0
150	27	13,329	-52.9		278	18.7
125	26	14,494	-54.6		280	16.7
100	26	15,915	-56.5		277	15.4
80	25	17,322	-56.9		274	13.3
60	21	19,157	-56.1		283	9.3
50	21	20,314	-56.0		286	9.2
40	19	21,726	-55.9			
30	14	23,554	-55.2			
20	6	26,311	-50.5			
15	5	28,169	-48.5			

BURRWOOD, LA. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	16.3	86	67	0.4
1,000	31	158	17.9	75	174	1.8
950	31	597	15.2	73	190	3.6
900	31	1,053	13.2	61	213	3.8
850	31	1,533	11.1	57	233	4.8
800	31	2,037	9.2	49	249	5.7
750	31	2,577	6.6	43	257	7.4
700	31	3,133	4.1	33	267	9.8
650	31	3,740	.8	28	274	12.2
600	31	4,371	- 3.3		277	14.1
550	31	5,058	- 7.9		279	16.8
500	31	5,787	-13.0		277	18.0
450	30	6,587	-18.5		276	20.4
400	29	7,447	-25.0		280	19.9
350	28	8,403	-32.4		279	20.6
300	27	9,469	-40.9			
250	26	10,682	-50.0			
200	26	12,112	-57.0			
175	25	12,955	-58.8			
150	25	13,915	-62.1			
125	24	15,036	-65.8			
100	23	16,369	-70.2			
80	22	17,690	-70.8			
60	19	19,406	-67.3			
50	18	20,517	-63.2			
40	18	21,899	-60.0			
30	18	23,709	-56.5			
20	11	26,292	-54.8			
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CARIBOU, ME. (990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	191	- 7.4	62	313	2.7
1,000	31	111				
950	31	515	- 7.3	54	315	5.4
900	31	931	-10.0	56	315	5.8
850	31	1,369	-12.5	57	315	6.1
800	31	1,830	-14.1	55	301	7.4
750	31	2,325	-15.4	52	292	7.5
700	31	2,838	-17.0	48	286	9.1
650	31	3,398	-19.6	46	274	10.2
600	31	3,981	-22.7	44	271	13.5
550	31	4,618	-26.2	46	270	15.9
500	31	5,298	-30.4	44	266	19.3
450	31	6,046	-35.4		264	20.7
400	31	6,849	-40.9		263	24.3
350	31	7,744	-47.1		263	26.1
300	31	8,753	-51.8		263	26.9
250	30	9,926	-53.0		264	29.5
200	26	11,364	-51.0		267	26.2
175	25	12,237	-50.8		263	22.8
150	25	13,240	-50.7		260	21.7
125	24	14,434	-51.5		261	16.6
100	21	15,873	-52.8		262	17.1
80	18	17,319	-54.0		258	16.3
60	13	19,140	-55.0		250	14.6
50	12	20,331	-54.4		255	8.4
40	11	21,787	-54.3		260	5.3
30	9	23,630	-54.7			
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CHARLESTON, S. C. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	13	11.2	77	220	1.8
1,000	31	159	13.8	65	216	4.3
950	31	595	12.7	54	245	6.8
900	31	1,043	9.6	54	256	7.7
850	31	1,516	7.1	51	267	9.0
800	31	2,012	4.9	46	267	10.5
750	31	2,547	2.2	41	273	12.9
700	31	3,091	- .8		274	13.9
650	31	3,685	- 4.1	34	275	16.3
600	31	4,305	- 8.0		276	17.7
550	31	4,983	-12.2		274	19.7
500	30	5,695	-17.3		277	22.0
450	30	6,488	-22.7		274	21.9
400	30	7,331	-28.6		282	23.8
350	30	8,273	-35.7			
300	30	9,327	-43.5			
250	30	10,532	-51.0			
200	30	11,962	-55.5			
175	29	12,804	-55.8			
150	28	13,783	-58.4			
125	28	14,920	-62.2			
100	27	16,286	-64.9			
80	27	17,643	-65.0			
60	24	19,405	-61.6			
50	23	20,543	-58.6			
40	23	21,951	-56.9			
30	22	23,775	-55.4			
20	11	26,381	-51.8			
15						

COLD BAY, ALASKA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	- 3.9	81	134	1.2
1,000	31	48			13	.8
950	31	455	- 6.8	72	199	.8
900	31	871	- 8.3	70	260	2.2
850	31	1,313	- 9.8	65	257	3.6
800	31	1,779	-11.4	52	224	5.7
750	31	2,278	-13.8	47	235	6.9
700	31	2,793	-16.4	42	232	8.7
650	31	3,356	-19.1	39	225	8.2
600	30	3,936	-22.5	40	227	8.7
550	30	4,575	-26.4	42	238	8.9
500	30	5,252	-30.5	42	246	10.0
450	30	6,004	-35.4		253	12.6
400	30	6,805	-40.9		252	14.0
350	30	7,701	-46.7		243	13.2
300	30	8,711	-51.1		241	14.9
250	30	9,892	-51.3		255	12.2
200	30	11,346	-49.3		271	14.9
175	29	12,218	-48.1		270	12.4
150	28	13,245	-48.0		265	16.3
125	28	14,445	-48.4			
100	28	15,913	-48.2			
80	28	17,383	-47.8			
60	28	19,279	-47.6			
50	25	20,480	-46.6			
40	24	21,952	-46.0			
30	19	23,864	-45.4			
20	6	26,635	-45.3			
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These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and meters per second. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

MARCH 1956

COLUMBIA, MO. (987 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	238	6.0	57	318	1.0
1,000	31	131				
950	31	553	5.7	52	268	2.4
900	31	993	3.3	52	268	5.8
850	31	1,455	1.5	49	270	9.1
800	31	1,942	- .6	49	275	10.7
750	31	2,456	- 2.9	49	276	11.7
700	31	2,999	- 5.8	47	273	13.5
650	31	3,575	- 9.5	46	275	15.8
600	31	4,190	-13.2	40	277	19.2
550	31	4,844	-18.0	34	277	20.8
500	31	5,552	-23.0		277	23.2
450	31	6,322	-28.2		274	24.7
400	31	7,152	-33.8		275	28.1
350	30	8,072	-40.1		275	32.3
300	30	9,108	-47.1		274	35.5
250	30	10,295	-54.0		277	38.5
200	29	11,707	-56.5		274	37.3
175	28	12,557	-55.7		274	36.0
150	28	13,538	-56.1		271	35.2
125	27	14,693	-57.8		274	29.1
100	27	16,095	-59.0		273	23.9
80	26	17,491	-59.9		277	16.4
60	24	19,291	-58.6		285	10.8
50	22	20,433	-57.4		276	7.3
40	21	21,845	-56.4		282	4.7
30	15	23,662	-56.5		293	4.0
20	8	26,248	-55.1			

DODGE CITY, KANS. (921 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	792	6.8	41	96	2.2
1,000	31	128				
950	31	558				
900	31	1,006	8.1	34	153	.3
850	31	1,475	5.9	32	260	2.5
800	31	1,968	3.3	32	298	4.0
750	31	2,492	.4	32	293	7.7
700	31	3,038	- 2.9	32	290	10.9
650	31	3,623	- 6.3	32	282	13.6
600	31	4,243	-10.5	33	274	15.3
550	31	4,906	-15.5	33	274	16.2
500	31	5,618	-20.7	34	274	16.8
450	31	6,390	-26.5		279	16.1
400	31	7,227	-32.8		276	18.9
350	31	8,153	-39.5		274	21.2
300	29	9,197	-46.6		281	22.0
250	29	10,385	-54.0		287	24.1
200	29	11,801	-57.3			
175	29	12,645	-56.7			
150	27	13,619	-57.2			
125	27	14,765	-59.5			
100	24	16,147	-61.6			
80	23	17,533	-60.8			
60	20	19,334	-59.1			
50	18	20,471	-58.1			
40	16	21,876	-57.3			
30	11	23,722	-55.9			
20	5	26,292	-54.4			

EL PASO, TEX. (881 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,195	16.1	[illegible]	243	1.4
1,000	31	94				
950	31	541				
900	31	1,006				
850	31	1,496	15.9		240	3.2
800	31	2,006	12.3		256	5.9
750	31	2,545	8.0		250	8.1
700	31	3,106	3.7		266	9.5
650	31	3,703	- .6		273	10.6
600	31	4,338	- 5.0		273	10.9
550	31	5,015	- 9.9		278	12.0
500	31	5,743	-15.2		280	13.2
450	31	6,535	-21.0		284	14.2
400	31	7,389	-27.4		284	16.9
350	31	8,336	-34.3		299	15.6
300	31	9,396	-42.2			
250	31	10,604	-51.2			
200	28	12,026	-58.7			
175	27	12,861	-58.9			
150	25	13,821	-60.3			
125	24	14,946	-63.9			
100	21	16,304	-66.3			
80	19	17,648	-67.2			
60	19	19,396	-63.7			
50	19	20,522	-60.2			
40	17	21,921	-57.9			
30	13	23,746	-55.3			
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ELY, NEV. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,908	2.4	41	297	0.9
1,000	31	149				
950	31	584				
900	31	[illegible]				
850	31	1,501				
800	31	1,997	4.5	39	317	1.1
750	31	2,527	1.4	36	279	3.2
700	31	3,071	- 3.1	41	280	5.5
650	31	3,655	- 7.6	44	279	7.9
600	31	4,270	-11.7	38	280	8.8
550	31	4,934	-16.2	35	289	11.9
500	31	5,641	-20.9	33	296	13.8
450	31	6,419	-26.1		290	14.4
400	31	7,252	-32.3		298	14.4
350	31	8,180	-39.2		291	16.2
300	31	9,217	-47.0		283	18.7
250	31	10,402	-54.6		279	21.4
200	31	11,811	-58.8			
175	31	12,651	-57.4			
150	31	13,624	-57.2			
125	31	14,774	-58.1			
100	31	16,171	-59.9			
80	31	17,564	-59.8			
60	30	19,368	-57.5			
50	30	20,521	-56.6			
40	30	21,938	-55.8			
30	21	23,779	-54.7			
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FAIRBANKS, ALASKA (995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	- 8.8	54	36	0.4
1,000	31	[illegible]				
950	31	491	- 9.3	44	72	1.0
900	31	[illegible]	-11.6	50	108	1.9
850	31	1,339	[illegible]	53	137	2.7
800	31	1,799	-14.9	56	149	2.9
750	31	2,293	-17.1	54	175	2.5
700	31	2,800	-19.6	51	203	2.6
650	31	3,355	-22.6	49	200	2.8
600	31	3,930	-26.1	46	[illegible]	3.4
550	31	4,557	-30.4	44	221	3.8
500	31	5,225	-35.3	44	229	4.7
450	31	5,958	-40.4		233	6.4
400	31	6,745	-45.8		247	6.2
350	31	7,623	-51.4		267	5.7
300	31	8,613	-55.0		246	3.2
250	31	9,774	-55.5		285	4.3
200	31	11,202	-53.3		278	6.8
175	31	12,062	-52.6		279	6.3
150	31	13,058	-52.0		278	10.6
125	30	14,242	-52.0		272	13.9
100	29	15,700	-50.9		285	8.1
80	27	17,165	-50.4		280	9.0
60	27	19,042	-50.2		269	5.2
50	26	20,227	-50.2		259	6.8
40	24	21,698	-49.8			
30	15	23,705	-47.4			
20						

FORT HUACHUCA, ARIZ. (856 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,428	15.1	20	273	2.3
1,000	31	88				
950	31	535				
900	31	1,002				
850	31	1,491	15.0	20	275	2.3
800	31	2,001	11.3	18	278	3.8
750	31	2,541	7.3		267	5.3
700	31	3,098	3.3		264	6.4
650	31	3,697	- .6		274	7.1
600	31	4,328	- 5.0		281	8.5
550	28	5,006	- 9.8		271	11.0
500	24	5,738	-15.2		272	13.0
450	21	6,530	-20.8		273	18.5
400	14	7,385	-27.2		275	24.4
350	12	8,338	-34.3		270	24.6
300	11	9,399	-42.1		276	28.2
250	8	10,635	-51.0			
200						
175						
150						
125						
100						
80						
60						
50						
40						
30						
20						

FORT WORTH, TEX. (995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	178	13.7	47	176	1.3
1,000	31	134				
950	31	573	13.9	42	177	4.6
900	31	1,023	11.9	42	210	6.0
850	31	1,499	9.6	40	237	7.1
800	31	2,000	7.4	36	259	9.3
750	31	2,534	4.4	32	270	11.0
700	31	3,087	.9	28	276	12.4
650	31	3,684	- 2.3		279	14.6
600	30	4,309	- 6.8		277	15.7
550	30	4,984	-11.5		275	18.5
500	30	5,706	-16.4		274	20.3
450	30	6,498	-22.0		272	24.1
400	30	7,345	-28.2		272	26.8
350	30	8,288	-35.3		272	31.3
300	30	9,343	-43.2		270	35.9
250	30	10,548	-51.4		269	42.3
200	30	11,976	-57.2		269	42.6
175	27	12,812	-58.6		270	40.8
150	26	13,777	-60.5		271	37.6
125	26	14,902	-63.6		272	33.1
100	25	16,260	-66.2		270	27.2
80	20	17,609	-66.2		272	18.6
60	18	19,362	-63.4		276	7.2
50	15	20,497	-60.0		295	2.1
40	13	21,898	-58.2		340	1.2
30	12	23,717	-56.0		234	1.1
20	7	26,298	-53.9			

GLASGOW, MONT. (932 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	695	- 3.0	75	354	1.3
1,000	31	129				
950	31	544				
900	31	971	- .6	58	302	3.3
850	31	1,426	- 2.8	56	296	7.0
800	31	1,903	- 5.4	58	298	9.5
750	31	2,412	- 8.4	59	298	10.7
700	31	2,939	-12.0	63	297	12.6
650	31	3,508	-15.7	64	295	14.1
600	31	4,100	-19.8	61	295	15.8
550	31	4,741	-24.2	56	291	16.5
500	31	5,428	-29.0	50	290	17.6
450	31	6,176	-34.5	48	290	17.5
400	30	6,988	-40.1		288	18.4
350	30	7,886	-46.2		287	18.8
300	29	8,897	-51.8		275	16.3
250	29	10,067	-55.4			
200	28	11,501	-54.2			
175	28	12,359	-53.1			
150	28	13,353	-52.5			
125	27	14,528	-53.3			
100	26	15,955	-53.6			
80	25	17,398	-53.7			
60	25	19,248	-53.2			
50	24	20,417	-53.2			
40	23	21,847	-53.5			
30	13	23,709	-53.3			
20						

GRAND JUNCTION, COLO. (851 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	6.6	30	20	1.6
1,000	31	119				
950	31	555				
900	31	1,005				
850	31	1,481			12	2.2
800	31	1,979	5.9	24	268	2.0
750	31	2,509	1.5	26	255	4.9
700	31	3,054	- 3.1	32	260	6.6
650	31	3,640	- 7.8	37	273	7.5
600	31	4,252	-12.3	40	280	8.9
550	31	4,913	-17.3	36	285	12.2
500	31	5,618	-22.6	35	283	13.9
450	31	6,393	-28.0	35	286	16.7
400	31	7,217	-34.3	34	289	19.0
350	31	8,137	-41.0		293	17.8
300	31	9,168	-48.1		302	20.1
250	30	10,338	-55.4		304	21.2
200	30	11,745	-58.3			
175	30	12,587	-56.6			
150	29	13,567	-57.0			
125	28	14,714	-58.5			
100	28	16,109	-60.3			
80	25	17,497	-60.1			
60	25	19,297	-58.8			
50	20	20,455	-57.5			
40	15	21,866	-56.3			
30	10	23,683	-54.8			
20						

GREAT FALLS, MONT. (885 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	0.6	55	261	4.1
1,000	31	123				
950	31	550				
900	31	988				
850	31	1,445	.6	45	261	7.7
800	31	1,928	- 3.0	49	262	9.6
750	31	2,442	- 6.6	53	267	11.4
700	31	2,971	-10.5	57	272	12.3
650	31	[illegible],544	-14.6	58	278	13.9
600	31	4,138	-18.9	58	283	15.6
550	31	4,785	-23.3	54	290	17.3
500	31	5,471	-27.7	52	290	18.8
450	31	6,226	-33.2	50	289	18.3
400	31	7,037	-39.2	51	292	21.3
350	31	7,938	-45.9		295	22.3
300	31	8,949	-51.8		298	24.6
250	31	10,116	-56.6		295	28.3
200	31	11,531	-55.4		289	24.3
175	31	12,383	-54.5		289	21.4
150	31	13,371	-53.8		289	19.1
125	31	14,542	-54.2		288	17.8
100	31	15,970	-54.7		285	16.1
80	31	17,399	-54.4		293	13.6
60	30	19,250	-53.7		298	10.1
50	30	20,423	-53.3		311	10.5
40	28	21,855	-53.0		327	8.7
30	27	23,709	-52.6		336	8.5
20	13	26,341	-52.5		16	10.9

GREEN BAY, WIS. (990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	210	- 4.4	75	326	1.2
1,000	31	132				
950	31	542	- 3.4	59	298	2.3
900	31	963	- 6.0	57	315	2.9
850	31	1,409	- 8.1	54	311	3.7
800	31	1,878	- 9.5	47	300	5.4
750	31	2,378	-11.4	43	292	7.8
700	31	2,901	-13.6	44	288	9.7
650	31	3,468	-16.2	45	284	12.2
600	31	4,060	-19.3	44	279	14.4
550	31	4,703	-23.3	44	278	18.0
500	31	5,393	-28.2	46	280	19.1
450	31	6,145	-33.7	43	279	21.1
400	31	6,955	-39.6		272	22.1
350	31	7,855	-45.7		276	18.1
300	31	8,868	-50.8		273	18.2
250	31	10,043	-54.1		275	22.5
200	30	11,480	-52.2		286	18.3
175	30	12,345	-51.7			
150	30	13,342	-52.3			
125	30	14,517	-53.7			
100	30	15,945	-55.0			
80	30	17,368	-55.7			
60	30	19,198	-55.5		297	10.0
50	27	20,353	-55.8			
40	23	21,774	-55.7			
30	19	23,625	-55.0			
20	7	26,297	-52.1			

GREENSBORO, N. C. (985 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	273	7.2	67	259	1.3
1,000	31	150				
950	31	576	8.1	50	255	3.4
900	31	1,019	6.4	52	256	6.5
850	31	1,485	3.5	55	267	8.9
800	31	1,975	.7	55	277	10.3
750	31	2,498	- 1.6	48	280	11.5
700	31	3,038	- 4.3	40	283	13.2
650	31	3,623	- 7.8	36	284	14.5
600	31	4,236	-11.5	30	283	16.2
550	31	4,901	-15.6		281	17.5
500	31	5,611	-20.4		281	19.4
450	31	6,393	-25.8		278	20.5
400	31	7,225	-31.8		279	21.1
350	31	8,155	-38.4		279	21.9
300	31	9,198	-45.4		274	24.1
250	31	10,394	-52.2		276	24.8
200	31	11,822	-55.6			
175	31	12,672	-55.8			
150	30	13,649	-57.1			
125	30	14,795	-59.8			
100	28	16,178	-62.4			
80	25	17,553	-61.8			
60	22	19,339	-59.4			
50	19	20,479	-58.2			
40	15	21,885	-56.8			
30	9	23,716	-55.0			
20						

HATTERAS, N. C. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	10.2	77	275	1.7
1,000	31	146	10.4	71	268	3.0
950	31	576	9.5	62	276	6.0
900	31	1,020	6.5	58	287	7.6
850	31	1,487	4.3	51	286	9.1
800	31	1,979	2.0	46	276	10.8
750	31	2,502	- .9	46	273	13.9
700	31	3,045	- 3.7	39	271	15.2
650	31	3,630	- 7.1	36	270	16.3
600	31	4,247	-10.4		265	19.0
550	31	4,915	-14.6		263	19.6
500	31	5,626	-19.3		267	20.4
450	31	6,407	-24.8		270	23.0
400	31	7,248	-30.8		273	23.3
350	31	8,182	-37.4		262	24.0
300	31	9,229	-44.6			
250	31	10,428	-51.5			
200	31	11,857	-56.1			
175	30	12,704	-55.2			
150	29	13,686	-56.5			
125	28	14,829	-59.6			
100	28	16,213	-62.3			
80	26	17,590	-62.6			
60	24	19,373	-59.9			
50	22	20,518	-57.3			
40	22	21,931	-56.3			
30	20	23,765	-55.1			
20						

HILO, T. H. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	23.1	76	84	1.1
1,000	31	148	23.1	76	85	1.8
950	31	595	18.3	81	95	3.5
900	31	1,054	15.1	83	101	3.6
850	31	1,537	12.0	83	104	3.2
800	31	2,043	9.2	80	95	2.6
750	31	2,588	7.3	62	90	2.0
700	31	3,143	5.2	46	75	1.7
650	31	3,749	2.1	45	8	.5
600	31	4,388	- 1.2		256	1.2
550	31	5,080	- 5.2		259	2.5
500	31	5,819	-10.0		275	4.1
450	31	6,633	-15.3	38	278	6.5
400	31	7,505	-21.2	41	272	8.9
350	31	8,476	-28.6	40	271	11.9
300	31	9,562	-36.9	42	273	15.5
250	31	10,797	-46.7		275	24.5
200	31	12,240	-57.7		273	26.8
175	30	13,073	-62.9		280	32.6
150	27	14,016	-66.7		289	29.7
125	24	15,106	-71.6		286	22.5
100	19	16,401	-75.2		294	11.2
80	13	17,718	-74.6			
60	11	19,410	-66.3			
50	11	20,524	-63.3			
40	10	21,901	-60.3			
30						
20						

INTERNAT. FALLS, MINN. (972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	360	- 7.1	61	54	0.2
1,000	31	136				
950	31	539	- 6.7	57	288	.7
900	31	959	- 8.9	58	238	2.2
850	31	1,400	-10.2	55	260	4.3
800	31	1,866	-11.2	52	288	5.4
750	31	2,363	-12.9	51	298	6.7
700	31	2,883	-15.5	47	299	8.1
650	31	3,444	-18.6	46	299	9.5
600	31	4,030	-22.2	47	302	11.3
550	31	4,667	-26.3	48	299	12.9
500	31	5,347	-30.7	50	301	11.2
450	31	6,094	-35.7	48	297	16.4
400	31	6,896	-41.2		294	17.4
350	31	7,791	-46.9		297	18.7
300	28	8,813	-51.9		301	20.8
250	21	10,003	-55.0		300	23.7
200	18	11,443	-53.5		299	23.7
175	15	12,268	-52.2		296	21.7
150	15	13,285	-52.0		301	21.4
125	15	14,462	-53.4		291	18.9
100	13	15,867	-54.0		291	18.2
80	10	17,308	-54.4			
60	8	19,131	-53.2			
50	8	20,303	-53.5			
40	[illegible]	21,711	-53.3			
30						
20						

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and meters per second. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	JACKSON, MISS. (1006 MB.)						JACKSONVILLE, FLA. (1019 MB.)						KING SALMON, ALASKA (1003 MB.)						KOTZEBUE, ALASKA (1012 MB.)						LAKE CHARLES, LA. (1017 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	101	12.5	71	159	0.5	31	6	14.6	76	238	0.9	30	15	- 6.3	78	60	0.9	31	5	-15.5	81	94	1.9	31	5	15.0	83	144	1.0
1,000	31	153			114	.3	31	167	15.8	62	236	1.4	30	40			1	2.6	31	92			76	1.9	31	151	15.5	74	125	1.3
950	31	591	12.1	57	210	3.8	31	604	13.9	54	254	3.9	30	439	- 6.8	70	107	1.7	31	493	-12.1	63	112	1.9	31	589	13.9	69	167	1.4
900	31	1,036	9.4	61	229	5.5	31	1,056	11.3	49	259	5.1	30	862	- 8.4	67	141	1.2	31	897	-12.7	62	73	1.8	31	1,041	12.1	66	208	2.9
850	31	1,509	7.6	58	246	7.0	31	1,531	8.6	48	264	5.7	30	1,304	-10.1	63	191	1.7	31	1,332	-13.9	60	68	2.5	31	1,518	10.5	55	255	4.0
800	31	2,007	6.1	48	257	9.1	31	2,030	6.3	40	264	7.7	30	1,769	-12.4	59	230	2.3	31	1,790	-15.8	58	117	2.2	31	2,022	8.8	45	261	6.3
750	31	2,541	3.7	42	267	10.4	31	2,563	3.8		262	9.5	30	2,262	-14.4	55	222	3.1	31	2,281	-18.3	55	71	1.0	31	2,562	6.2	38	273	9.4
700	31	3,094	1.0	43	272	12.6	31	3,115	1.0	33	267	11.9	30	2,780	-17.3	54	228	3.8	31	2,786	-21.2	51	77	1.9	31	3,116	3.4	31	274	10.9
650	31	3,686	- 2.3	37	272	16.1	31	3,711	- 2.1		268	13.9	30	3,336	-20.6	50	227	5.1	31	3,335	-24.5	46	90	1.8	31	3,715	.2		273	14.1
600	31	4,315	- 6.1		272	18.6	31	4,339	- 5.9		269	16.6	30	3,919	-24.6	50	237	5.1	31	3,908	-28.1	44	105	1.8	31	4,350	- 4.1		278	16.0
550	31	4,989	-10.7		273	20.3	31	5,013	-10.2		273	17.6	30	4,547	-28.8	51	237	6.3	31	4,529	-31.9	44	152	.4	31	5,030	- 8.8		286	16.6
500	31	5,715	-16.0		275	22.9	31	5,742	-15.1		275	20.8	30	5,222	-33.4	49	239	7.7	31	5,195	-35.9	44	89	1.2	31	5,762	-13.5		287	19.2
450	31	6,514	-21.4		274	25.3	31	6,537	-20.7		272	23.7	30	5,957	-38.6		242	9.2	31	5,924	-40.4		115	1.4	31	6,561	-19.0		280	24.6
400	31	7,359	-27.6	34	276	28.4	31	7,390	-26.9		272	27.1	30	6,753	-43.9		246	11.8	31	6,714	-45.5		224	1.2	31	7,421	-25.4		282	24.3
350	31	8,304	-34.8		277	31.4	31	8,339	-34.2		273	31.2	30	7,638	-48.6		254	12.9	31	7,593	-50.5		221	3.0	31	8,376	-32.9			
300	31	9,362	-42.9		276	36.3	31	9,400	-42.1		276	31.0	29	8,632	-51.2		251	13.1	30	8,593	-54.9		261	2.0	31	9,441	-41.3			
250	31	10,567	-51.3		276	43.8	31	10,610	-50.6		276	37.1	28	9,821	-51.6		249	13.6	28	9,752	-55.5		248	4.3	31	10,654	-50.2			
200	30	12,000	-57.0		275	46.1	31	12,041	-56.0		276	40.6	27	11,271	-49.3		261	13.0	24	11,195	-52.8		246	6.5	30	12,085	-57.2			
175	27	12,848	-57.6		273	46.6	31	12,889	-56.9		273	40.2	27	12,147	-48.4		256	13.4	22	12,054	-52.2		260	10.2	30	12,927	-58.5			
150	27	13,816	-60.0		273	43.0	30	13,855	-60.4		272	37.5	25	13,173	-48.7		259	14.4	22	13,050	-52.0		268	11.1	30	13,890	-61.3			
125	24	14,944	-63.8		271	39.8	30	14,977	-64.7		270	34.0	25	14,371	-48.4		258	15.8	20	14,245	-51.7		268	13.1	29	15,013	-65.2			
100	19	16,301	-66.8		274	28.9	29	16,325	-68.0		271	26.9	23	15,834	-48.5		272	15.0	19	15,697	-51.1		269	16.3	29	16,357	-69.2			
80	17	17,647	-67.6		275	18.6	27	17,654	-68.0		267	19.9	22	17,307	-47.2		267	12.0	19	17,150	-49.9		271	15.8	27	17,686	-69.7			
60	14	19,388	-65.2		262	12.3	23	19,396	-64.1		267	10.4	19	19,232	-46.9		267	13.0	15	19,097	-48.2		274	20.6	24	19,419	-64.4			
50	13	20,507	-61.5		279	9.8	22	20,523	-60.3		262	6.5	18	20,451	-45.4		276	12.4	11	20,383	-46.8				23	20,544	-60.8			
40	12	21,903	-57.8		258	6.9	19	21,918	-58.0		264	6.0	15	21,968	-45.1		281	11.8	8	21,846	-47.1				20	21,941	-57.7			
30	9	23,750	-55.1				15	23,755	-54.5		270	5.6	13	23,901	-44.5		286	12.2	6	23,771	-46.4				17	23,760	-55.0			
20							12	26,367	-51.5				5	26,645	-41.9										9	26,377	-51.3			
15							5	28,244	-48.2																					

Standard pressure surface (mb)	LANDER, WYO. (826 MB.)						LAS VEGAS, NEV. (938 MB.)						LITTLE ROCK, ARK. (1007 MB.)						MAZATLAN, MEXICO (1011 MB.)						MC GRATH, ALASKA (997 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,696	0.7	48	262	3.2	31	660	16.1	12	236	2.5	31	79	11.3	62	178	0.9	31	14	20.4	80			31	103	- 8.1	56	1	0.7
1,000	31	126					31	113					31	139			195	.6	31	104	19.6	76			31	79			5	3.2
950	31	550					31	554					31	570	10.3	53	219	4.6	31	562	23.3	26			31	476	-10.9	57	63	2.2
900	31	995					31	1,016	16.7		238	2.2	31	1,015	7.7	56	234	6.6	31	1,019	21.9				31	889	-12.2	60	92	2.4
850	31	1,464					31	1,499	12.6		268	2.6	31	1,485	6.2	53	254	8.8	31	1,512	19.2				31	1,325	-13.0	54	68	3.4
800	31	1,955	1.3	38	282	3.0	31	2,003	8.4	18	294	3.3	31	1,980	4.5	44	261	9.9	31	2,030	16.3				31	1,785	-14.5	52	38	3.6
750	31	2,474	- 2.5	39	288	4.1	31	2,538	4.2	21	321	7.0	31	2,509	2.2	34	271	12.2	31	2,586	12.4				31	2,277	-16.5	48	36	2.6
700	31	3,014	- 6.5	41	284	6.1	31	3,089	.1	23	311	5.4	31	3,057	- .8	29	276	12.8	31	3,149	8.9				31	2,787	-19.3	47	10	2.8
650	31	3,589	-10.8	44	297	9.4	31	3,682	- 4.0	24	304	6.5	31	3,647	- 4.4	26	276	14.5	30	3,766	4.9				31	3,341	-22.8	45	320	1.2
600	30	4,201	-14.9	42	301	12.4	30	4,301	- 8.6		304	8.5	31	4,271	- 8.4		283	15.5	30	4,405	.7				31	3,916	-26.4	43	292	1.6
550	30	4,854	-19.3	38	303	14.9	30	4,972	-13.1		300	10.7	31	4,942	-12.3		277	16.9	30	5,101	- 3.9				31	4,541	-30.7	41	268	1.4
500	30	5,554	-24.5	36	300	16.7	30	5,690	-18.2		299	13.3	31	5,662	-17.2		276	18.1	30	5,842	- 9.1				31	5,209	-35.3		271	1.5
450	29	6,316	-30.7	37	295	16.0	30	6,473	-24.3		300	15.0	31	6,450	-22.6		276	19.2	30	6,657	-14.7				31	5,943	-40.4		302	2.9
400	28	7,137	-36.8		311	15.8	30	7,315	-31.0		295	16.0	31	7,297	-28.9		280	20.5	29	7,528	-21.5				30	6,734	-45.2		313	4.5
350	27	8,050	-43.4		300	16.9	30	8,247	-38.2		292	18.3	30	8,237	-36.2		285	21.4	28	8,500	-28.8				27	7,625	-50.3		321	4.9
300	27	9,072	-49.8		308	17.1	30	9,289	-46.3		292	21.2	30	9,288	-44.0		291	25.6	25	9,581	-37.3				27	8,621	-53.5		321	6.5
250	27	10,247	-55.7				30	10,478	-54.0		283	25.5	30	10,488	-52.2		295	20.6	18	10,819	-47.3				26	9,794	-53.9		322	5.9
200	26	11,660	-57.6				29	11,886	-59.5		275	29.5	30	11,912	-57.0										25	11,226	-51.8		305	6.4
175	26	12,506	-55.7				29	12,721	-59.3		270	29.9	30	12,757	-57.1										25	12,093	-50.7		309	6.6
150	26	13,489	-55.4				29	13,686	-59.0		270	28.0	28	13,727	-58.7										24	13,095	-49.5		307	7.3
125	26	14,647	-56.5				28	14,831	-60.3		271	25.6	27	14,864	-61.4										22	14,299	-49.1		305	6.6
100	24	16,054	-56.0				26	16,212	-62.4		272	21.7	24	16,235	-63.0										21	15,772	-48.0		301	7.7
80	24	17,472	-56.2				21	17,586	-62.7		273	17.5	21	17,606	-63.8										19	17,284	-45.7			
60	23	19,305	-55.7				20	19,359	-60.6		282	7.9	19	19,374	-60.7										16	19,193	-45.8			
50	22	20,472	-55.0				20	20,495	-59.5		291	6.4	18	20,516	-58.4										12	20,449	-45.5			
40	18	21,918	-54.1				19	21,903	-57.3		331	3.0	16	21,928	-56.6										10	21,964	-44.6			
30	13	23,748	-54.2				18	23,732	-55.8		8	2.1	10	23,765	-54.6										7	23,948	-43.6			
20							5	26,364	-52.6																					

Standard pressure surface (mb)	MEDFORD, ORE. (973 MB.)						MERIDA, MFXICO (1013 MB.)						MIAMI, FLA. (1019 MB.)						MIDLAND, TEXAS (915 MB.)						NANTUCKET, MASS. (1013 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	401	8.3	62	306	1.7	31	27	25.6	65			31	4	20.5	72	94	1.5	31	871	14.6	27	169	1.4	31	14	0.9	82	338	2.0
1,000	31	170					31	136	24.9	66			31	165	20.1	70	91	2.7	31	109					31	118	1.6	71	327	3.4
950	31	600	8.9	52	300	2.4	31	582	22.0	67			31	605	16.8	70	101	3.6	31	552					31	530	- .4	64	319	4.6
900	31	1,042	5.8	54	267	2.7	31	1,053	19.0	65			31	1,065	13.9	65	108	2.2	31	1,014	16.8	23	167	2.8	31	961	- 2.4	62	305	6.5
850	31	1,507	2.6	57	242	3.8	31	1,543	15.9	68			31	1,545	11.6	51	52	.3	31	1,498	13.9	21	217	6.0	31	1,412	- 4.6	62	292	7.4
800	31	1,994	- .6	57	233	5.0	31	2,056	12.8	65			31	2,050	10.0	35	249	1.3	31	2,006	11.2	20	243	7.7	31	1,889	- 5.4	59	290	9.3
750	31	2,514	- 3.1	48	254	8.3	31	2,599	10.9	48			31	2,589	7.6		266	2.8	31	2,545	8.0		262	9.7	31	2,397	- 7.4	55	285	12.6
700	31	3,051	- 6.0	50	267	9.6	31	3,169	8.5				31	3,150	4.8		278	4.1	31	3,105	3.7		271	11.0	31	2,928	- 9.9	54	280	14.6
650	31	3,634	- 9.0	47	277	12.3	31	3,784	5.6				31	3,755	1.4		278	6.3	31	3,704	- .7		276	12.2	31	3,504	-12.9	54	276	17.3
600	31	4,243	-12.7	45	275	12.2	31	4,428	1.8				31	4,390	- 2.2		280	9.1	31	4,335	- 5.6		277	14.7	31	4,103	-16.6	49	274	18.5
550	31	4,906	-16.9	47	278	12.2	31	5,123	- 2.8				31	5,076	- 6.1		278	11.6	31	5,009	-10.5		280	16.3	31	4,757	-20.3	45	278	17.5
500	31	5,610	-21.9	45	274	12.6	31	5,872	- 8.0				31	5,814	-11.2		278	13.1	31	5,737	-15.6		280	17.4	31	5,452	-25.1	43	278	18.1
450	31	6,386	-27.3	42	263	10.4	31	6,688	-14.1				31	6,619	-17.0		271	15.1	31	6,528	-21.3		276	19.4	31	6,218	-30.3	41	283	17.9
400	31	7,215	-33.0	40	288	9.3	31	7,565	-20.7				31	7,487	-23.7		279	16.7	31	7,382	-27.5		273	22.1	31	7,039	-35.7		256	19.6
350	31	8,141	-39.8				31	8,538	-28.3				31	8,447	-31.2		282	16.9	31	8,328	-34.7		280	24.4	31	7,954	-41.9			
300	31	9,177	-47.3				31	9,625	-36.4				31	9,521	-39.5		281	20.3	31	9,387	-42.3		285	29.1	31	8,982	-48.7			
250	31	10,361	-55.3				29	10,859	-45.5				31	10,744	-48.1		285	25.0	31	10,596	-50.6		282	29.2	31	10,166	-52.7			
200	31	11,765	-60.3				27	12,315	-54.2				31	12,190	-54.7		282	30.3	31	12,025	-57.4				29	11,598	-53.3			
175	31	12,602	-57.6				25	13,159	-59.0				31	13,038	-58.1		276	28.9	31	12,866	-58.3				29	12,456	-53.6			
150	31	13,579	-56.2				21	14,119	-65.1				30	13,995	-63.3				31	13,832	-60.3				29	13,448	-53.6			
125	31	14,736	-56.7				12	15,234	-71.6				29	15,096	-69.1				30	14,960	-63.7				29	14,616	-55.6			
100	31	16,148	-57.1				7	16,536	-78.2				28	16,412	-73.1				28	16,313	-66.4				27	16,035	-57.5			
80	29	17,563	-56.9										20	17,702	-73.4				27	17,659	-67.9				27	17,442	-58.1			
60	28	19,392	-55.8										17	19,404	-65.6				26	19,407	-63.4				26	19,254	-57.5			
50	25	20,550	-55.3										16	20,520	-62.0				24	20,537	-60.1				24	20,400	-56.5			
40	24	21,980	-54.2										15	21,905	-58.7				24	21,939	-57.3				19	21,827	-56.1			
30	22	23,833	-53.7										12	23,726	-55.1				17	23,770	-55.3				17	23,673	-55.3			
20	8	26,401	-53.3																6	26,404	-52.1				5	26,268	-50.6			
15	5	28,230	-52.6																											

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and meters per second. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

NASHVILLE, TENN. (997 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	177	9.0	67	286	0.7
1,000	31	149			359	1.9
950	31	575	8.2	51	237	3.7
900	31	1,018	5.6	55	244	5.7
850	31	1,483	3.5	53	258	7.5
800	31	1,974	1.6	47	275	8.8
750	31	2,496	- .9	42	285	10.3
700	31	3,039	- 3.7	40	286	12.8
650	31	3,622	- 7.1	45	287	14.0
600	30	4,242	-10.9	42	286	15.1
550	30	4,906	-15.1	40	284	18.3
500	29	5,617	-19.9	37	283	18.0
450	29	6,398	-25.3		292	21.1
400	29	7,235	-31.2		300	18.9
350	29	8,167	-37.9			
300	28	9,207	-45.4			
250	27	10,397	-53.1			
200	26	11,813	-56.3			
175	24	12,656	-56.1			
150	23	13,626	-56.3			
125	23	14,776	-59.1			
100	22	16,163	-61.5			
80	21	17,547	-60.6			
60	19	19,347	-59.1			
50	19	20,494	-57.4			
40	18	21,908	-56.3			
30	16	23,737	-55.3			
20	7	26,363	-52.6			

NOME, ALASKA (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	-12.4	74	87	1.6
1,000	31	78			62	1.7
950	31	475	-12.2	64	90	2.7
900	31	883	-12.7	60	87	2.6
850	31	1,319	-13.7	58	74	2.1
800	31	1,778	-15.7	54	57	1.7
750	31	2,266	-18.2	51	56	1.1
700	31	2,774	-20.9	45	49	1.0
650	31	3,323	-24.2	43	26	1.4
600	31	3,897	-27.7	39	51	.7
550	31	4,525	-31.6	37	93	.2
500	31	5,186	-35.5		341	.7
450	30	5,922	-39.9		284	1.9
400	30	6,707	-44.8		277	5.1
350	30	7,589	-50.0		277	6.4
300	30	8,586	-53.7		279	7.7
250	30	9,754	-53.8		276	6.4
200	30	11,193	-51.7		264	9.4
175	30	12,059	-51.1		265	11.1
150	29	13,062	-50.3		263	11.9
125	28	14,253	-50.0		265	13.0
100	28	15,712	-49.5		264	13.6
80	28	17,176	-48.4		268	18.7
60	27	19,078	-47.3		264	11.9
50	26	20,286	-47.5		258	12.0
40	21	21,807	-47.0		259	13.1
30	19	23,714	-46.6			
20						

NORFOLK, VA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	7.9	68	289	0.9
1,000	31	145	8.1	62	253	2.5
950	31	569	6.3	59	252	6.4
900	31	1,010	4.5	61	265	9.2
850	31	1,474	2.1	60	270	10.9
800	31	1,961	- .3	57	277	12.8
750	31	2,481	- 3.0	53	279	13.8
700	31	3,018	- 6.1	49	277	15.4
650	31	3,600	- 9.0	41	275	17.5
600	31	4,211	-12.5	36	276	20.4
550	30	4,870	-16.6		272	22.3
500	30	5,576	-21.4		274	24.2
450	30	6,352	-26.9		270	26.3
400	30	7,183	-32.9		271	30.2
350	30	8,110	-39.1		271	33.9
300	30	9,151	-45.6		270	38.2
250	29	10,347	-51.7		271	40.5
200	27	11,773	-54.9		272	40.6
175	26	12,627	-55.5		270	38.8
150	26	13,608	-56.1		271	37.8
125	26	14,760	-58.9		272	33.9
100	25	16,150	-60.7		269	27.2
80	20	17,519	-61.2		259	17.5
60	17	19,304	-59.1		263	13.6
50	16	20,453	-57.4		264	10.0
40	15	21,873	-56.6		257	5.8
30	12	23,687	-56.1		263	7.7
20	8	26,281	-54.7			

NORTH PLATTE, NEBR. (916 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	848	2.0	61	41	0.6
1,000	31	125				
950	31	550				
900	31	987	3.4	53	335	.7
850	31	1,450	2.1	46	303	4.2
800	31	1,937	- .2	44	303	7.8
750	31	2,456	- 3.5	43	306	11.4
700	31	2,992	- 6.9	43	306	13.4
650	31	3,570	-10.7	43	305	14.9
600	31	4,177	-14.7	44	301	15.6
550	31	4,832	-18.8	46	294	16.5
500	31	5,533	-23.9	46	289	16.7
450	31	6,299	-29.8	39	283	18.8
400	31	7,121	-36.3	38	276	20.4
350	31	8,035	-42.6		272	22.3
300	31	9,059	-49.5		270	22.2
250	30	10,242	-55.0			
200	28	11,660	-55.7			
175	28	12,513	-54.5			
150	27	13,490	-54.8			
125	27	14,652	-56.3			
100	26	16,064	-57.3			
80	26	17,470	-57.8			
60	24	19,290	-56.9			
50	24	20,446	-56.2			
40	20	21,865	-55.9			
30	14	23,708	-55.5			
20						

OAKLAND, CALIF. (1021 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	11.7	67	287	3.5
1,000	31	176	11.0	62	292	4.1
950	31	608	9.5	55	309	4.4
900	31	1,050	8.3	47	317	4.6
850	31	1,520	6.3	39	316	4.5
800	31	2,015	4.3	34	310	4.4
750	31	2,547	1.8	24	304	5.5
700	31	3,091	- 1.2	28	303	6.9
650	31	3,683	- 5.0	29	305	8.1
600	31	4,302	- 9.1	29	305	9.6
550	31	4,973	-13.9	29	298	10.7
500	31	5,685	-19.3	33	295	12.2
450	31	6,466	-25.4		290	13.0
400	31	7,302	-32.0		287	13.7
350	31	8,231	-39.2		285	16.0
300	30	9,269	-47.2		284	18.2
250	30	10,451	-55.9		284	20.8
200	30	11,846	-62.3		276	22.8
175	30	12,673	-60.4		275	23.1
150	30	13,637	-59.2		272	22.4
125	30	14,777	-60.3		272	19.8
100	30	16,163	-61.7		276	15.9
80	28	17,540	-62.4		283	11.0
60	25	19,322	-60.6		293	5.8
50	22	20,466	-59.3		332	3.2
40	19	21,867	-57.2		10	4.3
30	14	23,707	-55.6		51	6.4
20	8	26,274	-54.2			

OKLAHOMA CITY, OKLA. (969 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	391	9.6	48	117	1.1
1,000	31	129				
950	31	561	11.6	38	131	2.1
900	31	1,010	9.5	37	252	1.6
850	31	1,481	7.4	35	269	4.1
800	31	1,979	5.4	35	269	7.4
750	31	2,513	2.8	32	275	10.5
700	31	3,058	- .6	30	280	13.1
650	31	3,652	- 4.4	27	284	15.4
600	31	4,271	- 8.7		276	15.8
550	31	4,943	-13.4		280	17.6
500	31	5,657	-18.4		279	17.8
450	31	6,445	-24.0		283	19.1
400	31	7,282	-30.0		280	21.8
350	31	8,219	-37.0		279	22.9
300	31	9,265	-44.8		286	24.7
250	31	10,461	-52.7		290	23.9
200	31	11,880	-57.5			
175	31	12,723	-57.4			
150	31	13,694	-58.7			
125	30	14,834	-61.4			
100	27	16,206	-63.9			
80	26	17,572	-63.6			
60	24	19,355	-60.4			
50	24	20,496	-58.5			
40	23	21,901	-57.2			
30	18	23,731	-55.8			
20	10	26,337	-53.7			

OMAHA, NEBR. (968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	403	1.6	62	17	1.5
1,000	31	135				
950	31	555	2.4	58	353	1.4
900	31	986	.5	60	299	3.3
850	31	1,444	- .9	57	299	6.8
800	31	1,926	- 2.7	55	301	8.8
750	31	2,443	- 5.0	52	301	10.0
700	31	2,975	- 7.8	49	296	12.0
650	31	3,551	-11.3	48	290	14.0
600	31	4,157	-15.2	45	287	16.8
550	31	4,810	-19.4	41	286	18.2
500	31	5,510	-24.2	41	287	20.4
450	31	6,276	-29.6	40	287	23.3
400	31	7,099	-35.4	39	287	25.7
350	30	8,011	-41.7		283	29.4
300	28	9,029	-48.0		281	32.6
250	28	10,215	-53.1		277	36.1
200	27	11,648	-53.8		277	32.8
175	27	12,506	-53.8		275	30.7
150	27	13,495	-53.5		274	28.1
125	25	14,668	-54.7		276	24.5
100	23	16,077	-56.5		279	20.9
80	22	17,491	-56.8		279	17.3
60	19	19,326	-56.5		277	10.5
50	17	20,481	-55.6		292	11.9
40	16	21,902	-55.8		290	9.3
30	12	23,740	-54.6			
20						

PHOENIX, ARIZ. (974 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	341	19.2	22	244	0.8
1,000	31	111				
950	31	559	21.3		270	3.0
900	31	1,019	17.9		277	4.5
850	31	1,503	14.0		282	3.7
800	31	2,009	9.9		287	3.2
750	31	2,545	5.8		295	2.8
700	31	3,101	1.7		295	4.0
650	31	3,700	- 2.3		290	5.5
600	31	4,323	- 6.7		284	7.8
550	31	5,000	-11.0		280	10.9
500	31	5,723	-16.0		279	13.6
450	31	6,513	-21.5		277	14.9
400	31	7,365	-28.0		280	17.9
350	31	8,309	-35.2		281	19.7
300	31	9,365	-43.0		280	23.4
250	31	10,570	-52.0		279	27.6
200	31	11,989	-59.0		271	28.5
175	31	12,826	-59.1		270	27.9
150	31	13,792	-59.7		277	27.8
125	30	14,924	-62.5		271	24.0
100	30	16,291	-64.9		273	18.2
80	28	17,648	-65.4			
60	24	19,405	-62.4			
50	23	20,535	-60.2			
40	21	21,933	-57.8			
30	10	23,744	-55.8			
20						

PITTSBURGH, PA. (974 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	353	2.2	69	282	1.9
1,000	30	135				
950	30	555	.8	64	275	2.5
900	30	984	- .9	66	259	6.6
850	30	1,438	- 3.3	65	259	9.4
800	30	1,915	- 5.5	63	269	11.9
750	30	2,427	- 7.6	58	272	14.5
700	30	2,953	-10.3	61	274	16.9
650	30	3,530	-13.2	56	274	19.4
600	29	4,122	-17.0	54	273	20.9
550	29	4,775	-21.3	50	274	21.9
500	29	5,466	-26.0	44	276	24.1
450	29	6,227	-31.4		281	27.2
400	29	7,044	-37.0		278	31.3
350	29	7,954	-43.4		277	32.7
300	29	8,977	-49.2		277	34.9
250	29	10,160	-53.5		283	31.7
200	25	11,591	-55.2		282	25.5
175	25	12,445	-54.1		278	23.1
150	25	13,432	-55.1		274	22.8
125	22	14,580	-56.6		275	19.1
100	20	15,976	-58.1		275	19.1
80	20	17,380	-58.3		270	14.0
60	19	19,195	-57.9		279	6.5
50	18	20,342	-57.4		273	5.7
40	17	21,758	-56.5		289	6.1
30	6	23,601	-56.0			
20						

PORTLAND, ME. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	20	- 3.5	73	322	2.4
1,000	30	129			323	3.3
950	30	534	- 4.1	57	321	5.2
900	30	959	- 6.6	58	305	5.8
850	30	1,403	- 8.7	59	299	6.5
800	30	1,871	-10.1	52	291	8.6
750	30	2,371	-11.7	53	282	10.9
700	30	2,892	-14.0	52	278	12.9
650	30	3,456	-16.8	51	272	15.7
600	30	4,049	-20.1	51	269	18.6
550	30	4,690	-23.8	48	268	21.8
500	30	5,378	-28.5	46	266	24.0
450	30	6,129	-33.6	45	265	26.7
400	30	6,943	-39.1		265	29.0
350	30	7,845	-45.1		262	34.7
300	30	8,862	-49.7		262	38.7
250	30	10,044	-52.5		271	41.3
200	29	11,484	-52.4		269	36.5
175	29	12,348	-51.4		268	32.3
150	29	13,345	-52.7		266	29.3
125	29	14,518	-54.0		265	25.2
100	28	15,947	-55.5		262	22.0
80	23	17,362	-56.7		259	17.2
60	22	19,182	-56.5		252	14.4
50	19	20,326	-56.2		247	10.2
40	17	21,763	-55.9		246	7.8
30	9	23,562	-56.0			
20						

RAPID CITY, S. DAK. (903 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	966	- 0.2	67	346	2.2
1,000	31	129				
950	31	547				
900	31	985			342	1.7
850	31	1,447	.1	51	314	4.9
800	31	1,929	- 2.9	51	308	8.1
750	31	2,440	- 6.1	55	299	10.3
700	31	2,974	- 9.2	54	293	12.2
650	31	3,544	-12.8	53	296	13.8
600	31	4,149	-17.0	54	291	14.9
550	31	4,792	-21.8	56	290	16.4
500	31	5,490	-27.0	53	289	17.7
450	31	6,249	-32.8	52	289	18.9
400	31	7,058	-38.6		287	22.6
350	31	7,963	-45.0		291	25.2
300	30	8,978	-51.4		285	25.4
250	28	10,158	-56.3		287	27.9
200	24	11,577	-57.3		286	28.1
175	24	12,424	-55.6		287	25.9
150	24	13,407	-55.4		285	21.6
125	19	14,579	-56.0		286	20.4
100	9	16,030	-56.4			
80						
60						
50						
40						
30						
20						

ST. CLOUD, MINN. (978 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	316	- 5.0	77	349	0.3
1,000	31	136				
950	31	545	- 4.6	68	317	.5
900	31	966	- 5.4	60	269	1.5
850	31	1,413	- 6.6	53	303	3.3
800	31	1,886	- 7.9	52	297	5.3
750	31	2,388	-10.0	52	296	7.1
700	31	2,915	-12.7	52	296	8.8
650	31	3,482	-16.0	53	292	10.4
600	30	4,072	-20.1	50	288	11.9
550	30	4,715	-24.2	50	286	13.4
500	30	5,400	-28.8	44	290	15.8
450	30	6,154	-33.9	39	289	17.0
400	30	6,961	-39.9		282	18.0
350	30	7,862	-45.7		286	16.9
300	30	8,877	-51.1		272	16.0
250	30	10,051	-54.6		270	18.5
200	29	11,487	-53.1		270	20.3
175	28	12,353	-52.2		271	23.6
150	27	13,343	-52.4			
125	26	14,530	-53.5			
100	26	15,962	-54.2			
80	26	17,390	-55.1			
60	25	19,230	-54.9			
50	24	20,396	-54.6			
40	20	21,837	-55.2			
30	13	23,700	-55.1			
20						

ST. PAUL IS., ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	- 6.7	84	41	2.3
1,000	31	44			50	3.7
950	31	449	- 8.8	76	75	1.7
900	31	861	- 9.5	69	193	.3
850	31	1,300	-11.5	65	290	.5
800	31	1,763	-13.6	62	299	2.8
750	31	2,262	-15.9	59	283	3.0
700	31	2,769	-18.6	58	271	3.8
650	31	3,332	-21.3	51	277	5.2
600	31	3,906	-24.2	48	267	5.8
550	31	4,548	-27.6	47	262	7.8
500	31	5,216	-31.7	48	264	9.5
450	31	5,967	-36.3		261	11.8
400	31	6,762	-41.3		249	11.0
350	31	7,656	-47.0		251	11.4
300	30	8,671	-51.3		245	12.6
250	29	9,842	-51.7		241	13.8
200	29	11,296	-48.9		233	14.2
175	29	12,173	-48.2		235	16.1
150	29	13,188	-47.6		234	15.6
125	28	14,388	-47.8		245	15.2
100	28	15,859	-47.6		244	15.2
80	27	17,335	-47.0		245	15.3
60	26	19,242	-46.4		248	13.5
50	26	20,453	-46.0		263	12.5
40	24	21,940	-45.2			
30	18	23,878	-43.2			
20						

SAN ANTONIO, TEX. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	243	17.3	51	113	2.2
1,000	30	139				
950	30	580	16.0	54	120	5.6
900	30	1,035	14.4	54	158	4.2
850	30	1,516	12.3	49	205	3.7
800	30	2,023	10.6	35	249	5.3
750	30	2,566	8.6	26	270	7.3
700	30	3,125	5.6		278	9.8
650	30	3,725	1.3		280	12.7
600	30	4,364	- 3.0		282	14.9
550	30	5,043	- 7.5		277	17.5
500	30	5,781	-12.7		275	19.1
450	30	6,581	-18.6		275	22.4
400	30	7,443	-25.0		284	25.1
350	30	8,398	-32.1		281	27.9
300	30	9,467	-40.4			
250	30	10,684	-49.7			
200	30	12,112	-58.1			
175	30	12,949	-59.7			
150	29	13,905	-62.8			
125	27	15,013	-66.2			
100	23	16,346	-69.4			
80	20	17,673	-70.2			
60	16	19,396	-65.7			
50	15	20,512	-61.2			
40	15	21,907	-57.9			
30	11	23,719	-55.6			
20						

SAN JUAN, P. R. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	23.1	83	87	3.4
1,000	31	155	23.0	77	84	6.6
950	31	604	20.0	78	88	9.1
900	31	1,066	16.9	78	94	7.8
850	31	1,551	13.9	76	97	7.2
800	31	2,061	11.6	64	98	6.3
750	31	2,604	10.7	40	94	4.7
700	31	3,171	7.9	36	91	2.9
650	31	3,785	4.8	31	97	1.9
600	30	4,426	1.1		136	1.1
550	30	5,122	- 3.0		214	1.9
500	30	5,868	- 7.9		254	2.3
450	30	6,687	-13.7		244	3.8
400	30	7,562	-20.2		257	6.6
350	30	8,537	-27.6		266	10.2
300	30	9,6 7	-35.6		266	15.2
250	30	10,871	-43.9		262	19.0
200	30	12,336	-54.3		262	19.3
175	30	13,180	-60.1		269	16.7
150	30	14,127	-66.2		268	12.4
125	30	15,214	-72.8		276	7.7
100	29	16,501	-78.7		272	4.4
80	27	17,767	-79.0		225	1.6
60	26	19,440	-69.8		168	1.9
50	26	20,538	-64.9		143	1.7
40	25	21,916	-59.4		122	1.9
30	23	23,738	-55.1		63	5.1
20	6	26,369	-50.1			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and meters per second. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

SANTA MARIA, CALIF. (1011 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	71	10.4	71	312	2.5
1,000	31	[illegible]	10.5	71	331	3.2
950	31	599	11.6	[illegible]	[illegible]	5.6
900	31	1,044	10.5	41	12	[illegible]
850	31	1,518	8.6	34	4	5.4
800	31	2,018	6.9	24	356	4.8
750	31	2,554	4.1		335	4.6
700	31	3,101	1.3		318	5.6
650	31	3,698	- 2.6		311	6.0
600	31	4,325	- 6.8		304	6.8
550	31	4,998	-11.4		293	6.9
500	31	5,721	-16.8		289	9.3
450	31	6,509	-22.8		280	10.7
400	31	7,357	-29.4		285	11.5
350	31	8,293	-36.9		288	11.6
300	31	9,340	-45.1		286	14.4
250	31	10,533	-53.8		275	18.0
200	31	11,942	-60.0		270	21.1
175	31	12,777	-58.9		266	21.9
150	31	13,711	-58.7		269	22.2
125	31	14,883	-60.9		274	19.2
100	31	16,263	-62.9		273	13.4
80	31	17,634	-62.8		278	9.8
60	29	19,413	-60.5		329	2.8
50	29	20,553	-58.7		31	2.4
40	25	21,955	-57.0		51	3.9
30	8	23,792	-55.3			
20						

S. STE. MARIE, MICH. (990 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	- 6.0	81	322	0.7
1,000	30	143				
950	30	547	- 5.8	59	322	1.8
900	30	967	- 8.2	61	341	2.3
850	30	1,409	-10.4	60	319	2.6
800	30	1,873	-12.1	57	315	4.1
750	30	2,369	-14.1	50	311	6.2
700	30	2,886	-16.6	48	309	8.0
650	30	3,447	-19.0	47	303	9.7
600	30	4,032	-22.0	44	296	10.8
550	30	4,670	-25.9	41	296	12.8
500	29	5,351	-30.4	40	298	15.7
450	29	6,099	-35.3		297	18.1
400	29	6,901	-40.8		291	21.0
350	29	7,800	-46.9		289	24.1
300	27	8,807	-52.5		279	27.2
250	22	9,981	-54.8		278	30.5
200	19	11,399	-51.9		282	28.9
175	18	12,260	-50.9		281	25.6
150	16	13,271	-50.7		285	23.2
125	14	14,458	-52.2		283	21.4
100	12	15,897	-53.1		280	18.4
80	11	17,324	-53.9			
60	8	19,156	-53.8			
50	8	20,329	-52.8			
40	5	21,759	-53.7			
30						
20						

SHREVEPORT, LA. (1008 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	77	13.6	66	152	1.3
1,000	31	111			123	.8
950	31	578	12.3	61	191	4.2
900	31	1,024	10.1	62	217	5.7
850	31	1,498	8.3	58	243	7.0
800	31	1,997	6.7	43	263	8.4
750	31	2,531	4.2	35	270	11.3
700	31	3,083	1.3	30	270	12.8
650	31	3,680	- 2.4		267	14.9
600	31	4,305	- 6.3		265	17.2
550	31	4,984	-10.8		266	19.0
500	31	5,704	-15.9		266	21.1
450	31	6,496	-21.8		267	24.3
400	31	7,345	-28.1		268	27.1
350	31	8,288	-35.3		266	31.7
300	31	9,343	-43.1		266	36.2
250	31	10,546	-51.8		269	39.4
200	29	11,975	-58.0		267	43.2
175	29	12,813	-59.0		267	43.2
150	25	13,772	-60.5		267	36.3
125	15	14,888	-63.3		264	28.9
100	8	16,229	-65.4			
80	8	17,587	-64.9			
60	5	19,378	-60.5			
50						
40						
30						
20						

SPOKANE, WASH. (931 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	2.5	72	212	3.5
1,000	31	142				
950	31	560				
900	31	999	1.9	63	220	6.8
850	31	1,458	- 1.2	59	242	9.1
800	31	1,938	- 4.5	60	255	10.6
750	31	2,451	- 7.6	58	260	11.1
700	31	2,977	-11.1	57	263	11.2
650	31	3,552	-14.4	56	265	12.7
600	31	4,145	-18.1	56	270	14.1
550	31	4,790	-22.7	52	273	15.8
500	31	5,482	-27.5	54	277	17.4
450	31	6,237	-33.0	56	278	18.2
400	31	7,050	-38.6	62	284	20.1
350	31	7,955	-44.7		289	21.9
300	31	8,972	-50.7		303	24.2
250	31	10,144	-55.7		303	26.1
200	31	11,560	-56.3		299	23.4
175	29	12,424	-53.9		302	21.0
150	29	13,414	-53.7		298	20.2
125	29	14,584	-53.9		301	17.6
100	26	16,003	-54.8		296	15.9
80	26	17,432	-54.0		303	15.1
60	23	19,278	-53.5		312	11.9
50	22	20,456	-52.9		320	10.2
40	19	21,877	-52.8		327	9.6
30	12	23,776	-51.4		342	7.7
20	6	26,462	-49.1			

TAMPA, FLA. (1019 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	16.3	78	19	0.4
1,000	31	171	17.5	70	276	.3
950	31	611	15.8	56	208	1.7
900	31	1,067	13.6	52	201	1.7
850	31	1,546	10.8	48	224	2.6
800	31	2,050	8.7	37	261	4.6
750	31	2,590	6.5		264	6.9
700	31	3,145	4.0		267	8.8
650	31	3,752	.7		269	11.2
600	31	4,383	- 3.2		277	12.1
550	31	5,066	- 7.0		278	14.4
500	31	5,803	-12.2		277	16.5
450	31	6,612	-18.0		279	19.8
400	31	7,470	-24.5		283	20.5
350	31	8,428	-32.0		282	21.1
300	31	9,498	-40.3		280	22.7
250	31	10,717	-49.2		278	28.1
200	31	12,154	-55.7		281	33.8
175	28	12,984	-58.2		270	33.1
150	26	13,958	-62.1			
125	25	15,067	-67.3			
100	23	16,391	-71.3			
80	20	17,707	-72.9			
60	17	19,412	-65.9			
50	17	20,530	-61.6			
40	17	21,921	-58.3			
30	15	23,744	-55.4			
20	10	26,350	-52.9			

TATOOSH ISLAND, WASH. (1013 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	5.2	82	202	2.9
1,000	31	134			197	2.9
950	31	551	2.7	74	207	6.2
900	31	986	.0	74	218	8.0
850	31	1,442	- 2.7	72	231	8.1
800	31	1,920	- 5.5	67	239	9.4
750	31	2,427	- 8.4	59	246	10.6
700	31	2,955	-11.7	54	256	12.0
650	31	3,525	-15.2	53	261	13.8
600	31	4,119	-18.9	49	265	15.6
550	31	4,765	-22.9	43	268	19.4
500	31	5,454	-27.1	43	267	24.9
450	31	6,212	-32.3	45	259	27.7
400	31	7,027	-37.5	48	255	29.2
350	31	7,935	-43.7		252	28.5
300	31	8,955	-50.1		262	29.7
250	30	10,121	-54.7		268	26.9
200	29	11,545	-55.2		275	24.2
175	29	12,400	-53.6		272	21.9
150	28	13,398	-52.7		270	18.1
125	28	14,574	-53.1		282	14.8
100	27	16,011	-53.9		277	14.0
80	25	17,446	-53.2		281	11.4
60	25	19,303	-52.4		297	4.5
50	25	20,480	-52.0		325	3.2
40	22	21,919	-51.6		340	5.5
30	19	23,773	-51.6			
20						

TOPEKA, KANS. (984 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	270	6.3	52	331	1.1
1,000	31	136				
950	31	558	6.1	47	350	.9
900	31	999	3.8	48	268	2.6
850	31	1,461	1.6	47	270	6.0
800	31	1,948	- .5	42	278	9.0
750	31	2,469	- 3.2	43	283	11.0
700	31	3,004	- 5.5	42	281	12.5
650	31	3,585	- 9.1	39	275	14.2
600	30	4,194	-13.1	37	276	17.5
550	30	4,852	-17.8	39	275	19.2
500	30	5,556	-22.7		276	20.8
450	30	6,325	-28.3		279	22.4
400	30	7,154	-34.1		279	25.7
350	29	8,075	-40.3		281	28.6
300	29	9,110	-46.7		272	33.5
250	28	10,296	-53.5		274	33.9
200	25	11,715	-56.6		267	35.5
175	25	12,562	-55.8		268	33.2
150	23	13,543	-56.0		269	31.0
125	22	14,699	-57.6		266	27.9
100	20	16,087	-59.0		266	25.5
80	19	17,480	-59.9		264	17.3
60	17	19,287	-58.5		268	10.9
50	15	20,440	-57.8		261	7.7
40	14	21,851	-56.6		272	4.5
30	11	23,688	-55.6			
20	8	26,298	-54.6			

TUCSON, ARIZONA (925 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	781	17.6	15	287	2.2
1,000	31	106				
950	31	552				
900	31	1,018	17.9		300	4.7
850	31	1,503	14.3		288	4.8
800	31	2,010	10.3		256	4.3
750	31	2,551	6.4		239	4.5
700	31	3,103	2.3		243	4.5
650	31	3,699	- 1.7		262	5.9
600	31	4,329	- 5.7		270	9.4
550	31	5,005	-10.1		272	12.7
500	30	5,733	-15.6		275	14.9
450	30	6,519	-21.5		271	17.8
400	30	7,376	-28.0		267	20.9
350	30	8,321	-34.9		265	25.4
300	30	9,379	-42.7		264	31.0
250	30	10,584	-51.8		265	31.9
200	30	12,002	-59.3		260	36.8
175	30	12,837	-59.4		265	37.4
150	28	13,796	-60.3		261	33.9
125	26	14,923	-63.6		264	28.8
100	26	16,283	-66.2		264	23.5
80	26	17,634	-66.2		268	15.2
60	23	19,382	-64.5		278	7.2
50	22	20,500	-62.0		282	3.0
40	19	21,893	-57.8		358	1.4
30	16	23,705	-56.0		44	2.2
20	5	26,324	-52.1			

WASHINGTON, D. C. (1006 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	88	4.6	60	256	0.4
1,000	31	140			311	.7
950	31	559	3.9	55	264	3.8
900	31	995	1.6	59	266	7.8
850	31	1,453	- .8	59	273	10.4
800	31	1,936	- 2.7	61	273	11.7
750	31	2,451	- 5.0	61	277	13.8
700	31	2,985	- 7.6	56	283	14.7
650	31	3,561	-10.8	50	281	17.3
600	31	4,168	-14.6	43	280	19.0
550	31	4,822	-18.9	40	280	19.0
500	31	5,523	-23.8		281	21.3
450	31	6,293	-29.0		282	23.8
400	31	7,116	-34.6	43	282	28.7
350	31	8,036	-41.0		282	27.8
300	31	9,070	-47.0		280	28.1
250	31	10,260	-52.0		281	30.5
200	30	11,699	-54.7		277	27.8
175	30	12,553	-54.5		278	29.2
150	30	13,537	-55.1		277	28.2
125	27	14,703	-57.4		283	26.0
100	26	16,103	-58.3			
80	21	17,507	-60.6			
60	17	19,290	-59.9			
50	14	20,442	-57.7			
40	14	21,853	-56.6			
30	12	23,689	-56.3			
20	7	26,275	-53.7			

YAKUTAT, ALASKA (1007 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	12	- 0.8	76	117	3.0
1,000	31	64			109	2.5
950	31	473	- 2.7	63	119	4.6
900	31	899	- 5.4	63	135	3.6
850	31	1,345	- 8.3	66	153	2.0
800	31	1,814	-11.0	66	202	1.8
750	31	2,313	-14.0	60	219	2.3
700	31	2,827	-17.3	57	226	3.0
650	31	3,388	-20.7	56	238	4.2
600	31	3,966	-24.6	53	256	5.0
550	31	4,597	-28.8	52	259	5.7
500	30	5,260	-34.0	51	255	5.8
450	30	5,994	-39.0		242	6.4
400	30	6,789	-44.5		253	6.5
350	30	7,671	-50.4		260	6.8
300	29	8,674	-54.1		265	7.1
250	25	9,862	-53.8		255	4.6
200	20	11,265	-50.1		284	6.5
175	17	12,158	-49.4		280	5.3
150	15	13,172	-48.3		278	4.5
125	11	14,346	-46.0			
100	9	15,795	-44.5			
80	7	17,323	-43.9			
60	6	19,300	-43.6			
50						
40						
30						
20						

YUMA, ARIZONA (1001 MB.)

Standard pressure surface mb.	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,005	22.2	14	280	1.4
1,000	31	116			303	1.2
950	31	562	19.8		291	3.6
900	31	1,021	16.2		293	3.4
850	31	1,503	12.5		300	3.7
800	31	2,008	9.0		305	4.0
750	31	2,545	5.4		298	4.9
700	31	3,098	2.1		294	5.1
650	31	3,695	- 1.6		284	6.1
600	31	4,324	- 5.8		282	8.4
550	31	5,002	-10.6		276	9.9
500	31	5,726	-16.0		279	12.5
450	30	6,513	-22.0		270	14.6
400	28	7,365	-28.6		273	17.3
350	27	8,306	-35.9		264	19.7
300	26	9,356	-44.0		268	24.1
250	25	10,557	-53.0		263	28.9
200	24	11,968	-59.9		262	33.0
175	24	12,799	-60.2		252	32.4
150	24	13,758	-60.8		264	29.4
125	18	14,890	-63.2		256	26.9

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

See note regarding discontinuance of Rawin and Pibal Data (Tables 21 and 22) in the January issue of this Publication.

The wind speeds should be "meters per second" as read in the reference notes in the January and February issues.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and The resultant of wind speed are biased toward lower wind speeds as meters per second. the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20 *Air Force Data for November 1955

Standard pressure surface (mb)	1/ DENVER, COLO (830 MB) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	2/FT. WORTH, TEXAS ([illegible] MB) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	OGDEN, UTAH ([illegible] MB) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	RANTOUL, ILL. ([illegible] MB) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,661	0.3	52			30	178	12.8	[illegible]			30	1,450	1.6	[illegible]			30	227	[illegible]	72		
1,000	30	132					30	142					30	162					30	[illegible]				
950	30	560					30	571	12.6	[illegible]			30	[illegible]					30	[illegible]	[illegible]	[illegible]		
900	30	1,006					30	1,025	11.1	40			30	1,030					30	980	1.3	[illegible]		
850	30	1,470					30	1,501	9.9	37			30	[illegible]					30	[illegible]	.5	62		
800	30	1,960	2.4	46			30	2,003	8.5	37			30	[illegible]	1.1	51			30	1,925		56		
750	30	2,485	.8	46			30	2,540	6.2	35			30	[illegible]	- 2.4	[illegible]			30	2,443	[illegible]	51		
700	30	3,032	- 2.1	44			30	3,097	3.4	33			30	3,043	- 5.9	58			30	[illegible]	[illegible]	50		
650	30	3,622	- 5.8	42			30	3,697	.0				30	3,624	- 9.0	57			30	[illegible]	- 7.6	47		
600	30	4,239	- 9.7	43			30	4,330	- 3.8				30	4,236	-12.4	57			30	[illegible]	[illegible]	[illegible]		
550	30	4,907	-14.5	43			30	5,011	- 8.2				30	4,899	-16.5	56			30	4,847	-15.6	[illegible]		
500	30	5,620	-19.3	44			30	5,744	-13.6				30	5,605	-21.0	48			30	5,557	-20.1	40		
450	30	6,400	-24.8	42			30	6,541	-19.5				30	6,382	-25.8	44			30	[illegible]	-25.5	[illegible]		
400	30	7,241	-30.9				30	7,399	-26.3				30	[illegible]	-31.1	44			30	7,174	-31.4			
350	30	8,175	-37.4				30	8,350	-33.6				30	8,151	-38.3				30	8,106	-38.1			
300	30	9,219	-45.4				30	9,413	-41.8				30	9,193	-46.1				30	9,150	[illegible]			
250	30	10,411	-53.8				30	10,624	-50.4				30	10,384	-53.6				30	10,350	-51.2			
200	30	11,820	-59.7				30	12,050	-58.8				30	11,798	-59.3				30	[illegible]	-56.2			
175	30	12,651	-61.0				30	12,880	-62.1				30	12,631	-60.1				30	12,623	[illegible]			
150	30	13,606	61.6				30	13,827	-63.8				29	13,600	-60.5				30	[illegible]	-59.1			
125	30	14,732	-62.2				30	14,938	-66.5				28	14,737	-61.5				30	14,730	-60.2			
100	30	16,112	-61.8				29	16,277	-68.0				27	16,111	-61.8				30	16,119	-60.9			
80	30	17,491	-61.9				28	17,620	-67.8				22	17,489	[illegible]				30	17,506	-60.8			
60	30	19,270	-60.5				25	19,360	-64.4				16	19,291	-60.9				23	19,293	[illegible]			
50	30	20,406	-60.2				23	20,473	61.4				13	20,423	-59.7				18	[illegible]	-58.1			
40	29	21,805	-58.7				22	21,862	-57.9				9	21,811	-59.3				13	[illegible]	-56.3			
30	27	23,620	-57.4				20	23,688	-55.6										9	23,691	-55.3			
20	22	26,197	-55.5				18	26,300	-51.9										5	26,264	-55.3			
15	18	28,044	-53.9				13	28,167	-50.3															

1/ Continued

10 mb., 9 obs., 30,712 m., 51.3°C

2/ Continued

10 mb., 7 obs., [illegible] m., [illegible]°C

* December data for the above Air Force stations will be included in the April issue of this publication.

Note: All observations scheduled at 0300, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature and humidity data may be missing for one or more pressure surfaces of some observations. The temperature values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by radiosondes, dynamic height (geopotential) in units of [illegible] dynamic meter, temperature in degrees centigrade and relative humidity in percent.

RAWIN DATA

Average monthly resultant winds

Table 22 *Air Force Data for November 1955

Altitude (meters) m s l	Denver, Colo. (1,661 m)			Ft Worth, Tex. (178 m)			Ogden, Utah (1,450 m)			Rantoul, Ill. (227 m)		
	No of observations	Direction	Speed	No of observations	Direction	Speed	No of observations	Direction	Speed	No of observations	Direction	Speed
Surface	30	144	1.3	30	50	9.1	29	60	1.2	30	254	2.6
500			---	30	182	3.3		- -	- -	30	254	5.8
1,000		-		30	214	4.9	-	-	--	30	265	8.0
1,500	-	-	- -	30	250	5.5	28	62	1.3	30	266	8.3
2,000	26	254	2.5	30	260	7.3	28	228	3.4	30	270	10.1
2,500	25	272	4.9	30	261	9.2	26	260	5.9	30	274	13.3
3,000	25	274	7.7	30	261	10.9	26	271	8.4	30	272	15.2
4,000	26	285	11.8	30	265	13.1	29	286	12.9	30	273	19.0
5,000	28	287	15.1	30	268	16.1	29	285	16.6	30	270	22.3
6,000	28	289	19.1	30	268	18.5	29	286	19.9	30	269	26.7
8,000	30	284	25.1	30	267	24.0	28	291	25.8	30	266	31.6
10,000	30	282	29.9	30	264	32.8	28	292	31.4	30	267	35.6
12,000	30	279	30.3	29	263	36.4	27	287	28.4	28	269	34.4
14,000	30	273	29.9	29	263	32.8	25	287	22.5	29	267	33.5
16,000	30	277	22.2	28	261	26.3	23	287	19.1	29	269	25.2
18,000	30	273	12.7	26	260	20.3	17	295	11.0	24	270	16.6
20,000	29	278	10.6	23	265	11.4	12	305	6.4	18	264	13.6
22,000	28	277	9.6	20	255	10.7						
24,000	26	269	9.3	18	255	11.4						
26,000	23	272	13.7	17	259	15.3						
28,000	17	262	20.0	13	266	25.6						

* December data for the above Air Force stations will be included in the April 1956 issue of this publication

These free-air resultant winds are based on rawin observations made near 0300 G.C.T., directions in degrees from north (N - 360°, E - 90°, S - 180°, W - 270°), speeds in meters per second.

Note: Resultants prepared from rawins at high altitudes are biased toward lower wind speeds. Values appearing in this table should therefore be used with caution when the number of observations missing is greater than three. See note following Table 22 in the January 1950 issue of the CLIMATOLOGICAL DATA, National Summary.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun

Date	Sun's zenith distance								
	A M				0.0°	P M			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	ALBUQUERQUE, N. MEX.								
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Mar.									
1	----	----	----	----	Cloudy		----	----	-
2	0.99	1.09	1.18	1.31	1.47	1.31	1.14	1.09	0.93
3	.94	1.04	1.15	1.29	1.41	1.28	1.14	1.01	.90
4%	----	----	----	----	----	----	----	----	----
5	.94	1.04	1.16	1.30	1.42	D.93	D.20	D.21	D.21
6	.81	.96	1.11	1.34	D.46	D.35	D.14	D.12	D.14
7	.87	.95	1.07	1.26	1.39	1.22	1.09	1.00	.97
8	----	----	----	----	----	----	1.06	1.00	.97
9	.93	1.04	1.16	1.30	----	----	----	----	----
10	.87	.99	1.14	1.29	----	----	D.90	D.73	D.65
11	----	----	----	----	Cloudy	----	----	----	----
12	----	----	----	----	----	D.84	----	----	----
13	----	----	D.94	D1.04	D1.25	D.97	D.93	D.60	D.66
14	----	----	----	----	1.28	1.02	----	----	----
15	----	----	----	--	1.35	1.27	1.09	.97	.88
16	.97	1.07	1.17	1.28	1.43	1.29	1.15	1.05	.97
17	.94	1.02	1.15	1.28	----	----	----	----	----
18	.83	.95	1.04	1.23	D1.24	1.27	1.14	1.02	.95
19	.86	.93	1.06	1.20	1.24	1.06	D.73	----	----
20	.70	.85	.99	1.14	1.26	----	----	----	----
21	.75	.98	1.01	1.19	1.28	1.11	.99	D.86	D.75
22	----	----	----	----	Cloudy	----	----	----	----
23	.71	.78	.91	1.11	1.26	1.13	1.01	D.81	D.69
24%	----	----	----	----	----	----	----	----	----
25	----	----	----	----	Cloudy	----	----	----	----
26%	----	----	----	----	----	----	----	----	----
27%	----	----	----	----	----	----	----	----	----
28%	----	----	----	----	----	----	----	----	----
29%	----	----	----	----	----	----	----	--	-
30	----	----	----	----	Cloudy	----	----	-	----
31	----	----	----	----	Cloudy	----	----	-	----
Averages	.87	.98	1.07	1.24	1.27	1.08	.91	.81	.71
	MADISON, WIS.								
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Mar.									
2	----	----	----	K1.28	KS1.42	----	----	----	----
3	----	----	----	----	----	KS1.36	KS1.21	KS1.04	KS0.98
11	KS1.00	KS1.10	KS1.28	KS1.42	----	----	----	----	----
12	----	----	----	----	KS1.49	KS1.38	----	----	----
13	----	----	----	K1.14	K1.42	KS1.29	KM1.14	----	----
14	----	----	----	----	----	KS1.33	----	----	----
15	KS.92	----	----	----	----		----	----	----
16	KS.94	KS1.00	KS1.16	KS1.32	----	----	----	----	----
19	KS.80	KS.93	KS1.09	KS1.26	KS1.41	----	----	----	----
20	K.77	K.87	K1.13	KS1.20	K1.29	KS1.08	KS.94	KS.84	KS.72
22	KS.96	KS1.06	KS1.19	KS1.34	----	----	----	----	----
24	KS.96	KS1.06	KS1.19	KS1.34	KS1.52	KS1.39	----	----	----
26	KS.86	KS.98	KS1.12	KS1.30	KS1.41	----	----	----	----
Averages	.90	1.00	1.17	1.29	1.42	1.31	1.10	.94	.85

Date	Sun's zenith distance								
	A M				0.0°	P M			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	TABLE MOUNTAIN, CALIF.								
	Air mass								
	3.76	3.01	2.26	1.51	*0.75	1.51	2.26	3.01	3.76
Mar.									
1	----	----	----	H1.47	----	----	----	----	----
2	1.16	1.25	1.37	H1.49	----	----	----	----	----
3	----	----	----	H1.52	----	----	----	----	----
4	----	----	----	H1.48	----	----	----	----	----
8	1.16	1.25	1.36	H1.49					
10	-	----	----	1.16	----	----	----	-	
12	----	----	----	H1.51	----	----	----	-	
13	----	----	----	H1.45	-				----
14	-	----	----	H1.44	----	----	----	----	----
15	----	----	----	H1.51	----	----	----	----	----
18	----	----	----	H1.51	----	----	----	----	----
19	----	----	----	H1.51	----	----	----	----	----
20	----	----	----	H1.43	-				
21	----	----	----	H1.45	----	----	----	-	
22		----	----	H1.47	----	----	----	-	
23				H1.45					
26	----	----	----	H1.50	----	----	----	----	----
28	----	----	----	H1.40	----	----	----	----	----
29	----	----	----	H1.45	----	----	----	----	----
30	1.13	1.22	1.33	H1.47	-				
31	--	----	----	H1.43	----	----	-	-	
Averages	1.15	1.16	1.35	1.52	----				
	WASHINGTON, D. C. (WBCO)								
	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Mar.									
1	KS0.78	KS0.88	KS1.01	----	----	----	----	----	----
9	KS.90	----	KS1.13	KS1.18	KS1.45	KS1.30	--	----	----
20	----	----	-		KS1.42	KS1.37	--	----	----
21	KS.92	KS1.06	KS1.18	KS1.32	KS1.31	KS1.34	----	-	----
27	-	KS.82	KS.99	KS1.15	--		-	----	----
Averages	.87	.92	1.08	1.22	1.39	1.34	----	----	----
	BLUE HILL, MASS.								
	Air mass								
	4.86	3.89	2.92	1.94	*0.97	1.94	2.92	3.89	4.86
Mar.									
1	0.94	1.00	--	1.26	----	----	----	----	----
10	.76	.88	1.04	1.20	1.33	-	1.03	0.81	0.62
18	.87	.96	1.08	1.16	----	----	----	----	----
20	-				1.30				
21	.93	1.00	1.11	1.27	1.37	1.26	1.12		
22	.97	1.04	1.14	1.27	1.37	----			----
23	.81	.93	1.06	1.23	----	----	1.05	[illegible]	----
25	.94	1.04	1.15	1.30	1.44	----	----	----	----
27	----	.93	1.06	1.19	1.39	1.25	1.06	.72	.80
28	.95	1.03	1.12	1.25	1.41	1.29	1.13	.91	
29		.95	1.12				-		
Averages	.90	.93	1.10	1.24	1.37	1.27	[illegible]	.88	[illegible]

D Dust
% Erratic record
H Haze
KS Slight smoke
* Extrapolated
K Smoke
KM Moderate smoke

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

MARCH 1956

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	4	5	6	7	8	9	10		11	12	13	14	15	16	17		18	19	20	21	22	23	24	
Langleys	68	52	21	19	18	91	63	47	34	55	50	37	109	37	153	68	132	31	152	142	132	125	58	110
Date	25	26	27	28	29	30	31																	
Langleys	181	171	155	141	119	48	146	137																

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	4	5	6	7	8	9	10		11	12	13	14	15	16	17		18	19	20	21	22	23	24	
Langleys	211	71	24	18	15	227	290	123	34	64	70	32	231	38	155	89	375	28	262	403	400	389	61	274
Date	25	26	27	28	29	30	31																	
Langleys	437	317	404	415	371	50	348	335																

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	4	5	6	7	8	9	10		11	12	13	14	15	16	17		18	19	20	21	22	23	24	
Langleys	453	69	5	13	14	344	553	207	39	52	20	19	348	27	188	99	407	--	532	577	559	513	57	(441)
Date	25	26	27	28	29	30	31																	
Langleys	607	336	576	541	277	70		(401)																

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	4	5	6	7	8	9	10		11	12	13	14	15	16	17		18	19	20	21	22	23	24	
Langleys	271	105	24	19	16	358	327	160	41	82	49	28	336	39	238	116	288	26	448	439	387	358	64	287
Date	25	26	27	28	29	30	31																	
Langleys	432	356	459	432	133	56	232	300																

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	4	5	6	7	8	9	10		11	12	13	14	15	16	17		18	19	20	21	22	23	24	
Langleys	120	121	41	33	29	118	80	78	72	131	87	41	126	55	203	102	194	32	124	89	98	123	68	104
Date	25	26	27	28	29	30	31																	
Langleys	116	258	110	96	156	72	211	147																

Note: Langley is the unit used to denote one gram calorie per square centimeter

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

MARCH 1956

1956	Las Vegas, Nev.	Lemont, Ill.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	Sayville, N. Y.	S. Ste. Marie, Mich.	Schenectady, N. Y.	Seabrook, N. J.	Seattle, Wash. (U. of W.)	Seattle-Tacoma, Wash.	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island, Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
Mar. 4------	507	374	456	368	---	258	234	154	530	548	484	437	458	533	506	411	539	(345)	511	268	516	---	495	250	330	137	305	231	305	452	485	508	341	550	472	646	472	278
Mar. 5------	507	207	113	453	---	326	246	182	500	531	457	262	321	513	506	261	545	(221)	289	226	301	---	368	373	124	357	189	198	228	376	495	--	180	540	386	641	473	330
Mar. 6------	504	50	330	517	-	23	228	475	(597)	195	370	54	39	336	512	341	463	(216)	495	108	369	---	40	231	41	165	212	284	436	83	478	527	96	519	38	608	277	379
Mar. 7------	489	12	50	128	432	110	(256)	221	566	539	273	55	53	238	436	178	571	426	511	217	534	---	64	202	18	142	46	12	171	189	409	569	18	570	58	646	160	(366)
Mar. 8------	506	381	503	550	527	474	268	390	395	520	513	40	48	556	531	86	563	446	570	400	597	---	38	---	117	61	271	198	365	178	516	256	205	565	37	658	122	299
Mar. 9------	528	453	198	509	190	397	246	402	138	553	416	156	179	548	534	494	544	234	550	123	545	---	489	(394)	356	185	161	189	376	455	515	590	241	570	184	491	514	(420)
Mar. 10------	560	394	282	151	512	143	126	382	499	560	417	484	482	342	533	---	561	396	535	143	534	---	504	270	411	412	256	379	382	457	518	455	266	567	497	526	444	416
Average------	514	267	362	468	490	247	(229)	315	(503)	535	419	255	268	438	508	295	511	(326)	494	255	485	---	285	(287)	200	298	206	217	323	313	488	484	193	546	282	602	353	(355)
Mar. 11------	327	420	87	316	331	479	202	509	575	527	122	126	91	367	559	---	583	(531)	159	485	513	--	146	-	68	144	429	492	147	246	531	473	300	520	(195)	605	266	443
Mar. 12------	602	384	42	554	551	492	182	491	593	502	34	130	78	185	388	(348)	533	568	630	502	83	---	83	-	196	51	146	158	396	124	144	571	104	572	-	533	55	343
Mar. 13------	576	466	34	529	530	198	50	333	180	554	142	181	80	116	93	506	582	338	576	402	369	---	123	(311)	200	143	169	204	124	150	101	524	340	601	--	624	45	449
Mar. 14------	597	251	154	481	510	151	(118)	487	573	538	162	47	27	125	436	(130)	586	549	574	445	176	---	29	411	56	43	384	408	451	63	383	543	85	600	37	672	107	449
Mar. 15------	607	262	171	548	550	286	156	480	550	609	252	435	420	96	72	(531)	609	592	607	469	422	---	420	196	446	220	307	355	427	430	68	553	433	614	426	615	197	452
Mar. 16------	576	464	449	520	555	499	99	475	493	628	81	61	13	81	584	(142)	590	(478)	571	231	631	-	43	522	110	35	305	330	372	100	550	395	73	610	44	636	36	(269)
Mar. 17------	357	273	529	528	505	306	92	394	628	611	473	429	198	375	545	441	548	(487)	459	517	621	498	506	534	430	487	418	550	468	494	522	657	183	600	511	460	502	290
Average------	520	360	209	497	502	430	(128)	453	556	567	181	202	177	227	382	(350)	576	(506)	511	407	402	---	193	(455)	215	161	308	357	426	230	371	531	[illegible]	588	(243)	592	173	(385)
Mar. 18------	607	134	518	578	578	320	311	328	620	594	105	499	237	466	582	531	579	(553)	599	395	529	476	354	506	473	-	406	418	457	259	568	631	422	602	368	614	59	472
Mar. 19------	594	312	500	510	520	517	329	156	632	617	352	89	116	414	596	552	611	(537)	587	(425)	627	590	142	531	164	395	158	173	314	572	577	587	528	632	105	515	476	482
Mar. 20------	597	539	578	556	554	501	156	387	670	566	592	530	568	626	390	515	599	(468)	574	463	256	588	594	466	500	551	90	92	217	597	323	662	531	628	(585)	568	580	388
Mar. 21------	602	435	55	531	546	179	253	127	587	568	525	567	519	624	148	535	601	(557)	604	247	332	589	637	211	500	549	136	138	255	587	65	657	459	625	--	578	588	144
Mar. 22------	604	456	539	511	153	515	257	314	165	620	193	567	491	435	241	256	607	(444)	177	286	653	614	565	495	438	475	94	93	148	286	295	455	164	634	574	654	187	589
Mar. 23------	513	11	489	563	579	183	199	506	268	594	518	561	475	593	554	554	590	(548)	585	485	541	602	562	555	461	158	129	105	177	261	539	460	256	631	550	647	506	497
Mar. 24------	564	611	545	141	531	590	370	466	102	615	272	55	150	348	606	591	608	(560)	589	434	590	619	101	(585)	359	106	209	162	218	474	574	501	556	645	102	635	147	223
Average------	597	361	432	532	538	461	268	369	521	596	451	110	370	501	445	509	599	(524)	571	(391)	504	583	422	(478)	411	122	173	169	259	134	122	579	100	628	(381)	602	92	[illegible]
Mar. 25------	410	352	573	574	157	240	378	121	581	638	586	604	605	680	576	556	198	(520)	176	144	633	187	658	230	510	562	257	199	332	519	517	660	[illegible]	524	626	577	564	517
Mar. 26------	624	562	140	569	623	552	598	424	605	529	455	491	530	410	523	372	625	(577)	531	423	585	628	545	176	471	406	283	455	454	532	505	628	594	639	548	[illegible]	87	413
Mar. 27------	650	170	161	579	559	150	394	537	596	644	175	591	589	518	511	572	628	(376)	642	62	490	645	608	571	535	529	247	375	515	541	167	656	571	675	617	621	475	179
Mar. 28------	664	236	447	579	571	150	-	529	657	472	286	596	507	323	633	573	636	(382)	616	129	344	627	578	320	453	140	176	184	371	117	600	651	[illegible]	636	585	646	186	[illegible]
Mar. 29------	658	234	502	600	592	187	(358)	532	648	571	544	265	52	604	584	140	653	(614)	649	345	582	629	72	172	121	32	163	185	303	131	[illegible]	641	252	654	106	619	72	566
Mar. 30------	649	190	568	595	575	303	410	364	462	533	587	148	311	659	565	(430)	595	(576)	659	580	565	576	248	454	206	371	206	233	249	378	552	521	196	500	275	620	460	549
Mar. 31------	520	550	366	286	191	535	238	339	653	383	197	483	391	626	487	383	541	(449)	246	539	429	445	465	603	234	377	308	359	400	341	520	673	153	240	536	-	124	461
Average------	596	328	437	512	495	301	(363)	421	600	539	490	454	427	546	554	(432)	597	(499)	546	360	518	577	453	404	361	346	234	284	375	366	537	630	354	560	465	600	528	410

Note. Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1956	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C.
Mar. 4------	117	562	329	470	241	541	130	376	287	340	655	233	520
Mar. 5------	147	556	294	561	204	402	103	128	---	123	669	453	489
Mar. 6------	123	458	47	---	298	288	135	41	335	54	689	459	420
Mar. 7------	142	603	141	481	76	306	102	33	128	24	688	205	495
Mar. 8------	104	540	169	573	189	575	166	30	275	26	645	103	330
Mar. 9------	158	536	388	624	367	552	(156)	380	435	351	694	386	568
Mar. 10------	106	590	362	192	398	131	(114)	466	451	428	700	374	396
Average-------	128	549	248	484	253	399	(129)	208	319	192	677	316	460
Mar. 11------	148	570	81	78	512	84	(136)	72	523	58	663	---	268
Mar. 12------	167	485	71	219	401	277	137	140	494	139	659	470	283
Mar. 13------	151	583	315	394	308	251	160	87	243	139	481	499	321
Mar. 14------	107	594	67	471	479	294	128	41	501	32	---	279	316
Mar. 15------	176	632	118	508	481	36	142	340	431	406	---	523	47
Mar. 16------	141	633	299	369	477	329	140	55	485	73	673	(411)	267
Mar. 17------	156	570	30	642	491	535	(127)	216	455	244	697	287	580
Average-------	149	581	140	383	450	258	(138)	136	447	156	635	(412)	298
Mar. 18------	139	626	277	616	444	524	211	351	484	434	662	501	453
Mar. 19------	177	619	398	627	204	524	(238)	32	487	33	---	540	369
Mar. 20------	183	608	433	654	104	521	(156)	461	369	523	597	547	444
Mar. 21------	188	637	139	643	209	564	231	547	193	542	660	534	626
Mar. 22------	269	603	239	324	105	438	170	548	409	491	682	523	565
Mar. 23------	(205)	635	290	622	144	561	(267)	525	512	517	594	379	587
Mar. 24------	193	652	258	616	209	510	(248)	77	520	84	636	502	401
Average-------	(193)	626	291	586	203	520	(217)	363	425	375	639	504	492
Mar. 25------	163	572	340	670	324	628	282	584	420	580	586	577	638
Mar. 26------	304	639	435	599	254	593	317	381	252	418	592	509	512
Mar. 27------	319	631	83	619	291	562	340	580	531	555	659	570	---
Mar. 28------	320	697	96	637	256	347	303	587	546	558	674	594	522
Mar. 29------	203	693	158	165	287	329	322	346	426	331	474	568	322
Mar. 30------	324	622	422	650	271	646	323	74	169	82	652	234	605
Mar. 31------	343	538	499	682	334	546	343	433	325	463	603	345	602
Average-------	282	627	290	575	288	522	319	426	381	427	606	485	533

1956	Cleveland, Ohio	Columbia, Mo.	Columbus, Ohio	Davis, Calif.	Dodge City, Kans.	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.
Mar. 4------	---	448	421	317	535	331	449	336	575	475	189	527	474
Mar. 5------	---	423	391	310	504	244	193	283	567	515	200	475	441
Mar. 6------	---	407	120	464	143	28	83	374	526	414	189	428	533
Mar. 7------	---	95	140	447	536	32	83	252	602	539	213	470	475
Mar. 8------	---	516	179	416	535	304	73	336	544	529	214	546	528
Mar. 9------	---	473	490	306	564	236	488	302	604	536	210	573	529
Mar. 10------	---	339	384	379	565	357	(470)	440	593	538	123	524	503
Average-------	---	386	304	377	483	219	(263)	332	573	506	191	506	498
Mar. 11------	---	273	320	492	482	307	129	365	590	405	208	573	552
Mar. 12------	---	461	92	488	532	179	---	264	542	531	120	86	550
Mar. 13------	---	290	331	452	423	472	(204)	345	635	381	111	80	546
Mar. 14------	---	485	108	506	433	199	77	375	624	349	100	269	533
Mar. 15------	---	242	410	489	297	452	433	332	628	585	195	90	557
Mar. 16------	178	332	137	444	602	290	107	319	634	563	234	597	522
Mar. 17------	422	462	198	491	563	177	---	444	611	499	135	602	582
Average-------	---	364	228	480	476	298	(190)	349	609	473	158	328	549
Mar. 18------	307	348	206	445	609	519	409	462	614	565	253	503	558
Mar. 19------	592	457	461	328	613	511	90	371	614	492	166	620	563
Mar. 20------	635	571	523	492	422	550	349	480	642	570	135	564	568
Mar. 21------	605	123	499	400	563	489	600	485	629	530	242	123	540
Mar. 22------	135	324	121	509	503	216	542	202	635	520	296	244	590
Mar. 23------	133	302	361	508	599	127	571	370	654	576	---	406	598
Mar. 24------	517	569	425	487	(607)	612	62	533	630	582	---	588	589
Average-------	418	385	371	453	(559)	432	375	415	631	548	218	435	572
Mar. 25------	291	533	337	491	590	189	(525)	216	604	457	310	593	540
Mar. 26------	630	436	470	559	478	591	---	136	528	614	310	565	636
Mar. 27------	531	439	182	549	288	322	547	493	671	650	323	(593)	615
Mar. 28------	79	572	66	551	521	52	550	526	466	629	327	(574)	615
Mar. 29------	403	530	400	531	634	262	---	365	639	626	---	548	608
Mar. 30------	301	582	283	509	626	266	117	321	632	(610)	193	569	612
Mar. 31------	574	531	559	478	626	595	462	230	432	376	337	(271)	317
Average-------	401	518	328	524	537	325	(440)	327	567	(566)	300	(530)	563

1956	Gainesville, Fla.	Glasgow, Mont.	Granby, Colo.	Grand Junction,Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.
Mar. 4------	510	371	394	529	362	363	595	588	388	590	281	313
Mar. 5------	---	404	513	534	340	351	320	561	448	641	73	296
Mar. 6------	585	412	226	252	404	306	313	447	43	401	215	501
Mar. 7------	584	397	553	592	130	194	340	434	45	555	80	183
Mar. 8------	415	408	343	507	465	265	604	432	220	586	51	603
Mar. 9------	648	217	536	563	340	377	588	605	435	585	310	388
Mar. 10------	365	387	408	566	375	328	143	583	439	614	441	178
Average-------	518	371	425	506	345	312	415	521	288	567	207	352
Mar. 11------	314	466	229	147	520	220	574	122	377	398	231	404
Mar. 12------	487	346	602	592	453	121	275	352	260	654	160	121
Mar. 13------	493	440	409	386	225	51	238	183	308	628	219	170
Mar. 14------	550	386	313	278	432	---	267	374	437	649	63	221
Mar. 15------	521	298	545	630	407	42	52	90	446	657	537	108
Mar. 16------	326	329	510	627	414	87	425	173	427	601	67	627
Mar. 17------	690	449	561	520	506	526	572	598	247	635	198	610
Average-------	483	388	453	454	422	175	343	270	357	603	211	323
Mar. 18------	478	492	614	---	514	326	554	495	192	675	361	487
Mar. 19------	653	438	608	---	419	340	498	541	477	669	498	634
Mar. 20------	592	419	361	---	354	521	593	357	483	669	590	628
Mar. 21------	670	316	580	---	184	574	592	632	535	663	589	252
Mar. 22------	418	406	562	---	225	475	489	632	193	660	353	124
Mar. 23------	642	353	465	---	416	511	597	625	318	675	388	---
Mar. 24------	540	449	602	650	501	243	502	532	545	657	566	---
Average-------	570	410	542	---	373	427	546	545	392	667	478	425
Mar. 25------	638	456	545	463	509	595	654	703	469	619	516	623
Mar. 26------	642	408	633	663	255	350	640	215	---	694	365	626
Mar. 27------	592	266	543	562	232	389	316	578	265	687	617	494
Mar. 28------	602	310	580	715	558	339	345	264	353	711	496	463
Mar. 29------	538	384	638	695	414	97	155	254	382	714	189	415
Mar. 30------	670	390	662	701	463	587	667	533	361	710	312	620
Mar. 31------	678	307	671	695	327	586	592	695	564	499	221	563
Average-------	623	360	610	642	394	425	481	463	399	662	392	543

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

CORRECTION

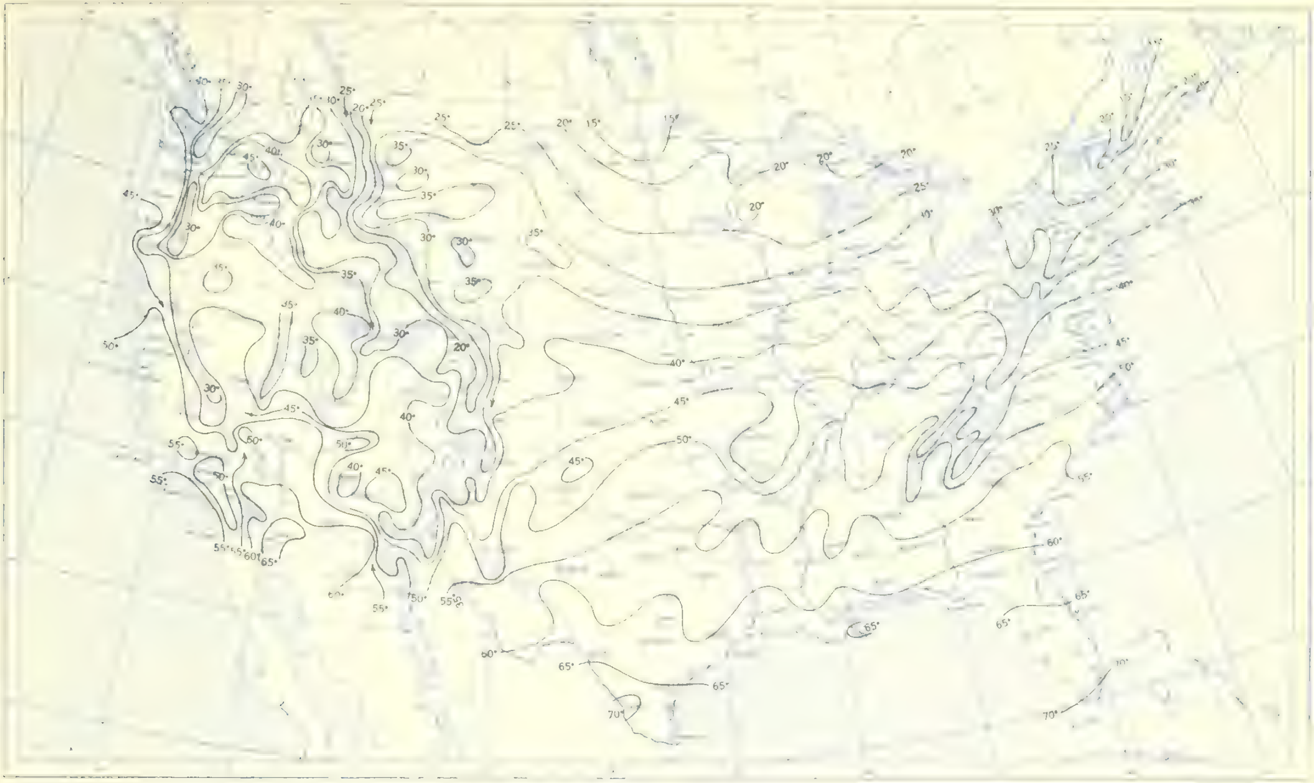
Charts IX and X, the anticyclone and cyclone tracks, for the months October 1955 through February 1956, and published in the issues for those months, are incorrectly registered with the blue base map. The error amounts to about 10° of latitude and up to 7° - 8° of longitude in the extreme northwestern and northeastern corners of the map, and up to 35° of longitude in the central areas north of 65°N. In the center portions across the United States the error is small.

The tracks for March 1956 in this issue are correct.

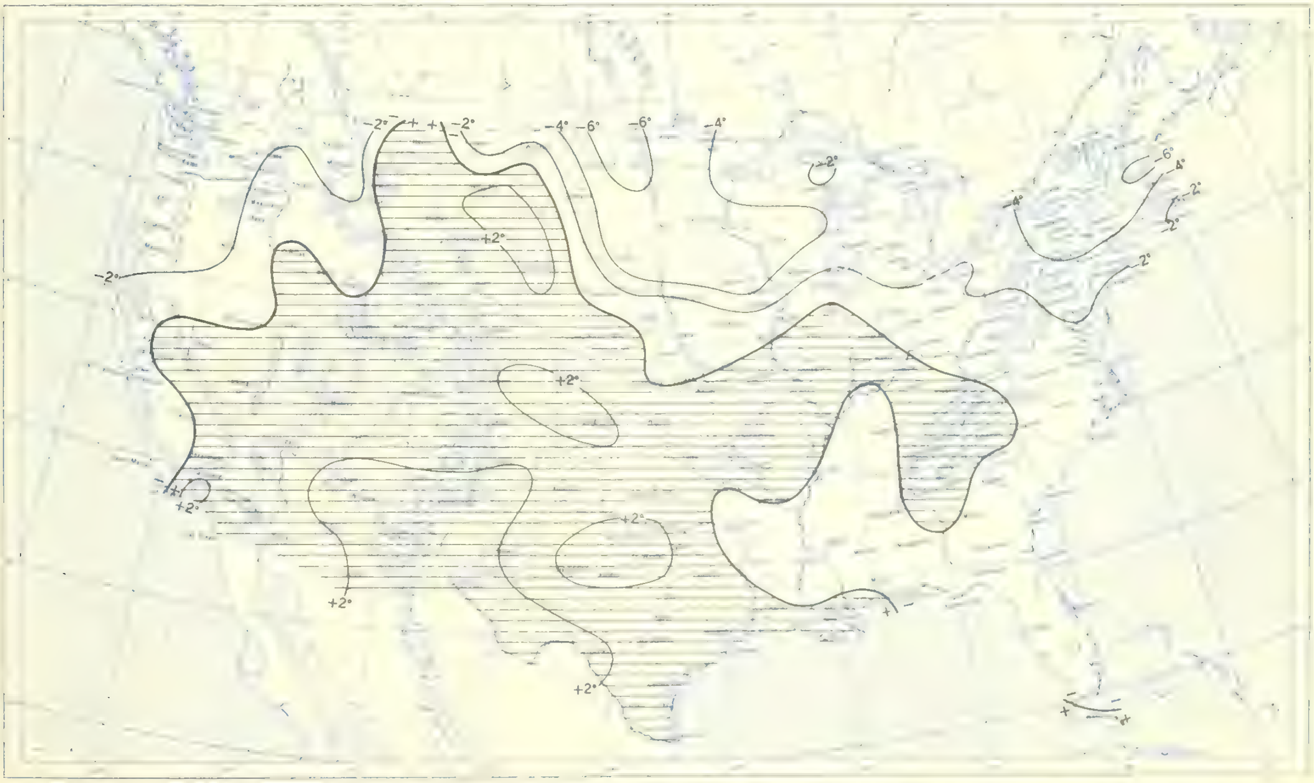
New corrected maps will be printed for October through February and forwarded to all subscribers in the near future.

NWRC, Asheville, N. C. --- 6/4/56 --- 1850

Chart I. A. Average Temperature (°F.) at Surface, March 1956.

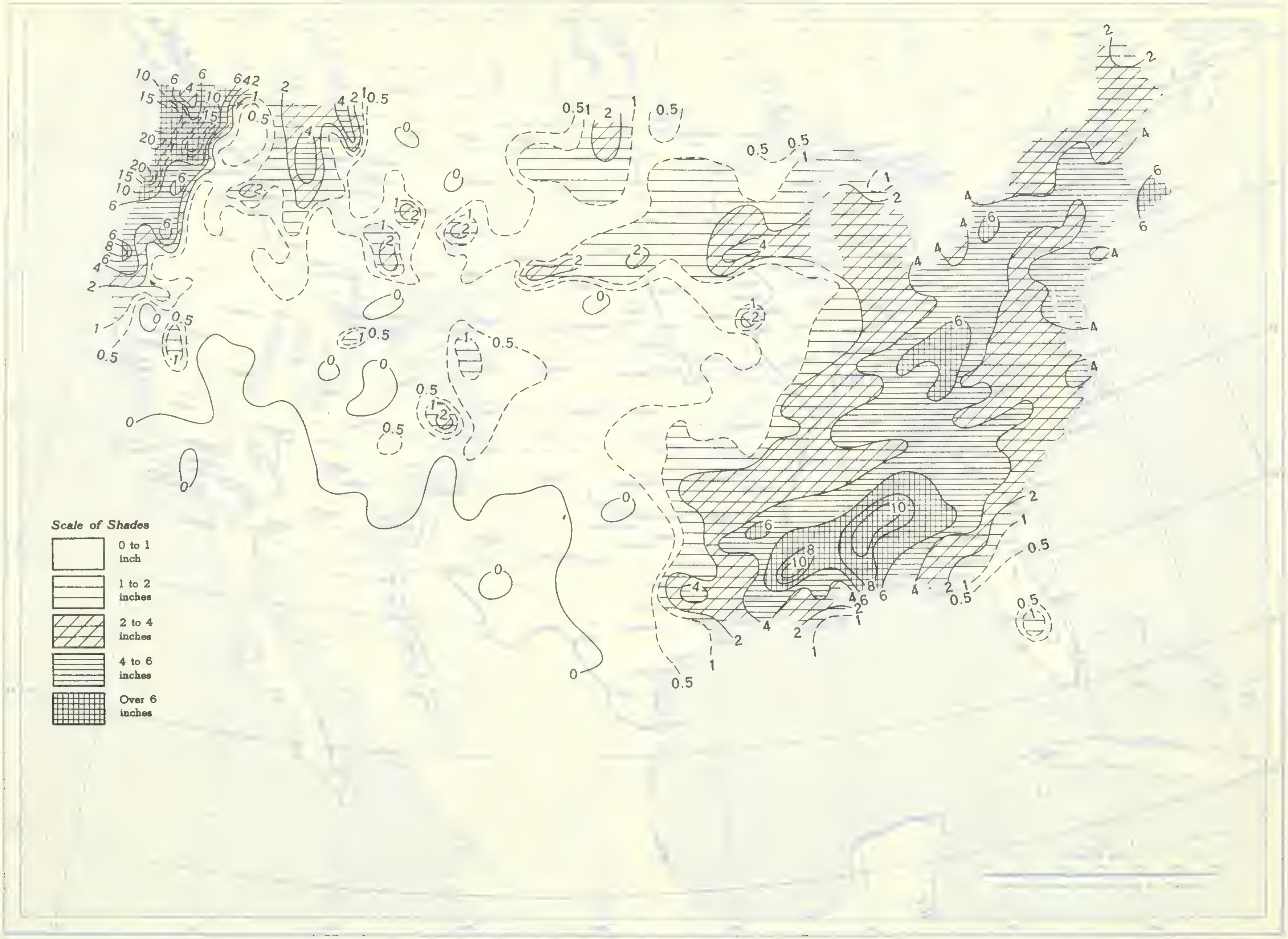


B. Departure of Average Temperature from Normal (°F.), March 1956.



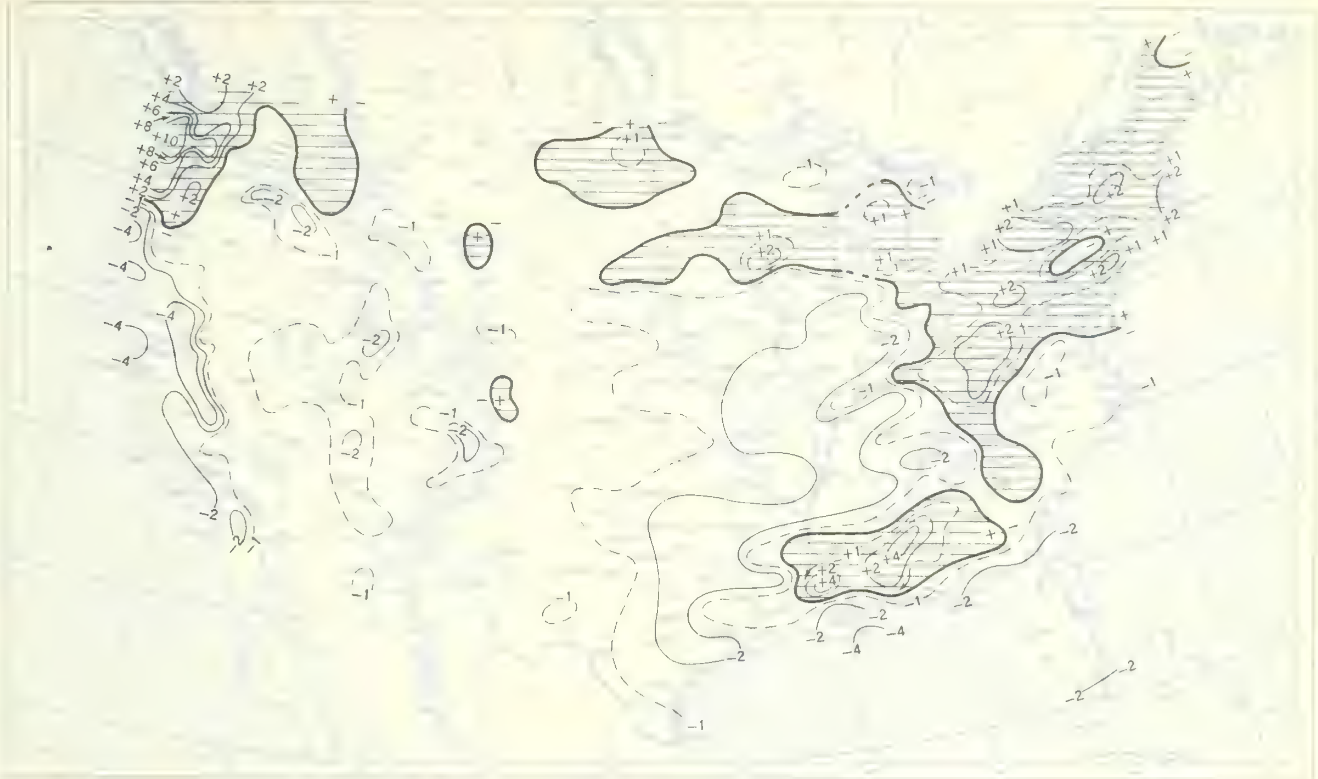
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), March 1956.

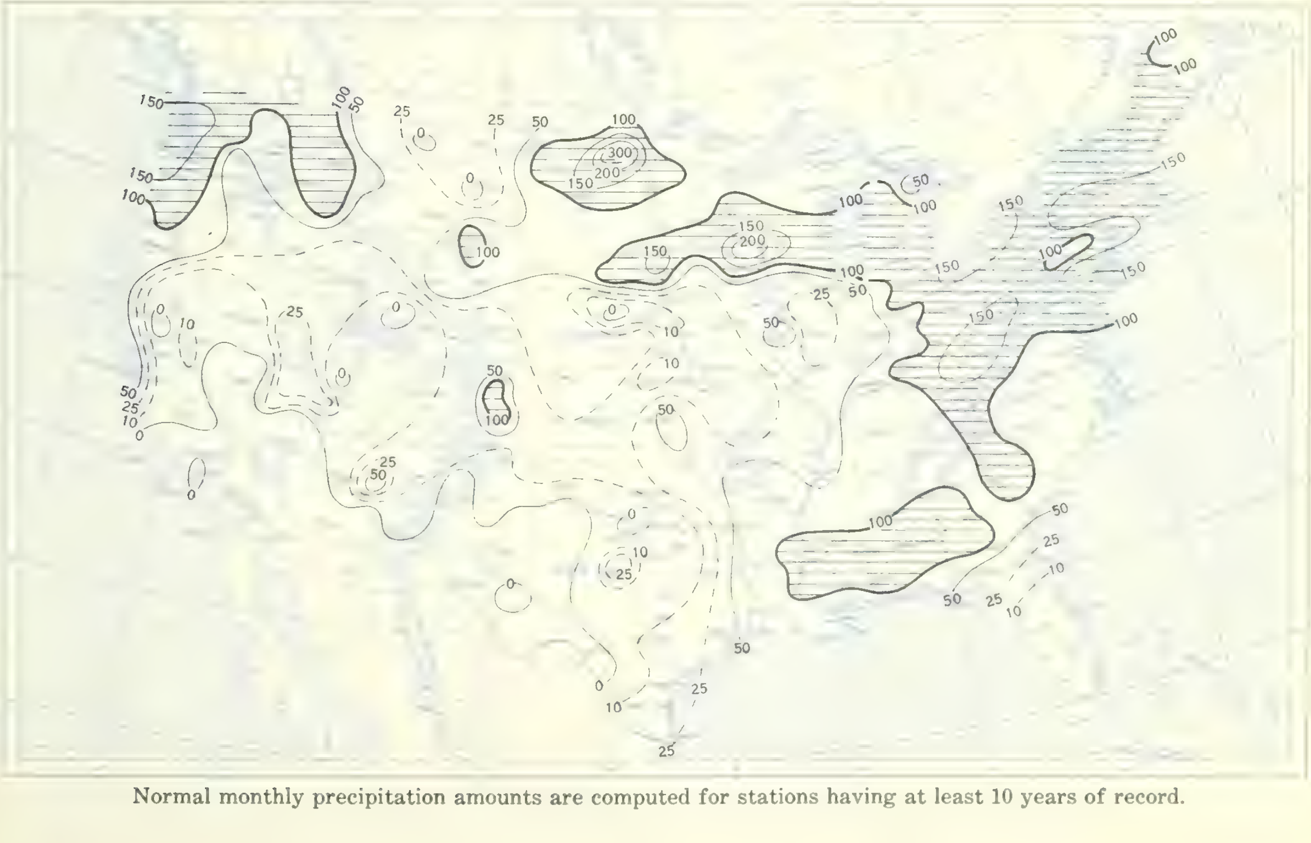


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), March 1956.

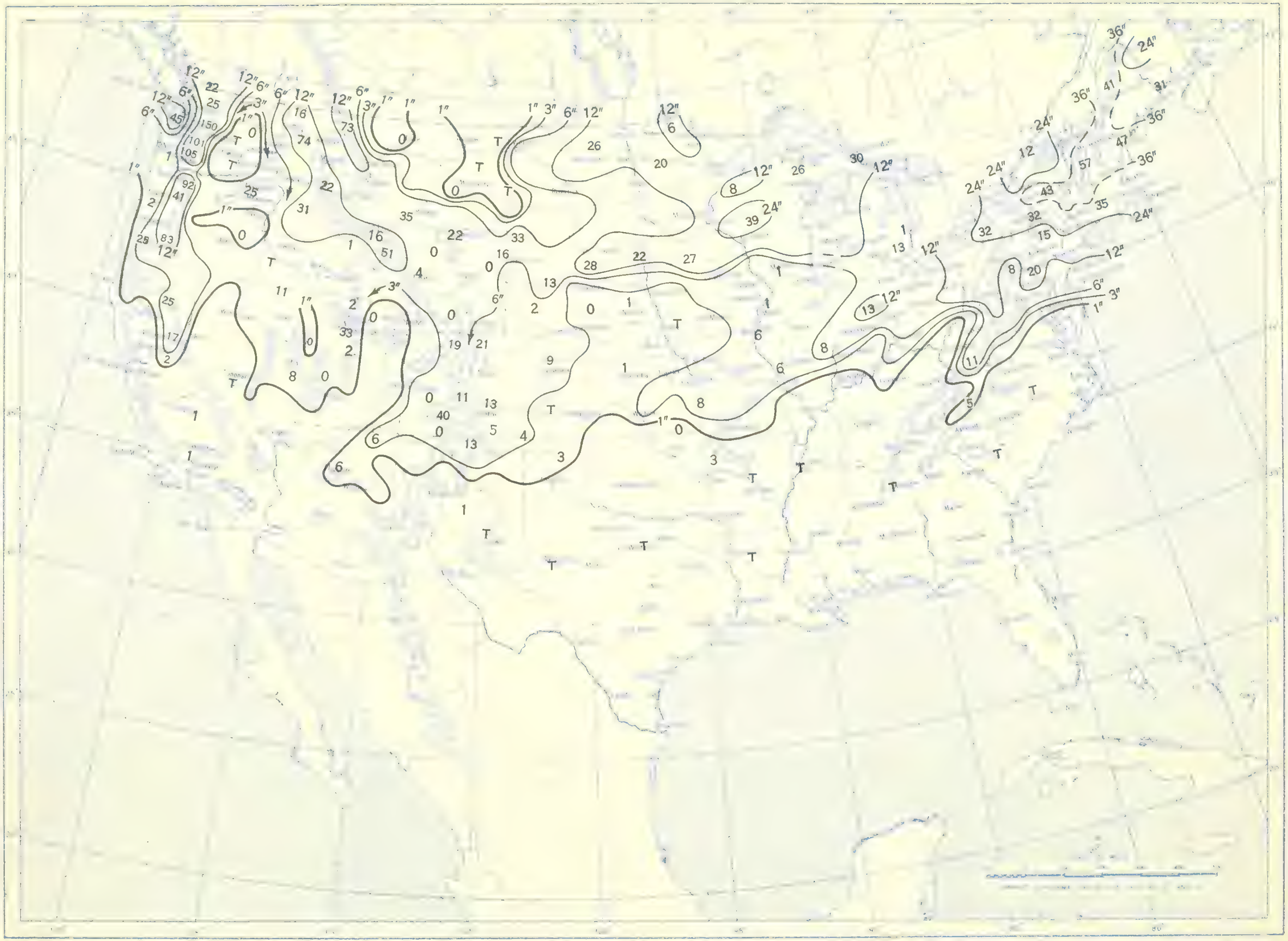


B. Percentage of Normal Precipitation, March 1956.



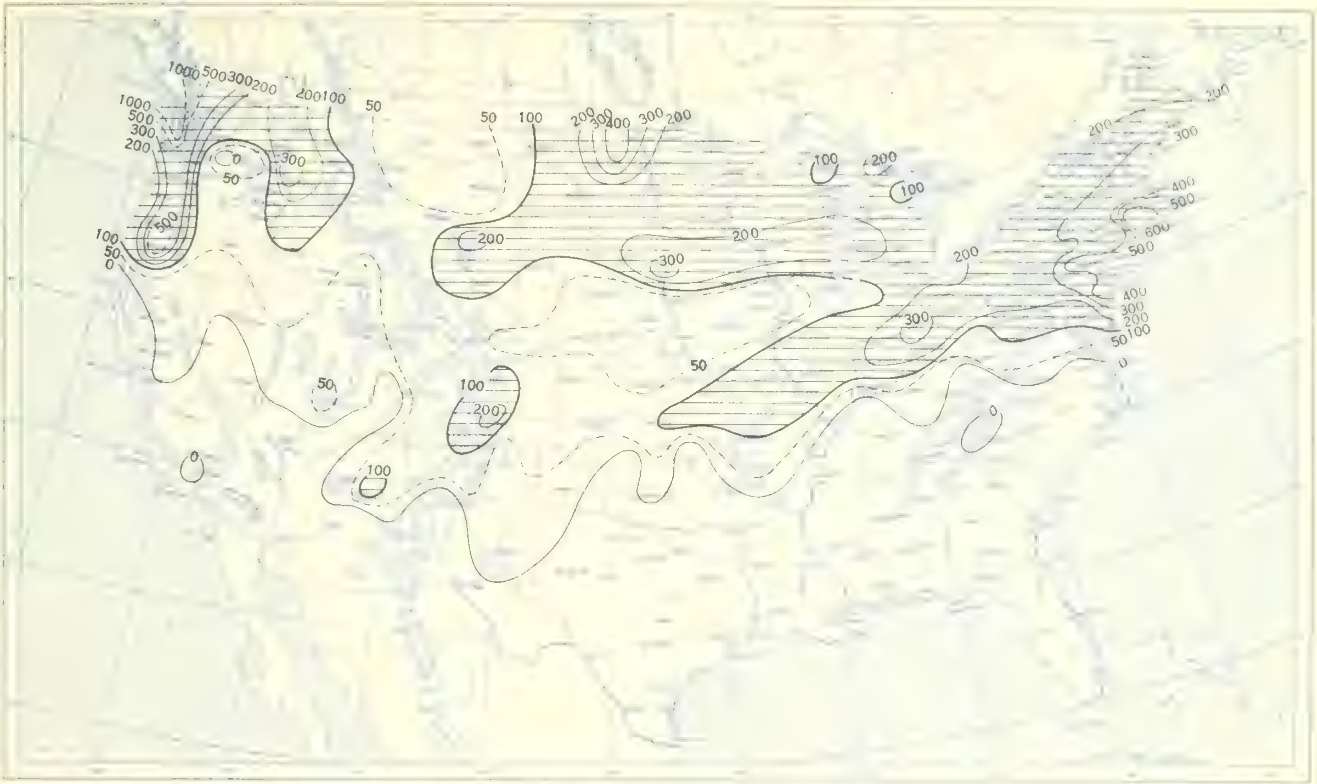
Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart IV. Total Snowfall (Inches), March 1956.

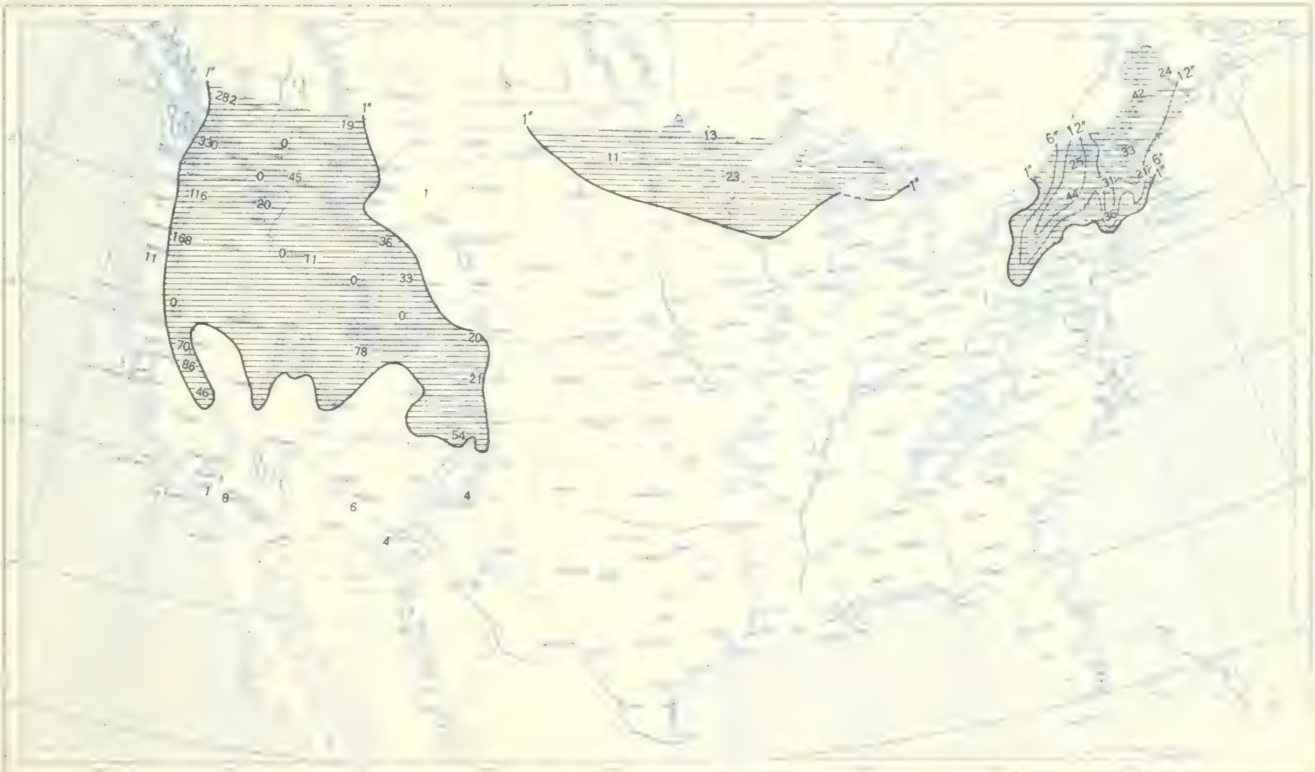


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Normal Snowfall, March 1956.

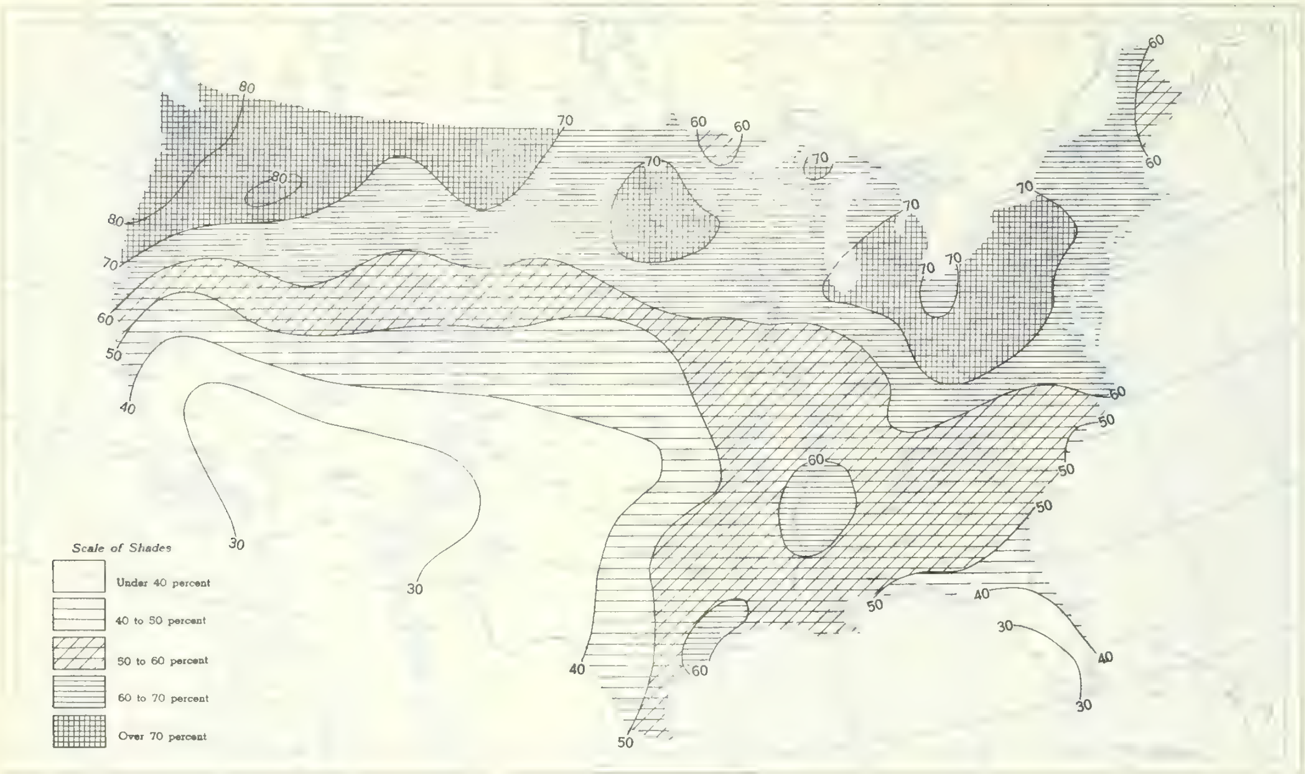


B. Depth of Snow on Ground (Inches). 7:30 a. m. E. S. T., March 26, 1956.

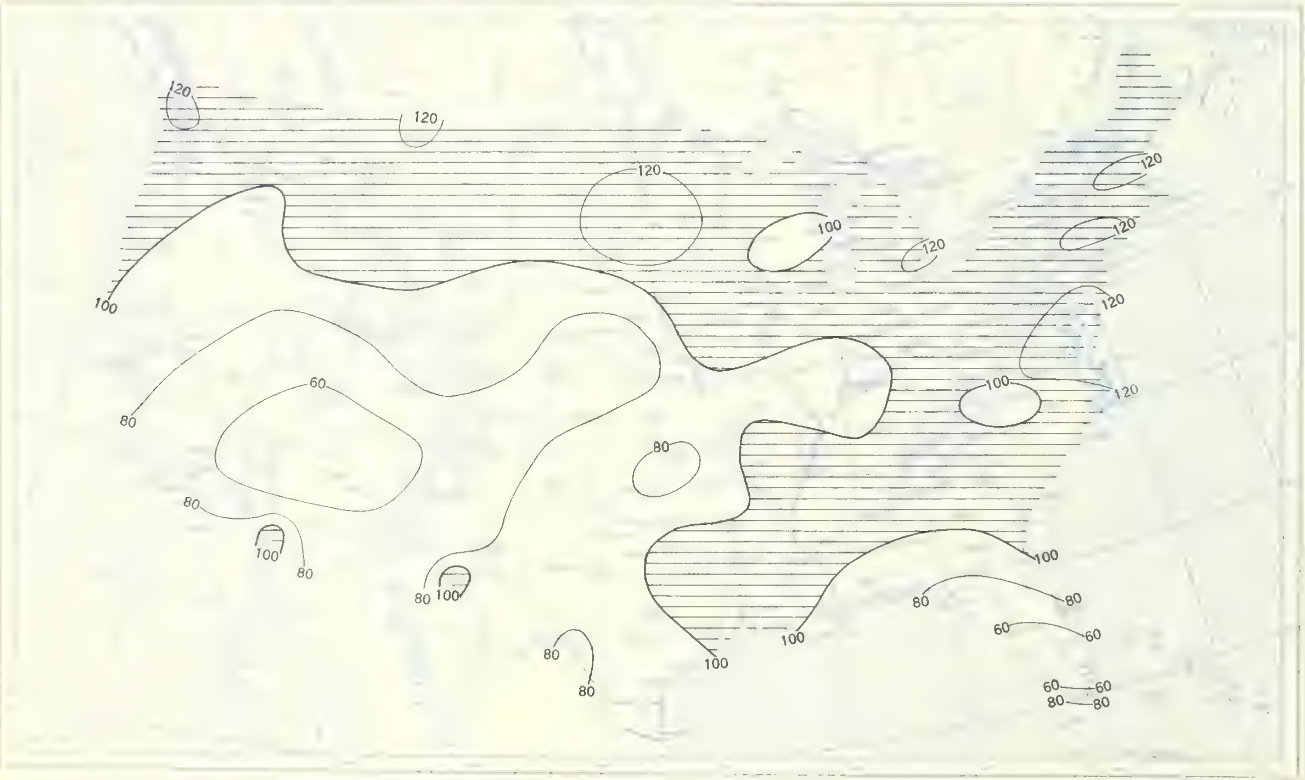


A. Amount of normal monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:30 a. m. E. S. T., of the Tuesday nearest the end of the month. It is based on reports from Weather Bureau and cooperative stations. Dashed line shows greatest southern extent of snowcover during month.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, March 1956.

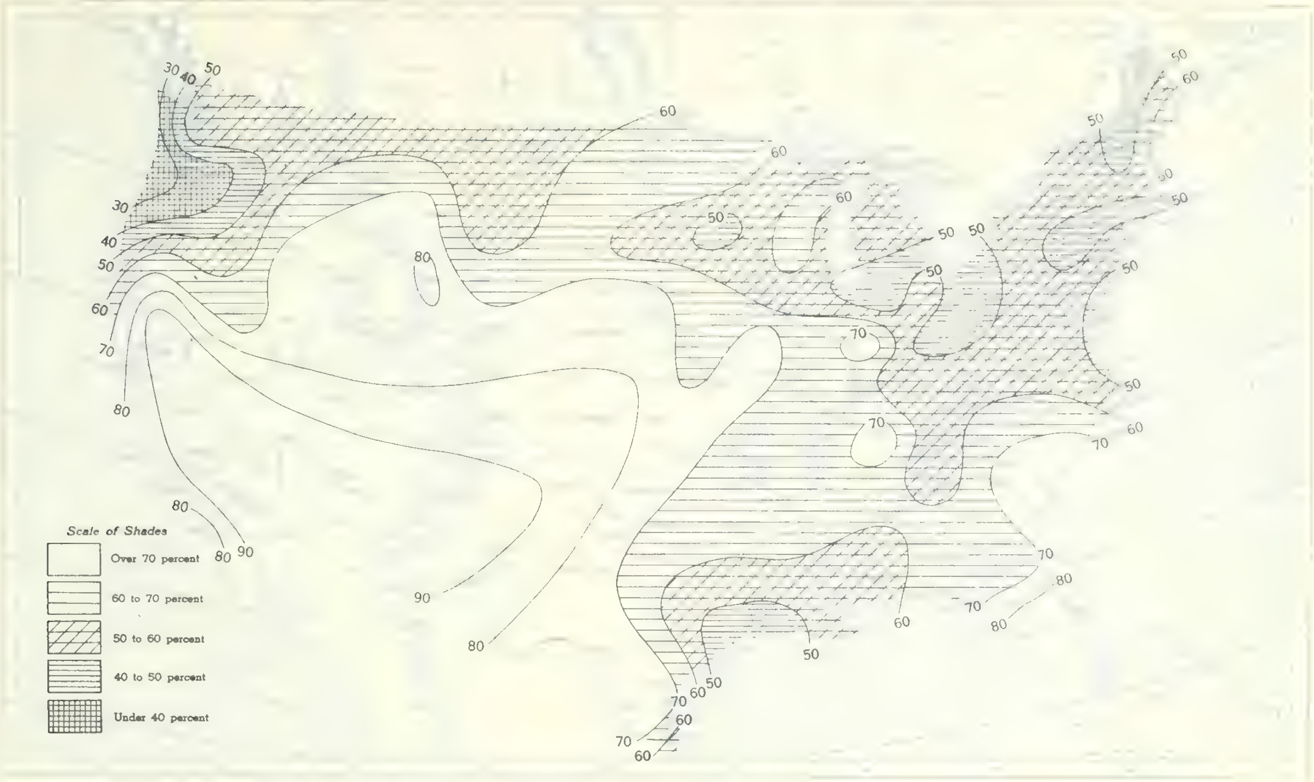


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, March 1956.

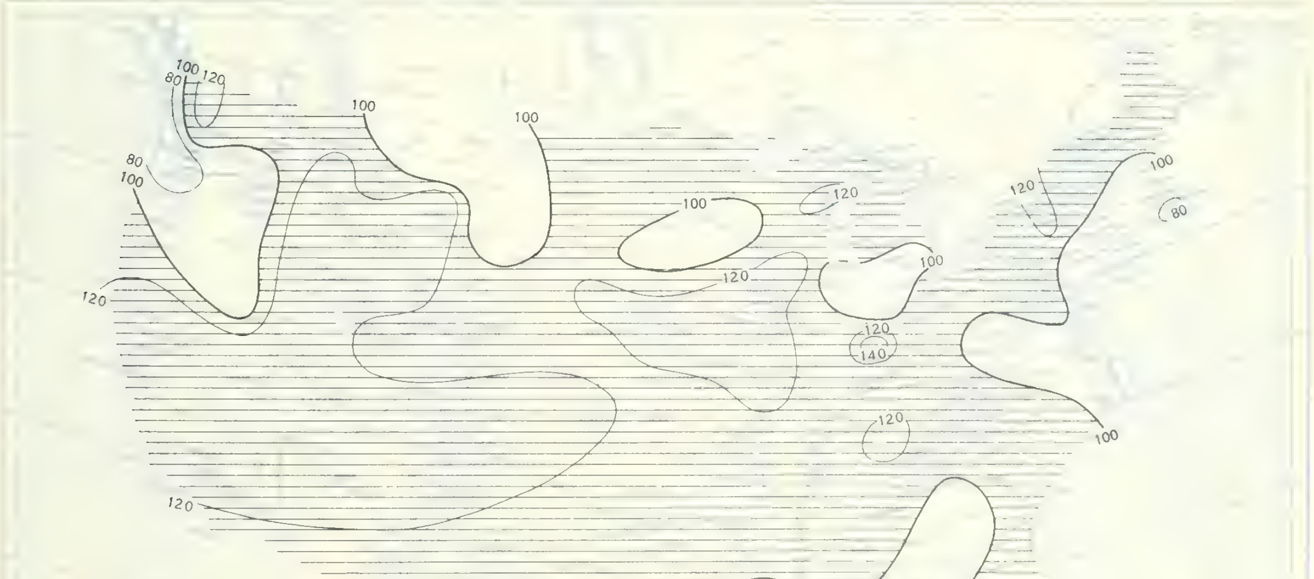


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, March 1956.



B. Percentage of Normal Sunshine, March 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, March 1956. Inset: Percentage of Mean Daily Solar Radiation, March 1956. (Mean based on period 1951-55.)

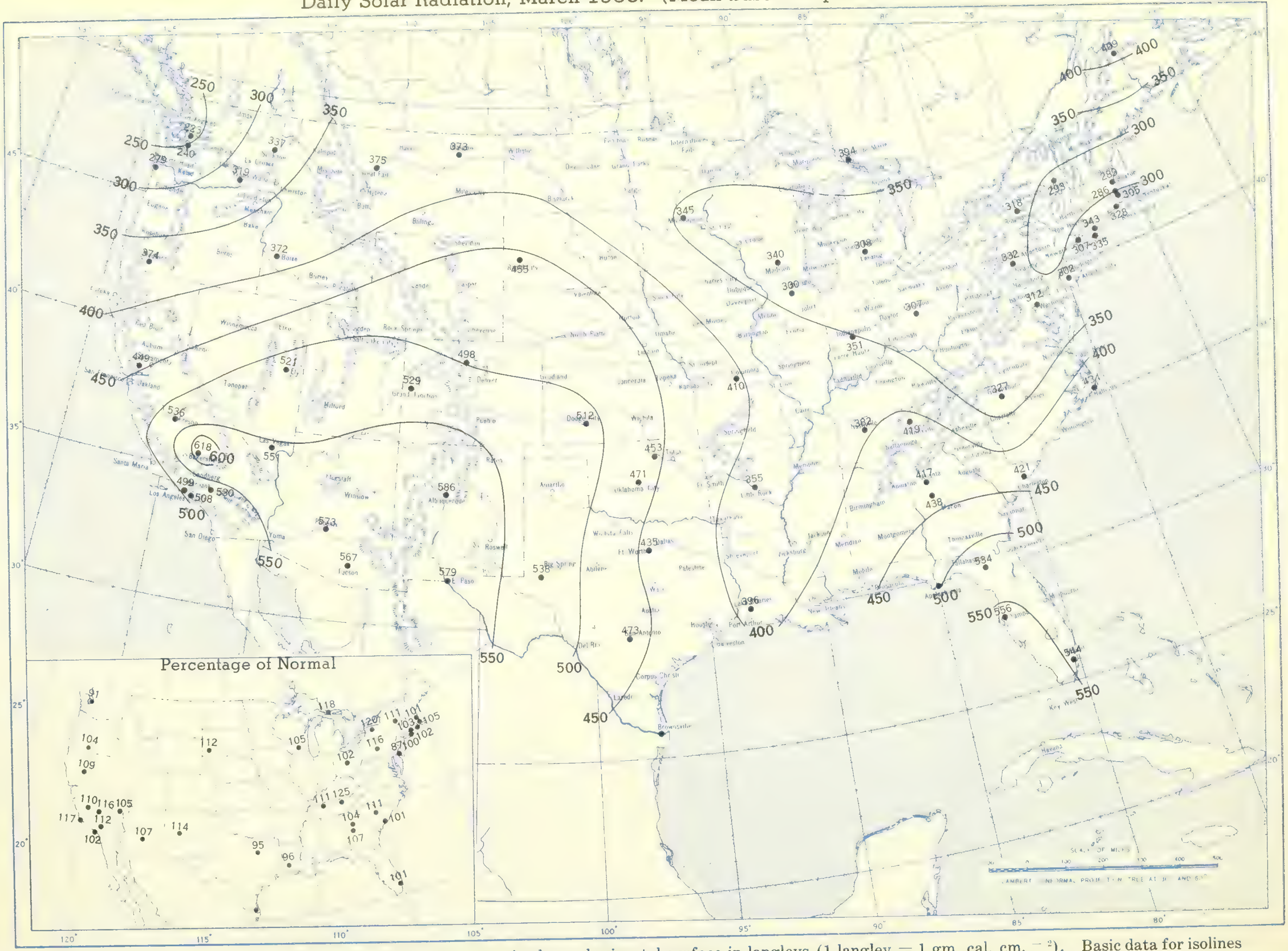
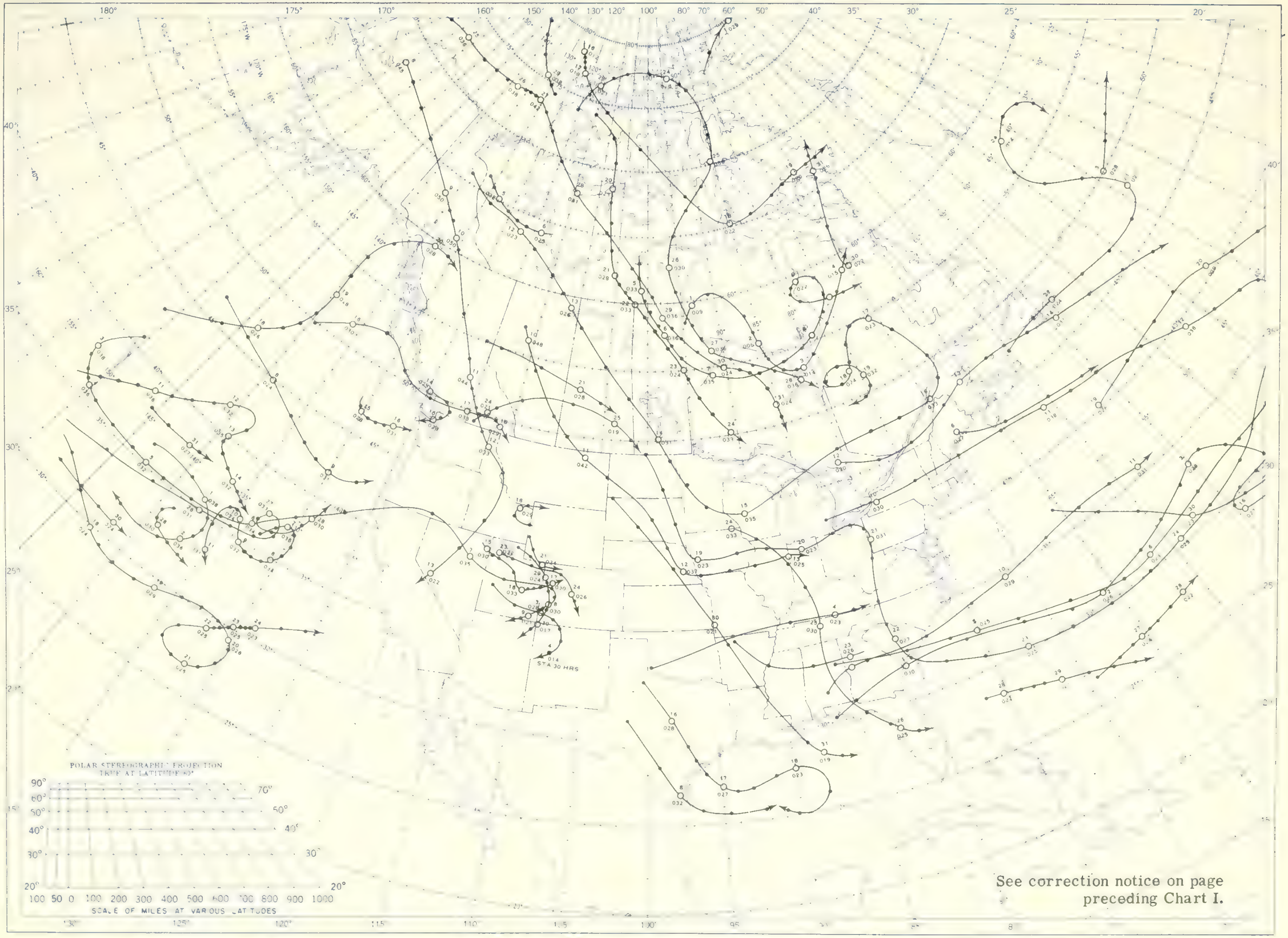


Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$). Basic data for isolines [illegible] Further estimates are obtained from supplementary data for which limits of accuracy are wider than for those data shown.

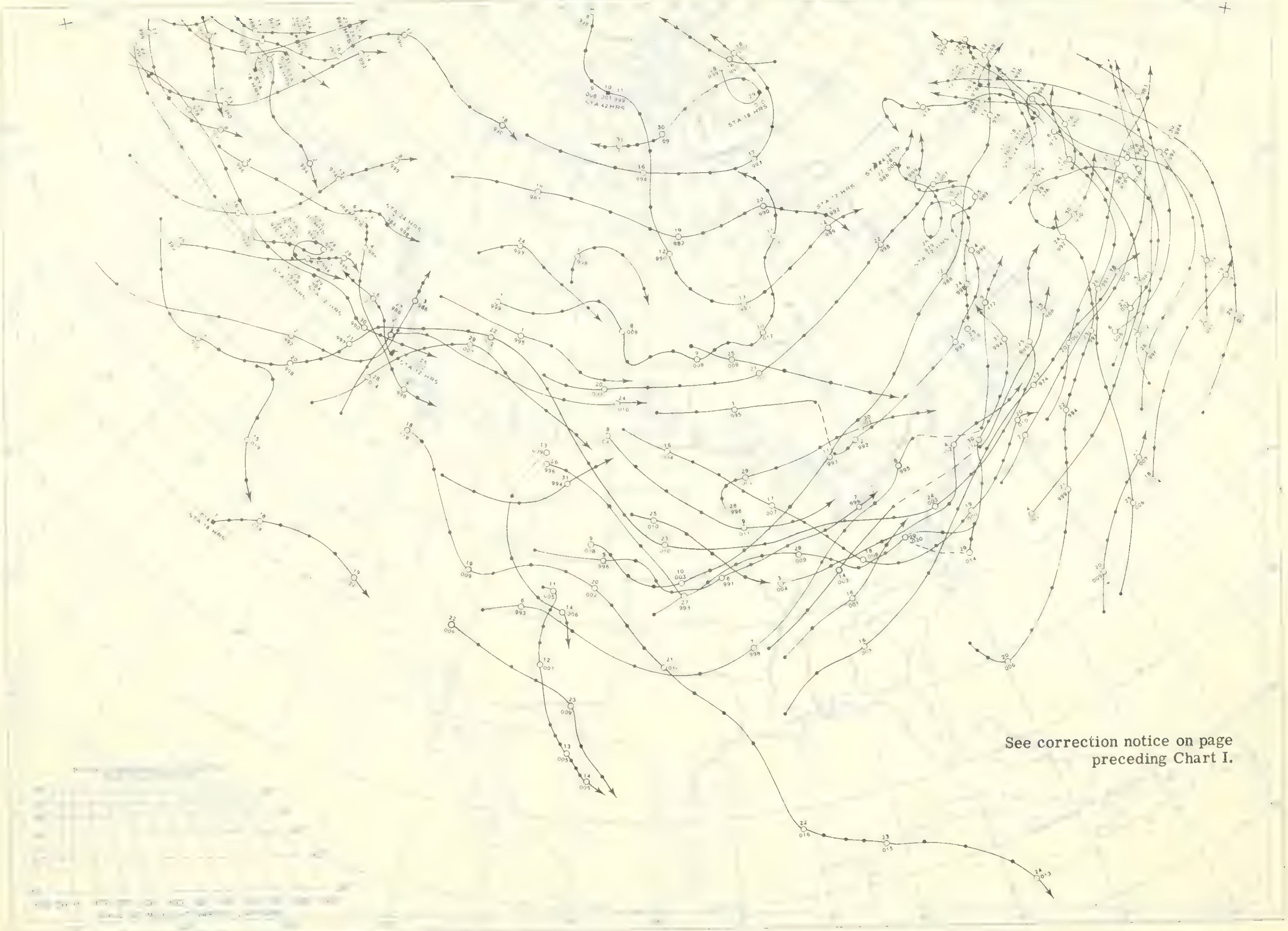
Chart IX. Tracks of Centers of Anticyclones at Sea Level, March 1956.



See correction notice on page
preceding Chart I.

Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, March 1956.

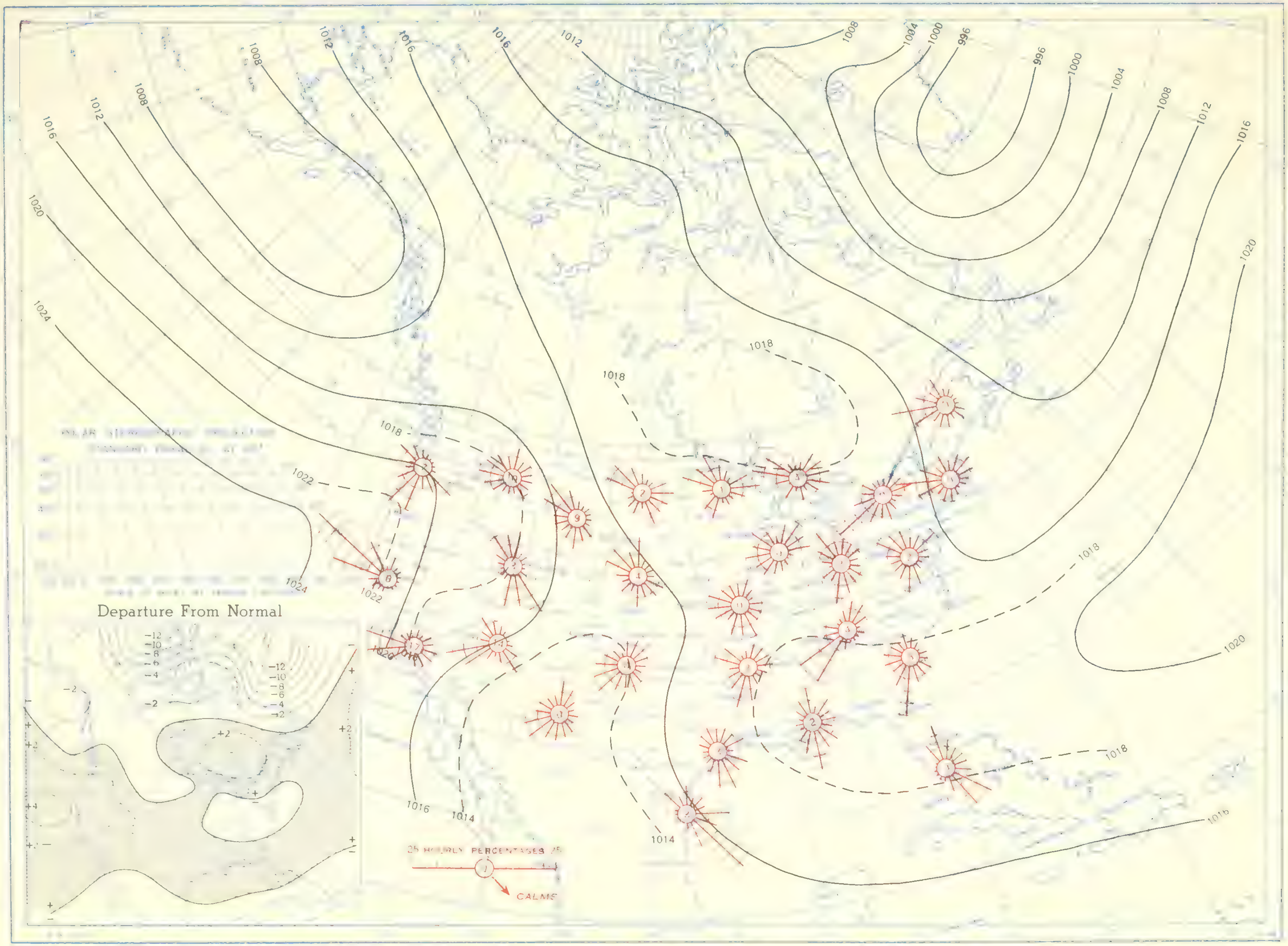


See correction notice on page preceding Chart I.

Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

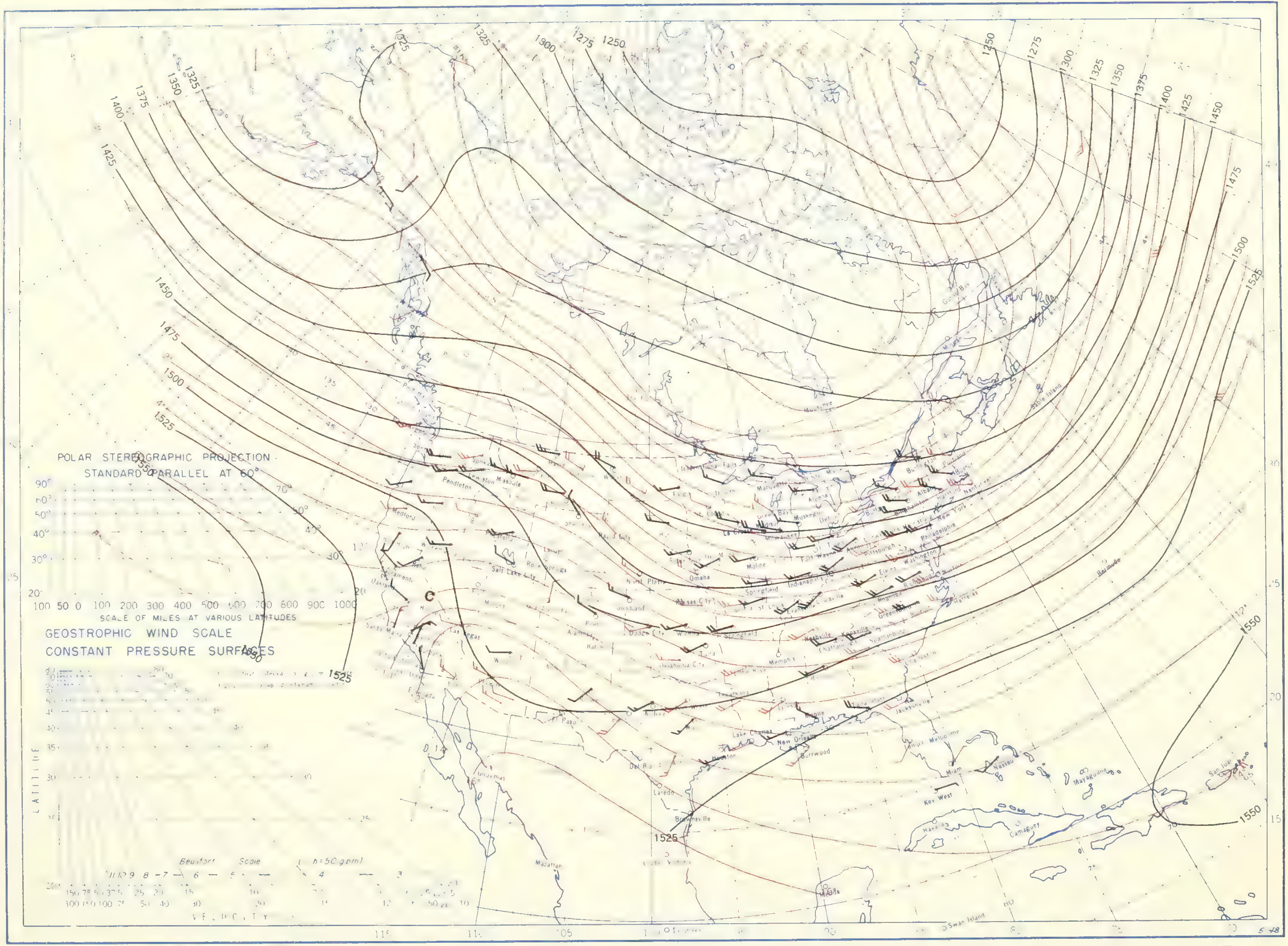
Average Pressure (mb.) from Normal, March 1956.

Average Pressure (mb.) from Normal, March 1956.



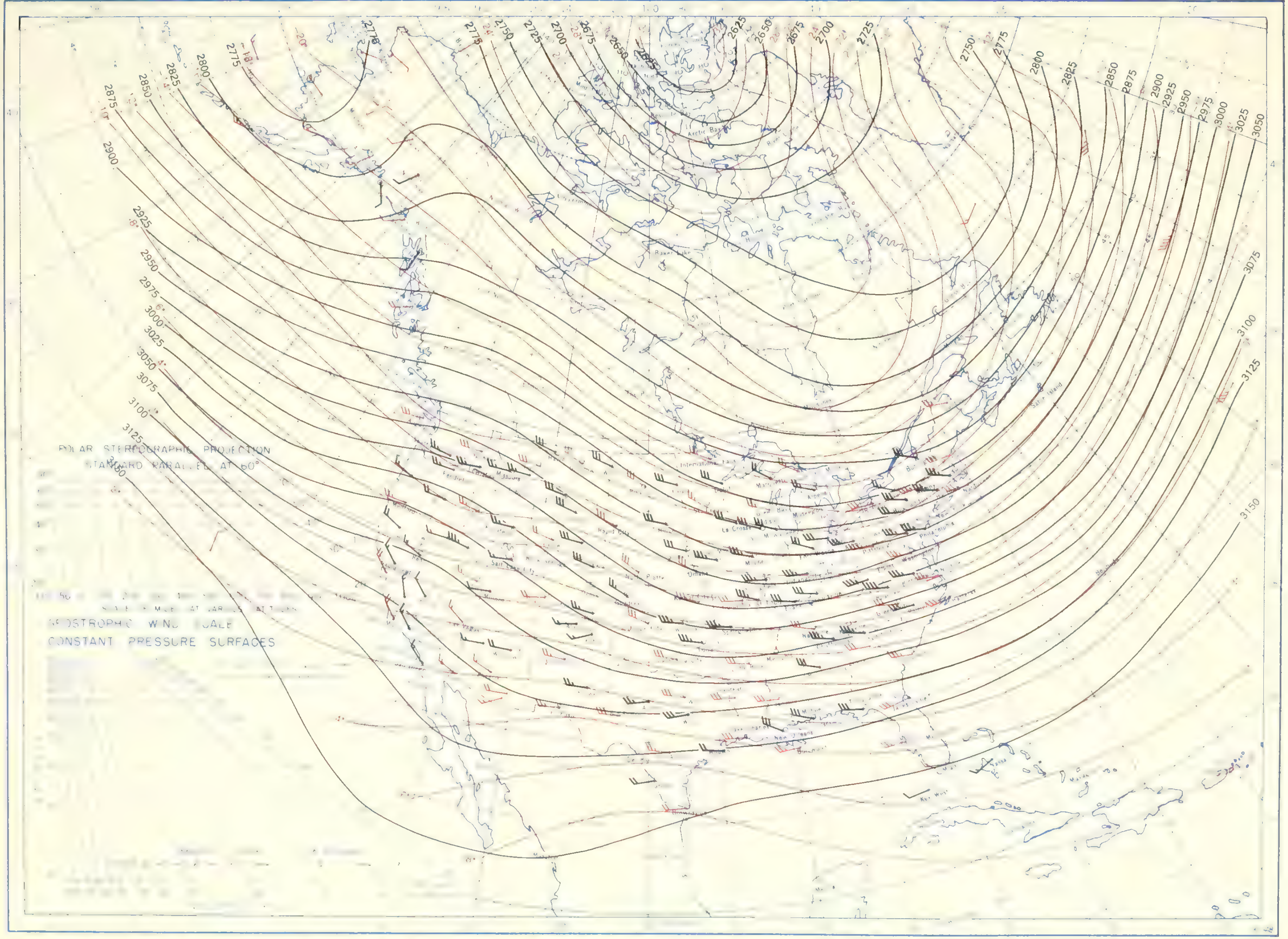
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 850-mb. Pressure Surface, Average Temperature in °C. at 850 mb., and Resultant Winds at 1500 Meters (m.s.l.), March 1956.



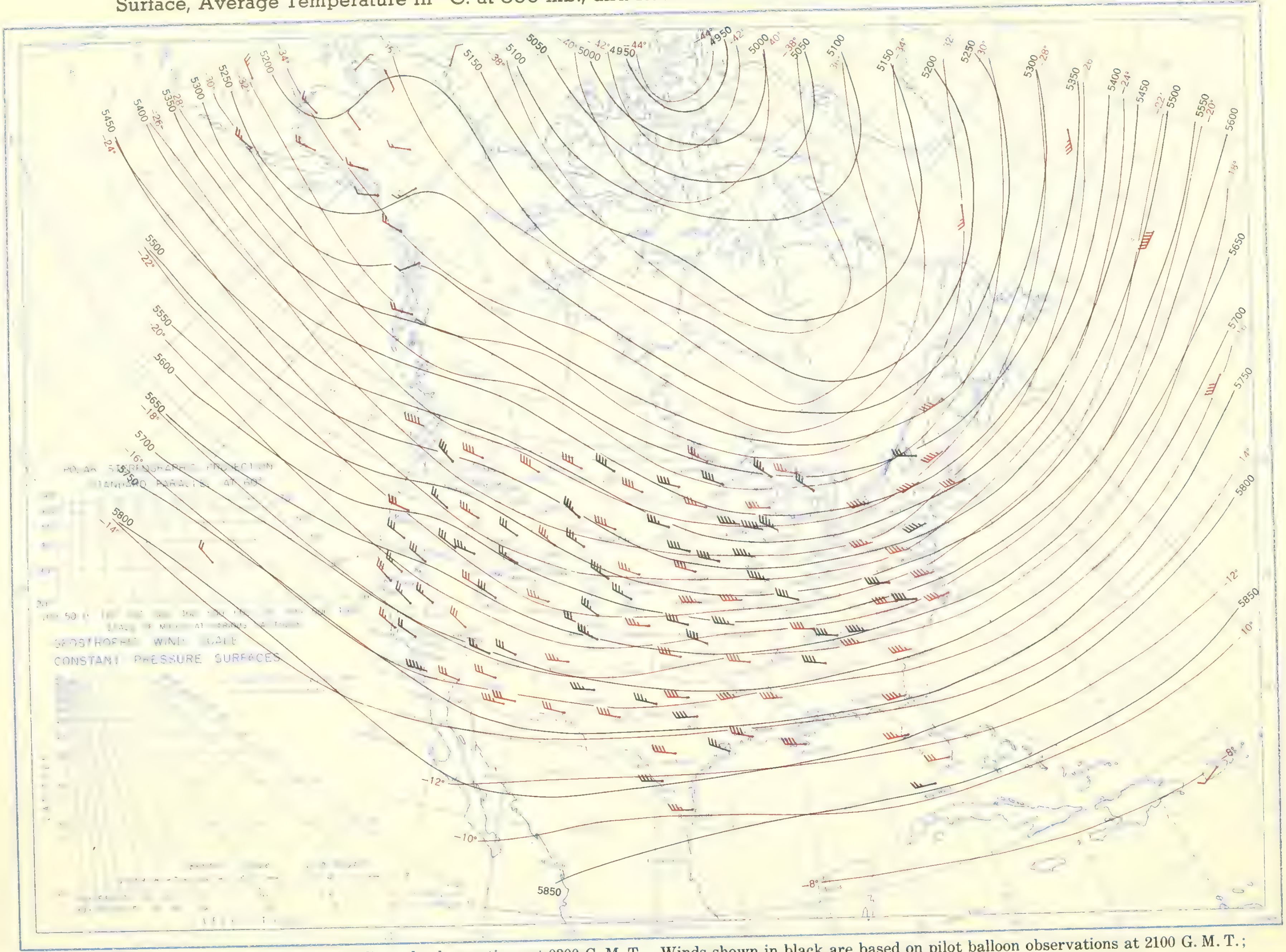
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; [illegible] 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 700-mb. Pressure Surface, Average Temperature in °C. at 700 mb., and Resultant Winds at 3000 Meters (m.s.l.), March 1956.



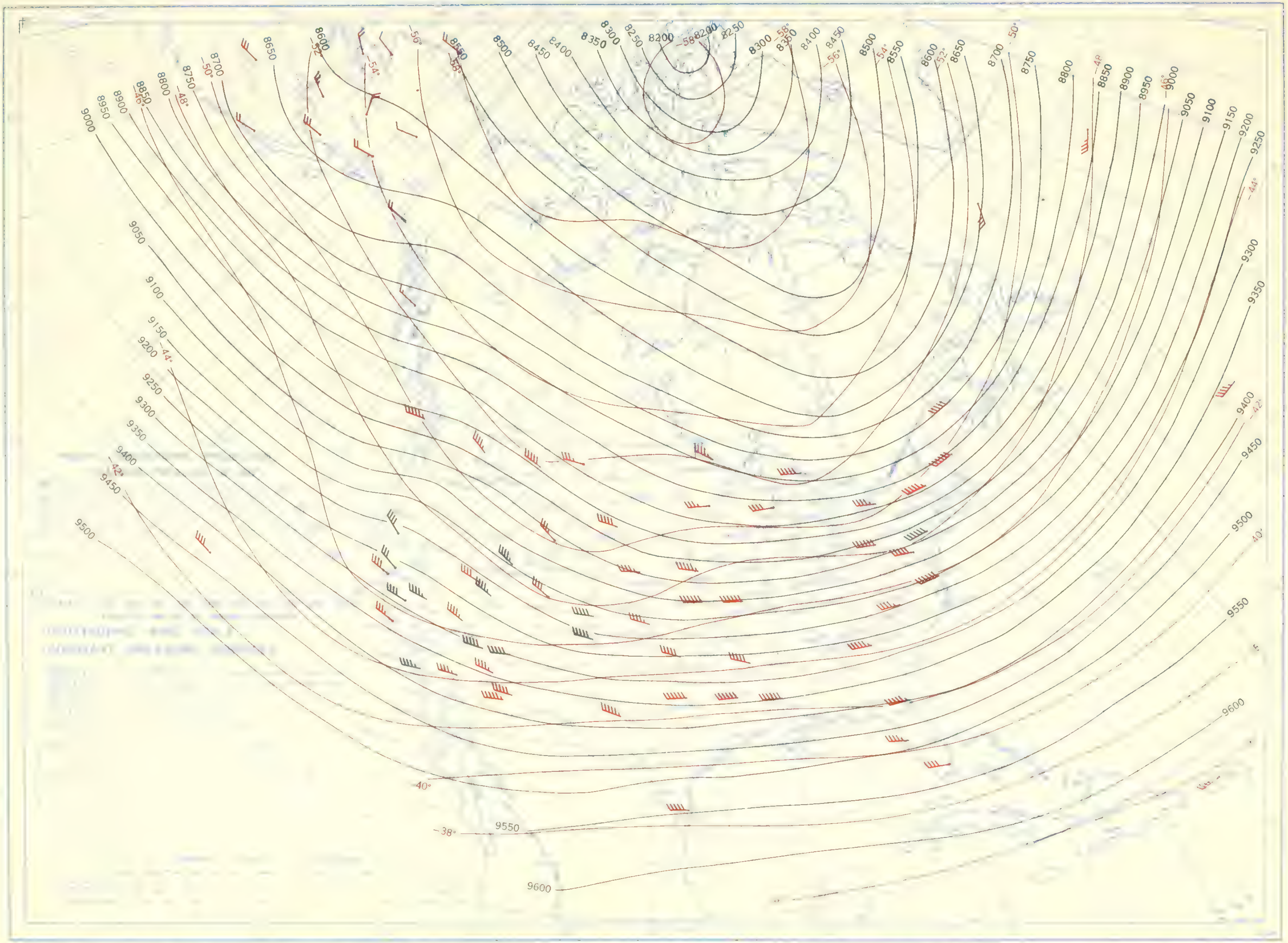
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIV. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 500-mb. Pressure Surface, Average Temperature in °C. at 500 mb., and Resultant Winds at 5000 Meters (m.s.l.), March 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Surface, Average Temperature in °C. at 300 mb., and Resultant Winds at 10,000 Meters (m.s.l.), March 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

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APRIL 1956
Volume 7 No. 4

ASHEVILLE: 1956

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CHARTS I-XV

NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 4 APRIL 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

Drought-breaking rains in California, parts of the upper and middle Mississippi Valley, and in Florida and adjacent areas, below-normal temperatures everywhere, and continued drought with occasional duststorms in the western portions of the central and lower Great Plains were the main features of the weather of April. Snowfall, heavier than usual in most northern areas, was featured on the 7th and 8th by the worst April snowstorm in Maine, Massachusetts, New Hampshire, and Vermont in 23 years. The month's chief severe storm outbreaks, occurring in the Midwest on the 3d and in the South on the 15th, were highlighted by very destructive tornadoes in Michigan and Alabama.

Several low pressure areas crossed the Southern States in the course of the month resulting in higher than normal average wind speeds there for April. A number of stations also recorded their lowest pressure for April.

TEMPERATURE.--Somewhat on the warm side in the Pacific Northwest, April was relatively cool elsewhere. East of the Rockies cold air intrusions, occurring at about weekly intervals, kept temperatures below seasonal levels virtually throughout the month in northern areas and from about the 7th through the 24th in most of the South. Extremes for the month, well within the limits of former records, ranged from -17° at Obsidian, Idaho, and Lake Yellowstone, Wyo., on the 6th to 104° at Rio Grande City, Tex., on the 3d and Cow Creek, Calif., on the 23d.

Owing to the cold weather, growth of crops and other vegetation was about 1 to 2 weeks later than usual during the month in most middle and some southern areas east of the Rockies, thus reducing their vulnerability to recurring freezes. Some damage to fruit and early vegetables was reported, however, from Tennessee, Georgia, and South Carolina on the 21st and from Maryland and Delaware on the 25th. In the Far West some fruit was damaged in Idaho and western Colorado on the 6th.

PRECIPITATION.--Precipitation totaled 2 inches or more in Missouri, Arkansas, Louisiana, eastern portions of Texas and Oklahoma, and virtually all areas east of the Mississippi. Dry conditions were relieved somewhat in northwestern Illinois, Iowa, parts of eastern Kansas, southern Minnesota, Missouri, and central and eastern Oklahoma.

The prolonged dry spell in Florida was also relieved by 2 to over 4 inches of rain which fell over most of the Peninsula, the heaviest amounts being recorded from the 24th to the 26th. Amounts were light, however, in the extreme southwestern portion, diminishing from 2 inches along a line joining Tampa and Miami to a negligible amount at Key West where only 0.14 inch was measured since February 12, one of the driest periods there since 1870.

California, particularly southern and central portions, where dry conditions had persisted since early March, was also favored with generous rains about midmonth and with lighter amounts again on the 26th and 27th. Totals ranged from 1 to over 2 inches.

At the end of the month drought continued to plague eastern Colorado, the western two-thirds of Kansas, the northwestern third of Oklahoma, about one-half of Texas (mostly in central and western portions), and eastern New Mexico. Dust and lack of rain further deteriorated small grains and pastures, and dimmed other crop prospects. Some moisture deficiencies at the end of the month were as follows: Norfolk, Nebr., 12.90 inches for past 16 months; Lincoln, Nebr., 9.07 inches for the past 12 months; also for past 12 months in Texas, Amarillo, 2.33 inches, Del Rio, 3.61, and San Antonio 6.70 inches. April precipitation totaled less than 1 inch in nearly all this large area, and less than one-half inch in New Mexico and much of western and central Texas.

Precipitation was also light (generally less than one-half inch) in North Dakota, eastern Montana, and the Pacific Northwest, but the combination of soil moisture reserves, absence of high temperatures, and the small moisture requirements of vegetation prevented serious drought. In the Pacific Northwest, Portland, Oreg., and Spokane, Wash., measured only 0.50 and 0.08 inch respectively for their driest April on record.

SNOWFALL.--Snowfall during April, although both frequent and unusually heavy in northern areas east of the Rockies, was particularly notable for the storm in the Northeast on the 7th and 8th when heavy falls of 2 feet or more were reported from both New York State and New England. Eastern Long Island reported a 16-inch fall, and New York City's 2.7 inches was its heaviest April fall in 69 years. About this same time snowfall also occurred westward to the Rockies with heavy amounts for the season in western Nebraska and Kansas. Dodge City, Kans., reported 5.6 inches on the 8th and 9th for one of the heaviest late April snows on record there, and 12 inches fell at Lander, Wyo., on the 8th. A fall at Cincinnati on the night of the 7th left 1 inch on the ground. In the far Southwest a 1-inch snow at Tucson, Ariz., on the 2d was the first measurable snowfall in April there during the period of record beginning in 1895, and a trace fell at El Paso, Tex., on the same date. Lighter snows occurred in northern areas east of the Rockies during the last decade. Atlantic City, N. J., reported 0.4 inch on the 24th for the latest measurable amount there in 73 years of record. Alpena, Mich., reported 4.6 inches on the 29th, a record for so late in the season, and Rochester, Minn., measured 7.1 inches for a similar record. At the end of the month Syracuse, N. Y., reported 146.8 inches for the season, a new record.

At the end of the month the snow cover in the Northeast had retreated to mountain and forest areas in northern New York and New England. In north-central areas the cover, limited to sections near the Canadian Border, was melting with flooding beginning along the Red River. In the Far West the snowpack in central and northern mountain ranges remained unusually heavy, and streams were rising in northern areas as the result of melting caused by mild temperatures during the last 2 weeks of the month.

DESTRUCTIVE STORMS.--Severe local storms were particularly numerous in central areas from the 2d through the 5th resulting in several deaths, scores of injuries, and many millions of dollars damage. During this period tornadoes causing $1,000,000 or more damage occurred in Oklahoma on the 2d and in Kansas, Tennessee, Wisconsin, and Michigan on the 3d. Two such storms occurred in Michigan, one killing 18 persons, injuring 340, and causing property damage estimated at $10,500,000 and the other injuring 12 persons and causing $1,000,000 damage.

Another storm outbreak occurred in the Southern States on the 15th when hail caused about $300,000 damage in Arkansas and a tornado in the outskirts of Birmingham, Ala., killed 25 persons, injured 200, and caused damage estimated at $1,500,000.

The heavy snowstorm in the Northeast on the 7th and 8th caused about one-half million dollars damage in New England and $100,000 in New Jersey.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

APRIL 1956

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	92	29+	3 Stations	28	8+	Russellville	10.86	Wallace 3SW	0.47
Arizona	do	99	22+	2 Stations	3	3	Young 12N	2.45	14 Stations	.00
Arkansas	Booneville	90	26	Lead Hill	22	8	Burdette	9.05	Taylor	1.78
California	Cow Creek	104	23	2 Stations	-10	2+	Crystal Lake	7.38	6 Stations	.00
Colorado	2 Stations	93	26	Sugarloaf Reservoir	-13	4	Wolf Creek Pass 4W	6.06	2 Stations	.00
Connecticut	Kent	85	28	Norfolk 2SW	13	2	Norfolk 2SW	6.22	Storrs	2.65
Delaware	2 Stations	85	28+	Georgetown 5SW	24	1	Wilmington Porter Res.	3.45	Georgetown 5SW	2.10
Florida	Coconut Grove 7S	95	8	Jasper 9ESE	34	21	Madison	6.74	Key West WB City	.12
Georgia	Americus 4ENE	93	29	Blairsville Exp Sta.	22	21	Helen	10.44	Montezuma 1NE	1.14
Idaho	2 Stations	88	20+	Obsidian 4NNE	-17	6	Island Park Dam	2.50	2 Stations	.00
Illinois	Quincy	91	27	2 Stations	19	24	Albion	5.71	New Boston Dam 17	1.37
Indiana	Evansville	87	27	do	19	19+	Warsaw	7.01	Covington	1.48
Iowa	Bedford	94	27	Atlantic 1NE	9	24	Cedar Rapids No. 2	5.48	Chariton 3E	.60
Kansas	2 Stations	99	26+	Johnson 11ESE	12	7	Valley Falls	4.70	Richfield 10WSW	T
Kentucky	Barbourville	92	28	3 Stations	22	21	Munfordville	7.34	Louisville Upper Gage	2.37
Louisiana	2 Stations	90	29+	Converse	33	12+	Tallulah Delta Lab.	8.44	Gueydan 5S	.80
Maine	Sanford 2NNW	75	28+	2 Stations	7	1+	Machias	4.57	Orono	1.70
Maryland	Hancock Fruit Lab.	91	29	Oakland 1SE	15	1	Snow Hill	4.71	Ocean City	.47
Massachusetts	Lake Cochituate	89	29	West Cummington	8	2	Lawrence	5.93	Sandwich	2.15
Michigan	Bloomingdale	82	3	Vanderbilt Trout Sta.	0	1	Kalamazoo State Hosp.	5.52	Ontonagon	.64
Minnesota	Austin 4S	77	2	Cass Lake For. Exp. Sta.	8	28	Indus	3.48	Argyle	.06
Mississippi	3 Stations	90	29+	Ripley	29	8	Pontotoc	12.50	2 Stations	1.58
Missouri	Albany	93	27	Tarkio	16	24	Willow Springs	5.47	Albany	.66
Montana	Miles City	83	20	Yellowstone Pk. NE Ent.	-5	6	Red Lodge	4.69	Savage	T
Nebraska	Falls City	93	27	2 Stations	7	17+	Lynch	3.55	2 Stations	.30
Nevada	Overton	97	24	Ely WB AP	7	2	Austin	3.50	Overton	.03
New Hampshire	Windham	82	28	First Conn Lake	-1	2	Mount Washington	6.18	West Lebanon	1.97
New Jersey	Lakewood 2ENE	88	28	Phillipsburg	14	8	Canistear Reservoir	6.29	Belleplain	1.81
New Mexico	Jal	96	26	Eagle Nest	-2	7	Rutledge Ranch	1.10	37 Stations	.00
New York	4 Stations	85	28	Paul Smiths	0	2	Liberty	7.63	Pulaski	1.55
North Carolina	New Bern 3NW	93	3	Bluff	19	21	Coweeta 8	10.37	2 Stations	1.76
North Dakota	Marmarth	79	20	Munich 4SW	-5	8	Wahpeton State School	2.62	5 Stations	T
Ohio	Ironton	90	27+	2 Stations	18	1	Montpelier	6.01	Glandorf 1SW	1.23
Oklahoma	Hollis	100	26+	Kenton	18	10	Quapaw	6.10	5 Stations	.00
Oregon	2 Stations	90	19+	Odell Lake Water Pan	5	3	Detroit Dam PH	3.09	6 Stations	.00
Pennsylvania	Newport	91	29	Kane 1NNE	5	1	Kregar 4SE	7.19	Warren	1.48
Rhode Island	2 Stations	76	28	Kingston	22	13	Austin	4.75	Block Island WB AP	1.99
South Carolina	Saluda	90	30	Union 7SW	25	21	Sassafras Mountain	8.83	Myrtle Beach CAA AP	1.58
South Dakota	2 Stations	81	13+	Deerfield 5NW	3	29	Wagner	3.50	Pollock	.07
Tennessee	Clarksville	90	27	Mountain City 2	21	21	Clinton	10.46	South Nashville	2.63
Texas	Rio Grande City	104	3	2 Stations	20	9+	Corpus Christi	9.20	Memphis	.00
Utah	St. George PH	88	22	Silver Lake Brighton	-6	6	Silver Lake Brighton	3.92	Cisco	.02
Vermont	2 Stations	80	29	Somerset	-3	2	Somerset	5.35	Waitsfield 1S	1.56
Virginia	4 Stations	90	28+	3 Stations	18	1	Meadows of Dan 5SW	7.47	Fredericksburg	1.58
Washington	5 Stations	89	20+	Rainier Paradise RS	11	1+	Startup 1E	3.77	9 Stations	.00
West Virginia	2 Stations	92	28+	Spruce Knob	11	1	Cranberry Glades	6.43	Birch River 6SSW	1.19
Wisconsin	do	80	3	Stanley	0	30	Burlington	5.35	Cumberland	.75
Wyoming	Torrington Exp. Farm	78	21	Lake Yellowstone	-17	6	Big Horn 5SW	3.37	Hat Creek 15NNE	.20
Puerto Rico	Caguas	94	12	Guineo Reservoir	50	24	Rio Blanco 1800 Ft.	15.33	Yauco 1S	1.15

+ And also on a later date or dates.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

Table 2

APRIL 1956

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover (tenths sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In.	In.	In			In.	In	M p h		M p h			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	990.4	1015.8	73	49	60.8	-1.1	86	29	35	17	0	0	45	62	5.47	0.82	3.02	6	4	0.0	0	9.5	S	56	SW	15	10	6	14	5.4	68
Mobile	211	1008.1	1016.3	76	56	66.1	-.6	86	6	46	10+	0	0	54	72	2.15	-2.95	1.74	4	1	.0	0	10.8	S	--	---	--	7	8	15	6.5	--
Montgomery	198	1008.4	1016.1	76	51	63.2	-1.5	87	28+	40	20	0	0	49	66	2.03	-2.78	.78	5	3	.0	0	8.3	S	38	S	15	9	9	12	5.6	68
ARIZONA																																
Flagstaff	6993	------	------	56	26	40.6	-1.5	67	22+	10	3	0	26	--	--	.86	-.40	.59	5	2	5.1	3	----	---	--	---	--	10	9	11	5.1	--
Phoenix	1114	972.2	1011.1	80	52	66.1	-1.0	91	23	42	4	2	0	36	35	.03	-.32	.03	1	0	0	0	5.7	E	•29	NNW	19	13	13	4	3.6	87
Prescott	5014	844.2	1012.4	66	35	50.6	-2.3	78	22	22	2	0	10	--	--	.37	.43	.15	5	1	T	T	10.5	SSW	61	S	26	11	13	6	4.6	80
Tucson	2558	923.1	1010.5	79	49	64.2	.8	89	23+	34	2	0	0	26	28	.31	.01	.31	2	0	1.0	1	7.8	SE	34	SW	1	17	7	6	3.4	93
Winslow	4880	848.6	1010.2	68	37	52.3	-1.7	81	23	23	4	0	7	18	34	.42	-.07	.20	6	4	.1	T	9.9	WSW	•38	SW	1	14	5	11	4.4	--
Yuma	199	1006.1	1011.3	86	54	70.1	-2.7	98	22+	42	2	11	0	30	27	T	-.10	T	0	0	.0	0	8.9	WNW	35	NW	1	21	7	2	2.2	92
ARKANSAS																																
Fort Smith	458	997.3	1014.0	71	47	59.0	-3.6	87	13+	34	8	0	0	44	62	2.77	-1.72	1.05	10	7	.0	0	9.0	ENE	37	SW	28	12	8	10	4.9	63
Little Rock	257	1001.4	1014.3	71	50	60.9	-1.6	87	28	38	8	0	0	45	61	4.64	-.52	2.11	9	5	.0	0	10.8	S	29	WNW	6	12	5	13	5.5	60
Texarkana	361	------	------	73	52	62.6	-2.4	86	28	41	10	0	0	--	--	3.25	-2.05	1.36	9	8	.0	0	----	---	--	---	--	--	--	--	---	--
CALIFORNIA																																
Bakersfield	489	996.6	1014.8	75	50	62.4	-.6	90	20	40	1+	1	0	43	54	.94	.19	.84	5	0	.0	0	6.8	N	•23	N	9+	12	8	10	4.8	--
Bishop	4108	871.0	1011.5	69	37	52.9	-1.8	84	23	20	3	0	8	--	--	2.26	2.01	1.47	4	0	8.8	3	----	---	--	---	--	13	6	11	4.9	--
Blue Canyon	5280	837.1	1013.9	52	36	44.2	-.9	67	19+	24	1	0	12	--	--	3.45	-1.20	1.63	9	1	26.3	8	----	---	--	---	--	10	6	14	6.2	--
Burbank	699	988.8	1014.9	68	49	58.4	-2.1	86	20	39	1+	0	0	47	70	4.00	2.79	2.80	7	1	.0	0	4.3	S	•18	S	11	8	8	14	6.3	--
Eureka (U)	43	1015.6	1018.0	54	45	49.5	-1.1	61	21	39	3+	0	0	--	--	.31	-2.57	.13	6	0	.0	0	7.9	---	28	NW	1	6	8	16	6.8	50
Fresno	331	1003.1	1014.9	72	47	59.6	-1.9	87	20+	35	3	0	0	44	62	1.38	.42	.44	9	0	.0	0	6.1	NW	26	SW	11	13	5	12	4.8	79
Los Angeles (U)	312	------	------	67	51	58.7	-2.8	86	20	42	2	0	0	48	74	3.72	2.55	2.05	6	1	.0	0	6.3	---	32	W	1	8	10	12	5.9	56
Los Angeles	99	1011.5	1015.0	65	52	58.7	-.5	73	20	43	2	0	0	50	76	2.07	1.11	1.20	8	1	.0	0	7.7	W	%50	NW	1	8	9	13	6.2	--
Mt. Shasta (R)	3544	891.3	1015.5	61	35	47.9	1.2	77	20	25	3	0	8	--	--	.54	-2.52	.14	5	0	T	T	----	---	--	---	--	10	9	11	5.8	--
Oakland	3	1015.6	1016.1	63	46	54.7	-.9	76	6+	38	12	0	0	45	74	1.26	-.20	.61	5	0	.0	0	9.6	W	•25	W	7+	13	7	10	4.7	--
Red Bluff	341	1002.4	1014.9	71	48	59.7	-.3	89	19	39	1	0	0	39	53	1.27	-.52	.60	6	2	.0	0	8.9	SSE	28	SE	25	10	4	16	5.7	70
Sacramento	17	1013.9	1014.7	72	45	58.6	.4	85	20+	39	1+	0	0	42	63	1.44	.06	.64	7	2	.0	0	8.7	SW	42	SW	24	15	3	12	4.6	73
Sandberg (R)	4517	860.8	1013.2	56	40	48.0	-2.5	73	22	27	1	0	7	--	--	2.68	1.94	2.01	8	1	12.6	9	16.2	---	•43	NNW	1	14	4	12	4.9	--
San Diego	19	1012.2	1015.5	64	53	58.8	-1.7	70	21	44	2	0	0	49	72	1.56	.73	.99	8	0	.0	0	8.8	WNW	32	S	13	6	11	13	6.3	52
San Francisco (U)	52	------	------	60	48	54.4	-1.3	76	6	44	11	0	0	--	--	1.68	.19	.85	7	0	.0	0	9.5	---	27	W	7	15	5	10	4.3	68
San Francisco	8	1015.6	1016.2	63	46	54.3	.2	78	6	39	3+	0	0	46	80	1.15	-.14	.57	5	0	.0	0	10.0	WNW	28	WNW	2+	14	7	9	4.6	--
Santa Maria	238	1007.1	1016.1	62	43	52.6	-3.2	72	6+	33	4	0	0	46	79	1.99	.79	1.03	7	0	.0	0	7.9	WNW	•27	SW	11	11	8	11	5.4	--
COLORADO																																
Alamosa	7538	768.0	1014.2	57	23	39.9	-1.8	69	25+	8	7	0	27	--	--	.58	.04	.35	6	1	3.3	3	----	---	--	---	--	11	14	5	4.9	--
Colorado Springs	6173	807.7	1014.2	58	30	44.1	-2.4	77	26	18	3+	0	20	23	52	1.10	-.30	.60	7	2	4.7	2	12.6	N	•35	N	8	8	9	13	5.8	--
Denver	5292	834.7	1012.3	59	32	45.5	-2.0	77	26	21	7	0	16	22	48	.72	-1.33	.28	7	2	3.7	1	12.4	SSW	33	NW	5	6	8	16	6.7	62
Grand Junction	4849	856.1	1011.1	65	40	52.4	.6	77	22+	26	6	0	5	23	38	.24	-.51	.15	7	2	T	0	10.3	ESE	52	SW	1	7	9	14	6.3	56
Pueblo	4639	854.0	1012.5	63	35	49.0	-.8	84	26	23	3	0	11	26	48	1.15	-.09	.84	6	1	.4	T	9.9	W	41	N	8	8	12	10	5.4	79
CONNECTICUT																																
Bridgeport	7	1012.1	------	53	37	45.1	-1.2	74	28	29	1+	0	8	--	--	2.88	-.61	.87	12	3	T	T	----	---	--	---	--	9	5	16	6.4	--
Hartford	169	1006.0	1012.1	53	33	42.9	-5.1	78	28	20	2	0	18	33	71	3.58	.02	.77	13	2	5.3	6	11.6	S	47	NE	8	6	7	17	6.8	44
Middletown (U)	133	------	------	54	32	43.1	---	79	28	21	2	0	19	--	--	3.08	----	.70	13	4	3.0	2	----	---	55	ENE	8	--	--	--	---	--
New Haven	6	1011.6	1012.2	52	36	44.1	-2.0	71	30	27	13	0	10	--	--	3.31	-.58	.99	15	4	2.3	2	7.9	---	26	NE	8	8	5	17	6.6	54
DELAWARE																																
Wilmington	73	1009.3	1012.7	60	39	49.9	-1.9	85	28+	30	1	0	3	38	67	2.80	-.84	1.06	13	1	T	T	10.3	NW	--	---	--	7	8	15	6.6	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	64	45	54.5	-.2	87	28+	32	1	0	1	--	--	2.18	-1.02	.67	10	1	.0	0	9.2	---	30	NW	16	--	--	--	---	--
Wash. Nat'l. AP	14	1008.2	1012.6	63	44	53.6	-.8	87	28	31	1	0	2	37	58	2.06	-1.00	.60	8	1	.0	0	12.2	SW	39	NW	18	6	13	11	6.1	61
FLORIDA																																
Apalachicola (U)	13	1015.0	------	73	59	66.3	-1.2	80	30	50	12+	0	0	--	--	2.92	-1.36	1.36	5	2	.0	0	8.5	---	34	E	24	10	11	9	5.1	65
Daytona Beach	31	1014.9	1016.5	79	55	67.1	-1.9	90	4+	42	1	3	0	54	66	2.42	-.51	1.11	5	1	.0	0	11.7	WSW	•39	WSW	11	9	10	11	5.5	--
Fort Myers	15	1015.8	------	84	58	70.9	-2.1	90	30	47	13	1	0	--	--	3.50	1.13	2.16	4	4	.0	0	9.8	---	•35	WNW	11	11	13	6	4.4	--
Jacksonville (U)	18	------	------	78	59	68.5	-.6	86	6+	48	12	0	0	--	--	2.64	-.40	----	5	--	.0	0	----	---	--	---	--	--	--	--	---	--
Jacksonville	24	1015.5	1016.5	80	57	68.2	-.2	88	3+	45	1	0	0	52	63	2.33	-1.01	1.61	4	0	.0	0	10.6	SE	39	SE	10	9	7	14	5.5	69
Key West (U)	9	1014.8	------	83	70	76.7	-.3	89	30	64	13+	0	0	--	--	.12	-2.28	.05	4	1	.0	0	----	---	22	W	12	12	15	3	4.2	71
Lakeland (U)	214	------	------	81	60	70.7	-.9	89	29	50	12	0	0	--	--	3.26	.39	1.87	7	3	.0	0	---	---	--	---	--	11	10	9	5.0	72
Miami (U)	8	------	------	78	67	72.5	-1.6	88	7	54	13	0	0	--	--	3.21	-.23	2.67	5	--	.0	0	----	---	50	SW	10	--	--	--	3.7	75
Miami	8	1015.1	1016.4	82	66	73.9	-1.0	93	7	53	13	1	0	62	69	2.28	-1.71	1.94	6	4	.0	0	12.1	SSE	52	SSW	10	7	18	5	5.2	--
Miami Beach	9	------	------	79	69	74.1	-1.3	88	7	57	13	0	0	--	--	2.68	.07	2.09	5	--	.0	0	----	---	--	---	--	--	--	--	---	--
Orlando	106	1012.6	1016.9	82	58	70.2	-1.4	91	6	50	12	2	0	55	67	4.03	1.07	1.89	5	3	.0	0	10.8	WNW	50	NNE	25	9	10	11	5.5	--
Pensacola (U)	13	1014.0	------	73	59	65.8	-1.2	81	6	47	10	0	0	--	--	2.60	-2.30	1.94	5	1	.0	0	----	---	29	SE	10	--	--	--	---	61
Tallahassee	64	1013.6	1016.1	76	53	64.7	-2.5	85	28	42	1+	0	0	52	70	1.90	-2.59	.85	8	3	.0	0	7.2	NW	--	---	--	7	9	14	6.2	--
Tampa	19	1015.6	1016.9	80	60	69.9	-1.6	88	27+	51	20+	0	0	57	70	2.08	-.43	1.53	7	4	.0	0	10.8	W	•29	S	10+	10	8	12	5.6	73
West Palm Beach	15	1014.5	1016.0	81	64	72.7	-1.1	90	7	53	13	1	0	61	70	1.26	-2.87	.69	4	0	.0	0	12.8	ESE	•46	W	11	11	13	6	4.9	--
GEORGIA																																
Atlanta	975	974.0	1015.7	72	50	61.0	-.7	88	30	39	8+	0	0	45	60	5.18	.76	1.78	8	4	.0	0	14.0	WNW	68	SW	15	12	9	9	5.1	66
Athens	798	985.8	1014.9	72	47	59.6	-2.1	86	30	34	17	0	0	45	63	6.73	2.14	2.00	8	4	.0	0	12.3	WNW	•39	NE	11	11	9	10	5.5	--
Augusta	143	1008.1	1014.7	75	48	61.6	-3.3	89	30	31	21	0	1	47	63	3.39	-.09	2.47	6	3	.0	0	9.3	W	•35	WSW	7+	11	4	15	5.7	--
Columbus	385	1001.5	------	76	49	62.3	-1.1	88	28+	36	17	0	0	--	--	2.36	-1.87	.93	7	3	.0	0	----	---	--	---	--	13	5	12	5.4	--
Macon	356	1001.5	1015.2	77	51	64.2	-1.5	89	28+	38	21	0	0	47	59	1.52	-2.29	.82	7	4	.0	0	11.2	WNW	57	S	15	13	6	11	5.2	71
Rome	637	992.0	------	72	44	58.1	-2.4	88	28	29	21	0	3	--	--	5.78	1.16	2.52	6	4	.0	0	----	---	--	---	--	11	11	8	5.2	--
Savannah	48	1012.8	1015.3	77	53	64.7	-1.1	86	4	40	21	0	0	51	67	3.62	1.15	2.28	3	1	.0	0	11.3	W	36	SW	15	9	7	14	5.8	73
Thomasville	283	------	------	77	55	66.3	-1.1	91	28	46	11+	0	0	--	--	2.86	-1.44	1.13	6	3	.0	0	----	---	--	---	--	--	--	--	---	--
IDAHO																																
Boise	2842	917.7	1013.9	64	37	50.6	.7	81	21	23	3	0	8	31	52	1.62	.52	1.06	6	0	T	0	9.8	WNW	40	NW	1	9	14	7	5.7	82
Idaho Falls 46W (R)	4933	845.6	1013.5	59	29	44.1	1.6	76	21	15	6	0	19	--	--	.35	-.40	.13	8	0	T	T	8.5	---	a30	NE	11+	--	--	--	---	--
Idaho Falls 42NW (R)	4790	------	------	60	28	44.1	1.7	76	21	13	6	0	23	--	--	.64	.05	.36	8	--	---	--	----	---	--	---	--	--	--	--	---	--
Lewiston	1413	963.1	1014.7	66	40	53.4	2.0	85	21	28	6	0	4	--	--	.05	-1.09	.03	2	1	.0	0	----	---	--	---	--	4	16	10	6.2	--
Pocatello	4444	859.8	1013.1	60	33	46.4	.1	77	21	19	6	0	16	28	54	.47	-.85	.38	6	2	3.9	1	12.4	SW	61	S	7	8	6	16	6.7	67
ILLINOIS																																
Cairo (U)	314	1001.0	------	69	48	58.4	-1.6	85	27	38	17+	0	0	--	--	4.09	.13	1.24	14	5	.0	0	10.7	---	38	SW	27	14	6	10	4.4	67
Chicago	610	989.5	1012.5	56	38	47.2	-.9	81	3	29	23	0	6	31	58	4.65	1.83	1.57	11	7	T	0	11.2	NW	41	W	3	6	11	13	6.6	51
Moline	589	991.2	1013.6	59	35	47.1	-2.8	83	27	23	24	0	12	29	56	2.15	-.86	.91	8	5	.3	T	15.6	WNW	69	SW	3	9	5	16	6.1	58
Peoria	654	990.2	1012.6	60	37	48.8	-1.7	86	27	27	23+	0	8	32	54	3.12	-.32	2.18	8	5	T	T	14.7	---	51	W	7	9	7	14	6.2	57
Springfield	589	990.2	1013.4	62	38	49.8	-1.9	84	27	23	23+	0	10	33	57	3.22	-.20	2.05	11	4	T	T	15.2	WNW	50	W	6	9	6	15	6.4	55
INDIANA																																
Evansville	383	998.0	1013.9	65	42	53.4	-3.7	86	27	29	9	0	2	39	62	3.23	-.56	1.24	15	6	.0	0	11.4	SSW	45	SW	14	8	9	13	6.0	60
Fort Wayne	801	980.7	1012.2	58	36	47.0	-.8	79	27	25	20	0	11	34	66	2.05	-1.20	.84	12	6	2.9	1	14.1	WNW	43	S	3	4	7	19	7.2	44
Indianapolis	793	983.4	1013.4	59	39	48.9	-1.9	83	27	26	19	0	9	36	63	4.50	.65	2.14	12	8	.8	T	14.0	SW	60	W	7	7	7	16	7.0	57

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station ∅	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
INDIANA (Cont'd.)																																
South Bend	768	983.7	1012.1	56	35	45.4	-1.9	80	27	23	20	0	13	33	67	4.47	1.07	2.05	11	4	3.0	1	12.9	NW	•32	S	3	3	9	18	7.2	--
IOWA																																
Burlington	694	987.5	1013.6	61	36	48.2	-2.8	87	27	22	24	0	12	30	54	1.60	-1.83	1.28	8	4	T	T	14.0	WNW	56	SW	3	9	8	13	5.9	65
Des Moines	948	982.1	1013.6	60	35	47.6	-2.8	81	2+	25	7+	0	14	29	54	1.24	-1.21	.82	10	5	.3	T	16.1	NNW	57	W	3	8	9	13	6.2	69
Dubuque	1065	987.1	1012.7	56	32	44.1	-2.8	75	2	22	24	0	18	28	56	3.72	1.03	1.27	10	8	1.0	1	----	---	--	---	--	6	11	13	6.6	--
Sioux City	1094	972.6	1014.7	58	33	45.2	-4.0	84	1	21	8	0	17	26	51	1.85	-.29	.61	8	3	1.2	1	17.5	NNW	61	NW	7	9	9	12	5.7	70
Waterloo	870	------	------	57	32	44.6	-3.6	79	2	20	24	0	19	--	--	2.74	.35	1.14	10	5	T	T	16.4	---	--	---	--	--	--	--	---	--
KANSAS																																
Concordia (U)	1375	964.4	------	62	38	49.8	-4.2	88	1	27	17	0	5	--	59	1.06	-1.20	.46	9	2	3.3	1	9.3	---	30	NW	6	14	7	9	4.7	72
Dodge City	2594	925.2	1013.3	64	37	50.6	-3.2	94	26	25	10	2	10	26	48	.99	-1.27	.81	4	3	5.6	4	16.1	N	57	N	6	15	9	6	4.0	85
Goodland	3645	885.9	1013.8	60	30	45.1	-2.1	87	26	21	7	0	20	24	53	.67	-1.14	.39	7	1	4.7	3	12.5	N	•35	NE	27	9	6	15	6.2	--
Topeka	879	978.3	1014.6	65	38	51.6	-2.9	93	27	25	8	1	9	34	56	3.94	.44	1.88	6	6	1.0	T	13.4	NNW	51	SE	2	12	6	12	5.4	60
Wichita	1321	964.8	1013.6	66	41	53.1	-3.1	94	27	27	17	1	4	35	56	1.46	-2.06	1.05	4	6	.1	T	15.3	NNW	56	S	2	11	11	8	4.8	73
KENTUCKY																																
Lexington	979	978.0	1014.0	62	42	51.7	-1.2	84	27+	28	19	0	4	39	65	4.79	1.03	1.40	13	6	.2	T	12.6	S	--	---	--	4	9	17	6.7	--
Louisville	474	994.2	1013.4	64	44	54.0	-2.0	85	27	30	19	0	1	40	63	2.63	-1.38	.58	14	3	T	0	12.1	NW	40	SW	4	6	10	14	6.4	58
LOUISIANA																																
Baton Rouge	64	1012.9	1015.9	77	57	66.8	.0	88	30	45	12	0	0	55	71	3.88	-.62	2.54	9	2	.0	0	10.0	SSE	--	---	--	5	5	20	7.4	--
Lake Charles	12	1013.5	1015.0	77	59	68.2	.2	87	15+	44	10+	0	0	56	71	1.27	-3.00	.90	5	1	.0	0	9.2	SSE	•29	S	3	5	5	20	7.2	--
New Orleans (U)	9	1013.5	------	76	61	68.7	-1.1	86	4	47	10	0	0	--	--	4.17	-1.28	2.62	5	2	.0	0	7.5	---	24	NW	10	6	11	13	6.2	58
New Orleans	3	1013.5	1015.7	77	59	67.7	-.6	87	30	46	11	0	0	57	74	4.16	-1.24	2.35	6	2	.0	0	9.3	S	•29	NW	9	5	10	15	6.7	--
Shreveport	252	1005.1	1014.4	74	53	63.5	-3.3	86	28	41	11+	0	0	51	67	4.51	-.08	2.65	8	4	.0	0	9.4	S	--	---	--	4	11	15	7.0	57
MAINE																																
Caribou	624	987.7	1011.3	43	29	35.9	1.2	56	27	19	1	0	24	27	70	2.37	-.26	.83	14	0	5.2	16	10.3	NW	•34	SW	17	5	6	19	7.5	--
Portland	61	1008.5	1012.4	49	31	40.0	-1.9	71	28	21	2	0	20	31	73	3.38	-.37	.69	16	2	11.2	17	10.2	S	34	NE	7+	8	8	14	6.3	60
MARYLAND																																
Baltimore (U)	14	------	------	64	45	54.6	.3	90	28	35	1	1	0	--	--	2.55	-1.17	.91	11	--	----	--	----	---	--	---	--	--	--	--	---	--
Baltimore	146	1008.3	1013.1	63	41	51.6	-.8	89	28	25	1	0	4	37	62	2.18	-1.54	.76	11	1	.0	0	12.4	WNW	43	NW	16	6	15	9	6.0	69
Frederick	294	------	------	62	37	49.6	-3.3	87	29	21	1	0	10	--	--	2.10	-1.40	.78	11	1	.0	0	----	---	--	---	--	--	--	--	---	--
MASSACHUSETTS																																
Blue Hill Obs. (R)	629	988.2	1012.0	52	33	41.7	-2.0	78	28	27	1+	0	14	--	--	3.84	-.15	1.87	15	4	11.1	9	15.9	WNW	48	ENE	7	5	13	12	6.3	52
Boston	15	1007.1	1011.7	53	38	45.6	-1.6	83	28	32	9+	0	2	33	67	2.94	-.52	.83	14	3	3.2	3	17.6	WNW	•58	ENE	8	9	8	13	6.1	62
Nantucket	43	1012.0	1012.5	48	36	42.4	-1.2	66	30	29	12+	0	6	37	80	2.26	-1.19	.92	12	1	T	0	12.7	SW	49	E	8	7	9	14	6.2	63
Pittsfield	1153	968.8	------	49	30	39.4	-2.6	78	28	15	2	0	19	--	--	3.38	-.23	.65	16	4	14.0	12	----	---	--	---	--	--	--	--	---	--
MICHIGAN																																
Alpena (U)	587	988.8	------	45	31	38.1	-1.5	56	4	19	1	0	18	--	--	2.74	.59	.77	11	1	5.4	4	11.4	---	40	NW	18	7	8	15	6.7	52
Detroit	619	985.1	1012.2	56	36	45.7	-.7	74	27	27	20	0	10	33	67	3.78	.87	2.00	10	4	.7	T	10.9	NW	51	NW	28	5	5	20	7.5	49
Detroit (Willow Run)	722	982.7	1011.5	57	35	45.7	-.9	77	27	26	20	0	13	31	64	3.96	1.02	1.95	12	6	2.9	T	12.6	WNW	•35	WNW	21+	5	4	21	7.6	--
East Lansing (U)	856	------	------	55	34	44.6	-.7	76	3+	24	20	0	14	--	--	4.27	1.44	1.90	12	5	2.4	1	6.4	---	19	SW	3+	--	--	--	---	53
Escanaba (U)	594	989.2	------	43	30	36.4	-1.8	54	14	20	1	0	19	--	--	1.92	-.18	.75	11	2	1.2	2	12.4	---	37	N	28	6	8	16	6.7	59
Flint	761	983.4	1011.7	54	33	43.2	-1.2	75	27	24	20+	0	17	31	67	4.25	1.64	1.48	14	5	1.5	T	11.0	WNW	•44	SSW	3	5	6	19	7.3	--
Grand Rapids	681	986.5	1011.8	55	33	44.0	-.8	78	3	25	13+	0	18	31	66	4.39	1.49	2.16	11	7	5.6	3	11.0	W	46	S	3	3	9	18	7.5	55
Marquette (U)	677	984.4	------	43	30	36.4	-2.3	63	11	24	1+	0	21	--	65	2.16	-.35	.53	11	2	8.4	6	8.9	---	27	S	14	4	7	19	7.5	58
Muskegon	627	988.5	1012.0	52	33	42.4	-1.2	77	3	22	23	0	17	31	65	3.15	.81	1.10	13	7	6.0	1	----	---	--	---	--	9	4	17	6.6	--
Sault Ste. Marie	721	989.5	1012.5	42	28	34.8	2.0	51	11+	12	1	0	25	26	71	1.70	-.25	.75	15	1	1.7	15	11.1	WNW	•27	WNW	18	5	9	16	7.2	45
MINNESOTA																																
Duluth	1409	971.6	1013.7	42	25	33.7	-3.1	60	20	14	10	0	29	23	66	1.87	-.63	.80	9	1	9.9	27	15.2	NNW	47	NE	6	3	10	17	7.4	57
Intern'l Falls	1179	973.2	1015.3	43	22	32.4	-4.8	59	20	12	27	0	29	20	63	2.01	-.28	.79	9	1	11.6	16	13.1	NW	--	---	--	5	13	12	6.5	--
Minneapolis	830	985.1	1014.0	52	32	41.8	-4.2	68	13	24	7+	0	17	27	61	.67	-1.24	.25	7	1	1.1	1	13.9	NNW	47	NW	14	7	8	15	6.3	47
Rochester	1017	975.3	1013.1	52	29	40.5	-4.5	74	2	11	30	0	22	28	64	1.79	-.52	.77	9	2	7.4	7	11.8	NW	--	---	--	5	9	16	6.6	--
St. Cloud	1034	975.3	1012.8	50	27	38.5	-4.4	67	13	18	24	0	25	26	66	2.01	.05	.99	7	1	4.3	2	9.7	NW	--	---	--	6	10	14	6.6	--
MISSISSIPPI																																
Jackson	305	1003.3	1015.4	74	51	62.4	-2.5	86	28+	38	21	0	0	51	71	4.67	-.15	2.34	9	7	.0	0	8.3	SSE	32	NW	15	7	11	12	6.3	60
Meridian	294	1001.7	------	75	50	62.5	-1.8	88	28	37	20+	0	0	--	--	4.15	-1.31	1.82	7	5	.0	0	----	---	--	---	--	11	9	10	5.1	--
Vicksburg (U)	234	1006.1	------	74	56	64.8	-1.0	86	28	42	10	0	0	--	--	6.04	1.20	3.73	7	--	.0	0	8.9	---	29	S	1+	--	--	--	6.4	61
MISSOURI																																
Columbia	778	985.1	1013.7	64	40	52.4	-2.1	90	27	27	23	1	4	33	54	2.25	-1.55	1.51	7	5	T	T	13.0	WNW	56	NW	7	9	8	13	5.8	66
Kansas City	741	979.3	1014.5	65	43	53.6	-2.2	89	27	32	8	0	1	34	52	2.77	-.84	1.77	6	2	T	0	13.6	NW	47	SW	3	10	9	11	5.4	58
St. Joseph	809	------	------	64	38	50.9	-3.6	91	27	25	8	1	8	--	--	1.82	-1.53	1.32	8	5	T	0	14.3	---	•43	NW	7	11	6	13	5.3	--
St. Louis (U)	465	992.9	------	64	45	54.5	-2.0	87	27	32	24	0	1	--	--	2.98	-1.03	1.08	12	6	T	0	13.4	---	50	SW	1	10	9	11	5.7	56
St. Louis	552	992.9	1013.6	64	43	53.4	-2.2	89	27	31	8	0	2	35	53	2.85	-1.08	1.05	11	6	T	0	14.9	WNW	--	---	--	9	8	13	6.0	--
Springfield	1265	966.1	1013.9	65	41	52.9	-2.6	86	27	28	23	0	5	37	58	1.75	-2.59	.77	8	6	.1	T	15.0	S	49	NW	7	10	9	11	5.3	62
MONTANA																																
Billings	3568	891.0	1016.6	53	30	41.3	-4.9	75	15	19	3	0	23	28	62	1.59	.54	.58	11	0	12.8	5	12.7	NE	43	N	5	10	3	17	6.4	57
Butte	5530	827.6	1016.9	51	26	38.2	.0	68	20	11	2+	0	29	26	--	1.25	.21	.45	12	1	.1	1	7.4	NW	•35	W	5	8	6	16	6.4	--
Glasgow (U)	2277	942.4	1018.4	52	25	38.7	-5.7	76	20	17	3+	0	28	17	50	.07	-.93	.02	3	0	.2	T	10.2	ESE	•42	N	6	12	4	14	6.0	--
Great Falls	3664	888.3	1016.7	53	30	41.4	-2.9	74	15+	21	6+	0	19	22	51	.53	-.42	.33	6	1	4.3	1	12.8	N	43	SW	4	10	6	14	6.0	53
Havre	2488	927.5	1018.1	55	27	40.9	-4.2	77	20	20	11	0	26	21	51	.30	-.60	.12	5	0	2.8	1	8.1	---	36	W	4	12	7	11	5.4	58
Helena	3893	872.7	1016.7	55	29	41.8	-1.4	74	20	11	6	0	19	25	58	.67	-.21	.25	9	1	4.7	2	9.7	W	40	W	5	6	10	14	6.4	62
Kalispell	2965	------	------	55	32	43.5	-.2	73	15	19	6	0	15	--	--	1.35	.33	.64	7	1	1.0	T	----	---	--	---	--	9	6	15	5.8	--
Miles City	2629	932.3	1017.9	55	28	41.6	-4.4	79	20	17	7	0	22	21	--	.43	-.65	.20	5	0	4.1	2	11.3	NE	•35	NW	5	11	6	13	5.6	--
Missoula	3200	901.1	1016.3	59	33	46.0	1.3	77	20	21	6	0	15	29	57	2.46	1.56	1.53	8	0	3.5	3	7.8	W	38	SE	11	7	9	14	6.4	65
NEBRASKA																																
Grand Island	1841	948.2	1015.2	56	33	44.2	-6.7	84	1	22	24	0	15	31	65	1.96	-.26	1.18	9	3	2.0	2	14.1	N	--	---	--	11	8	11	5.4	--
Lincoln (U)	1166	------	------	60	37	48.4	-4.2	87	1	27	17	0	8	--	--	1.65	-.64	.72	8	3	.2	T	12.8	---	51	NW	2	11	12	7	5.0	64
Norfolk	1544	959.0	1015.9	55	31	43.3	-5.0	84	1	20	24	0	18	29	59	1.18	-1.10	.57	8	5	.4	T	----	---	--	---	--	8	8	14	6.2	--
North Omaha	1323	965.8	----	58	34	46.0	--	88	1	22	8	0	12	--	--	1.23	----	.47	5	3	.8	1	----	---	--	---	--	--	--	--	---	--
North Platte	2779	915.0	1015.1	55	29	41.9	-6.8	80	21	15	17	0	23	27	62	1.60	-.46	.86	8	2	9.9	7	12.0	N	59	N	3	13	4	13	5.4	63
Omaha	978	974.3	1014.5	60	36	48.4	-3.8	90	1	26	8+	1	10	29	52	1.19	-.96	.61	7	4	.2	T	14.9	N	50	NW	7	10	8	12	5.5	63
Scottsbluff	3950	877.4	1015.1	56	27	41.6	-4.5	75	21	16	7	0	26	24	56	1.54	-.45	.73	9	0	4.9	2	12.4	ESE	--	---	--	12	2	16	6.2	--
Valentine (U)	2587	922.5	------	53	27	39.7	-7.2	77	20	16	17	0	26	--	--	.98	-.99	.34	8	0	5.5	3	12.1	---	50	NW	5	10	6	14	5.9	60
NEVADA																																
Elko	5075	842.5	1014.2	59	30	44.6	.0	74	21+	17	3+	0	17	27	55	1.51	.58	.90	5	1	.8	1	6.5	WSW	•48	WSW	7	8	5	17	6.5	--
Ely	6257	806.0	1013.5	56	27	41.3	-2.4	72	22	7	2	0	24	24	55	.63	-.57	.24	4	1	4.7	5	11.7	---	47	S	13	9	5	16	6.4	63
Las Vegas	2162	945.1	1010.0	78	49	63.4	-2.2	92	23	34	3	2	0	20	23	.08	-.16	.06	2	1	.0	0	12.3	SW	•43	SW	10	15	11	4	3.7	85
Reno	4397	860.1	1014.5	62	30	46.2	-1.5	78	22	13	3	0	17	28	53	1.38	.92	.72	5	1	1.0	1	6.5	WNW	40	N	1+	10	6	14	5.7	89
Winnemucca	4299	865.6	1013.8	63	31	46.6	-.2	77	21	10	3	0	18	27	51	.78	-.05	.39	6	1	2.0	1	8.5	---	36	W	7	7	9	14	6.2	56

See footnotes at end of table.

CLIMATOLOGICAL DATA

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No of days (sunrise to sunset)				
												No of days							No of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths sunrise to sunset	Possible sunshine
	Ft.	Mb	Mb.	°F	°F	°F	°F	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p h		M p h.			0–3	4–7	8–10	0–10	%
NEW HAMPSHIRE																																
Concord	339	1001.0	1011.9	51	29	39.8	-3.2	78	28	18	2	0	21	37	73	3 34	0.26	0.64	13	2	9.9	17	6.4	NNW	37	N	8	9	6	15	6.2	52
Mt. Washington	6262	796.6	------	26	14	19.8	-2.2	40	29+	3	25	0	30	-	92	6 18	.31	1.30	23	2	25.7	41	31.5	W	%106	W	28	2	8	20	8.1	31
NEW JERSEY																																
Atlantic City (U)	8	1010.3	------	53	41	47.1	-2.3	79	30	31	1	0	1	--	--	2.71	.69	.92	10	1	.4	T	17.2	---	56	SW	16	9	6	15	6.2	46
Newark	11	1010.9	1012.4	57	39	47.8	-2.2	85	28	32	1+	0	3	35	64	3.04	-.23	1.17	13	1	3.4	3	11.1	WNW	•39	SSW	16	8	7	15	6.4	-
Trenton (U)	56	1005.1	1011.8	58	40	49.2	-1.5	83	28	33	1+	0	0	--	--	2.72	-.28	1.04	11	3	4.2	2	10.4	---	38	NW	16	8	7	15	6.1	57
NEW MEXICO																																
Albuquerque	5310	844.9	1009.6	70	41	55.3	-.2	84	26	30	4	0	5	17	26	T	-.53	T	0	0	T	0	11.1	SE	49	NW	8	15	12	3	3.5	88
Clayton	4969	842.2	1011.7	67	33	50.0	-1.0	85	26	25	3+	0	17	--	--	.24	-.89	.14	4	2	T	0	----	--	--	---	--	19	6	5	3.3	--
Raton	6379	801.9	1011.1	64	27	45.5	-1.4	81	26	13	4	0	23	-	--	.17	-.91	.12	2	1	1.0	T	----	---	--	---	--	11	12	7	5.0	-
Roswell	3612	890.3	1011.3	76	40	57.7	-2.0	91	26+	31	10	2	1	23	30	.03	-.72	.03	1	1	T	T	12.2	---	65	W	2	17	8	5	3.2	--
NEW YORK																																
Albany	277	1008.2	1011.9	52	33	42.6	-2.5	76	28	17	2	0	16	32	64	2.62	.01	.94	14	3	5.0	6	9.6	WNW	34	NE	8	3	9	18	7.1	55
Binghamton	1601	951.5	1011.2	50	32	40.6	-2.0	77	29	21	1+	0	18	31	73	3.84	.60	1.07	14	2	10.7	7	12.7	NW	52	W	4	6	6	18	7.4	51
Buffalo	693	983.3	1012.0	52	34	43.0	-.8	73	27	26	1	0	14	34	74	3.69	1 14	1.16	15	3	3.8	1	13.0	SW	52	SW	4	5	7	18	7.3	50
New York (U)	10	1000.3	------	56	41	48.1	-1.7	81	28	32	8	0	1	--	--	3.24	.02	1.48	13	3	2.7	2	----	---	48	NW	8	9	7	14	6.0	60
New York	19	1010.7	1012.6	56	41	48.4	-1.7	84	28	33	8+	0	0	35	64	3.31	.21	1.33	16	3	6.4	3	14.4	NW	54	E	7	8	6	16	6.4	--
Rochester	543	992.1	1011.7	51	33	42.2	-2.3	69	3+	24	1	0	15	34	76	4.14	1.50	1.11	16	3	7.4	6	12.9	WSW	57	W	4	5	8	17	7.1	50
Schenectady	217	------	------	52	36	44.0	-1.1	75	28	24	2	0	10	--	--	2.41	-.64	.77	13	2	3.0	3	----	---	--	---	--	11	12	7	4.8	--
Syracuse	424	990.2	1012.6	52	34	42.9	-3.1	69	28	22	2	0	14	32	69	3.35	.23	1.33	16	3	6.2	6	9.7	WSW	34	S	15+	5	7	18	7 1	46
NORTH CAROLINA																																
Asheville (U)	2203	------	------	65	43	54.0	-1.5	82	29	30	9	0	20	--	--	4.33	1.47	1.43	10	5	2.0	T	10.0	---	29	SW	14+	11	8	11	5.4	72
Charlotte	727	986.8	1014.4	71	46	58.7	-1.0	89	30	31	21	0	1	43	60	3.98	.81	1.37	10	3	.0	0	11.0	SSW	52	SW	7	10	8	12	5.4	65
Greensboro	891	982.6	1014.5	68	43	55.3	-1.8	83	30	27	21	0	4	39	60	3.69	.34	1.08	8	3	.0	0	11.8	SW	40	WNW	30	8	9	13	6 0	67
Hatteras (R)	4	1013.6	1014.3	64	53	58.2	-1.4	75	27+	42	12+	0	0	49	74	3.54	.46	1.67	8	5	.0	0	16.0	S	52	N	12	11	9	10	5.4	72
Raleigh	433	1000.3	1014.1	70	44	57.2	-1.3	87	30	28	21	0	4	43	62	4.74	1.21	1.75	7	1	.0	0	11.0	S	•32	WNW	7	7	12	11	6.0	68
Wilmington	30	1013.5	------	72	50	61.0	-1.2	85	30	35	9	0	0	--	--	2.67	-.04	2.67	4	0	.0	0	15.1	---	52	SW	15	10	8	12	5.0	72
Winston-Salem	967	979.0	1014.3	68	45	56.4	-1.1	84	30	30	21	0	2	39	57	4.02	.62	1.41	8	3	T	0	11.1	SW	•40	NNE	11	8	7	15	6.0	--
NORTH DAKOTA																																
Bismarck	1650	956.7	1018.6	50	25	37.4	-5.7	75	20	16	8	0	27	23	62	.11	-1.28	.04	4	0	.4	T	12.6	N	42	NW	14	6	9	15	6.7	65
Devils Lake (U)	1471	963.4	------	40	23	31.4	-8.6	60	20	4	8	0	29	--	--	.18	-1.26	.10	4	0	2.0	15	10.4	---	28	NE	26	8	10	12	5.8	70
Fargo	895	982.1	1017.4	44	26	35.0	-7.1	69	20	16	28	0	27	26	71	1.45	-.43	.85	7	0	4.7	5	18.1	N	49	NW	7	4	11	15	6.9	68
Williston (U)	1877	949.5	1018.7	50	26	37.6	-5.3	72	13+	16	7	0	26	21	53	.11	-.96	.06	3	0	.9	T	7 1	---	26	NW	13	7	10	13	6.4	59
OHIO																																
Akron	1210	974.6	1013.1	55	35	44.8	-2.3	78	28	25	1	0	16	34	70	3.51	.31	.72	17	5	4.5	2	13.3	SW	-	---	--	4	6	20	7.9	--
Cincinnati Obs.	761	------	------	60	41	50.9	-2.7	84	27	30	7+	0	4	--	--	3.69	.05	1.91	16	6	1.6	1	8.0	---	31	SW	4	--	--	--	---	43
Cincinnati	869	980.9	1013.0	60	40	50.0	-2.1	82	27	26	19	0	7	36	61	4.09	.50	1.81	15	6	.9	1	11.8	SSW	•39	WSW	4	4	6	20	7.3	--
Cleveland	787	984.2	1012.3	55	37	45.9	-1.4	76	27	28	1+	0	11	34	69	3.61	.88	1.06	21	7	2.0	T	15.2	S	47	SW	4	4	7	19	7.7	48
Columbus	815	983.0	1013.2	59	38	48.5	-1.7	83	28	29	21+	0	12	36	66	4.06	.62	1.24	16	6	.6	T	11.1	WNW	42	W	4	4	7	19	7 3	41
Columbus (U)	724	------	------	58	40	49.0	-2.4	82	28	31	7+	0	5	--	--	3.18	-.01	1.10	16	5	.3	T	----	---	--	---	--	--	--	--	---	--
Dayton	1002	976.3	1013.0	58	38	47.8	-2.7	80	27	27	19+	0	8	36	65	3.41	.34	1.17	14	6	.8	1	14.0	WNW	50	W	7	4	8	18	7.6	51
Sandusky (U)	603	989.3	------	56	39	47.2	-.7	78	27	31	9	0	4	--	--	1.95	-1.01	.52	15	5	.2	T	9.2	---	46	W	4	8	9	13	6.0	65
Toledo	676	986.5	1012.2	57	34	45.6	---	79	27	25	20	0	16	34	69	3.77	----	2.39	13	5	1.6	T	12.4	W	72	SW	3	5	5	20	7.3	55
Youngstown	1178	969.8	1012.8	56	34	44.9	-2.3	79	28	22	1	0	15	35	72	5.25	1.61	1.38	16	5	4.4	1	10.7	SW	•36	SW	4	3	7	20	7.8	--
OKLAHOMA																																
Oklahoma City	1280	969.5	1013.3	71	45	57.9	-2.4	91	14	32	7+	1	2	39	56	2.43	-.74	.94	5	4	.0	0	15.5	SSE	46	N	6	14	9	7	4.7	67
Tulsa	672	989.2	1013.6	70	46	58.0	-2.7	88	14	35	17	0	0	41	57	2.31	-1.94	.83	7	5	T	0	11.4	NNW	35	N	2	9	11	10	5.2	62
OREGON																																
Astoria	8	1018.0	1018.8	57	40	48.5	-1 2	83	20	32	6+	0	2	42	80	1.33	-3.82	.42	12	0	.0	0	6 4	WNW	--	- -	--	4	7	19	7.3	--
Burns (U)	4140	871.3	1014.8	61	33	46.9	.3	77	20	22	6	0	15	26	49	.15	-.67	.07	4	1	T	T	--	---	--	---	--	8	11	11	5.9	--
Eugene	361	1004.7	1018.6	62	39	50.4	-.5	77	20	30	3+	0	3	--	--	.97	-1.57	.62	6	0	.0	0	7.3	---	--	---	--	4	11	15	6.9	--
Meacham	4050	------	------	54	33	43.1	2.0	73	20	20	6	0	15	--	--	.40	2.52	.15	7	0	2.6	20	----	---	--	---	--	5	8	17	7.2	--
Medford	1312	968.8	1016.4	67	40	53.5	1.2	86	20	28	3	0	4	38	61	.64	-.55	34	4	3	.0	0	5.7	WNW	•27	NW	25	7	10	13	6.3	--
Pendleton	1492	961.4	1015.4	67	41	54.0	1.7	84	20	29	6	0	3	34	49	.01	-1.03	.01	1	0	T	T	11.5	W	•42	W	7	8	11	11	5.8	--
Portland	21	1012.2	1018.0	64	42	52.7	.9	84	20	30	6	0	1	42	69	53	-1.58	.20	7	0	.0	0	7.3	WNW	24	S	10	6	7	17	6.6	63
Roseburg	505	999.0	1018.0	64	39	51.6	.1	90	20	29	3+	1	5	--	--	.71	-1.42	.34	6	0	T	0	4.6	---	20	N	1	5	6	19	7.0	54
Salem	195	1010.5	1018.0	64	38	51.3	-.1	82	20	29	6	0	4	41	71	.64	-1.75	.38	7	0	.0	0	6.6	S	--	---	-	6	10	14	6.6	--
Sexton Summit (R)	3836	------	------	55	37	45.9	1.6	77	20	24	5	0	8	--	--	.60	-1.48	.30	8	1	1.9	11	- - -	---	-	-	-	7	8	15	6.4	--
PENNSYLVANIA																																
Allentown	376	998.6	1013.0	58	36	46.7	-1.8	84	28	26	1	0	13	35	66	3.42	.03	1.34	12	2	2.0	2	13.2	WSW		--	-	6	7	17	6.8	--
Harrisburg	335	998.8	1012.7	59	39	49.1	-1.8	87	28	29	1	0	5	33	58	2.66	-.31	1.00	11	3	T	0	9.6	WNW	31	W	8	4	8	18	6.9	56
Philadelphia (U)	26	------	------	58	42	49.7	-3.0	83	28	33	7+	0	0	-	--	2.50	-.88	.82	13	-	--	--	----	---	--	---	--	--	--	--	---	--
Philadelphia	10	1007.9	1012.4	60	40	49.9	-1.7	84	28+	29	1	0	2	36	64	2.68	-.70	.92	10	2	T	T	10.8	SW	42	NW	8	6	7	17	6.8	55
Pittsburgh (U)	749	------	------	59	40	49.7	-2.1	85	28	28	1	0	3	--	--	4.18	1.10	1.16	17	--	1.0	--	----	---	--	---	--	-	-	-	-	43
Pittsburgh	1151	982.0	1012.8	57	34	47.1	-1.7	82	28	22	1	0	12	35	67	4 31	1.12	1.10	18	5	3.3	2	13.7	WSW	•46	W	28	2	9	19	7.6	39
Reading (U)	266	1000.8	1012.9	59	40	49.7	-1.6	87	28	31	1+	0	3	--	--	3.04	-.20	1.07	14	4	.5	1	12.8	--	38	S	16	6	7	17	6.8	54
Scranton	940	977.9	1012.7	55	35	44.9	-2.1	84	28	27	10+	0	16	33	65	3.16	-.09	.75	13	3	12.0	8	10.3	NNW	47	SW	29	7	7	16	6.8	45
Shippingport (U)	736	------	------	58	37	47.2	---	82	28	24	1	0	12	--	--	3.31	----	1.07	16	5	T	0	3.9	---	%55	W	28	--	--	-	7.9	-
Williamsport	527	993.2	------	59	37	47.8	-1.3	88	28	26	21+	0	9	--	--	3.08	-.46	1.01	16	--	2.1	T	----	---	--	-	--	6	9	15	6.8	--
RHODE ISLAND																																
Block Island	110	1007.2	1011.8	49	36	42.5	-2.4	69	30	29	13	0	8	--	--	1.99	-1.38	.80	11	5	T	T		-	-	---	--	7	9	14	5.9	--
Providence	55	1005.6	1011.9	53	35	43.9	-2.1	76	28	25	2	0	14	33	67	3.08	-.29	1.04	13	4	1.4	1	12.3	SW	•51	SSW	16	11	7	12	6.0	56
SOUTH CAROLINA																																
Charleston (U)	9	------	------	72	56	64.3	-1.3	84	7	43	9	0	0	--	--	2.67	.22	1.33	4	1	.0	0	11 9	---	65	E	10	10	8	12	5.9	74
Charleston	41	1013.8	1015.6	75	52	63.3	-1.0	84	7+	38	21	0	0	50	65	2.39	-.43	1.51	4	0	.0	0	14 8	SSW	--	---	--	11	6	13	5.9	-
Columbia	217	1005.9	1014.3	75	50	62.4	-1.1	87	29	31	21	0	1	46	61	5 31	1.77	3.66	7	2	.0	0	10.3	WSW	36	WSW	16	12	6	12	5.2	77
Florence	146	1009.0	------	75	49	62.2	-1.2	86	29+	35	21	0	0	--	-	2.92	-.75	1.20	6	0	.0	0	----	---	--	--	--	13	4	13	5.2	--
Greenville	1013	976.6	1013.9	70	48	59.1	-1.1	86	30	35	9	0	0	39	55	6.57	2.75	2.90	9	4	.0	0	12.1	WSW	56	W	7	10	7	13	5.7	72
Spartanburg	801	------	------	70	47	58.8	-1.7	87	30	34	21	0	0	--	--	6.42	2.87	2.48	8	4	.0	0	10.7	---	•46	WSW	14	--	--	--	---	--
SOUTH DAKOTA																																
Huron	1282	968.2	1016.6	52	27	39.6	-6.8	76	13	16	23	0	25	28	68	1.23	-.69	.41	11	1	5.3	3	13.7	NNW	42	NW	6	6	12	12	6 4	61
Rapid City	3165	901.1	1017.6	51	27	39.1	-5.4	77	20	11	29	0	23	23	59	1.69	-.32	.63	11	2	11.1	4	10.7	NNW	47	N	3	6	13	11	6.1	56
Sioux Falls	1420	962.4	1015.2	54	28	40.9	-5.5	76	13	21	8+	0	23	24	57	1.29	-1.06	.62	9	4	4.7	3	14.7	NNW	•46	NW	7	9	9	12	6.0	--
TENNESSEE																																
Bristol	1519	959.8	------	65	42	53.4	-2.6	88	27	28	21	0	4	--	--	4.87	1.62	2.32	9	3	T	0	----	---	--	---	--	7	6	17	6.6	--
Chattanooga	670	987.3	1014.9	71	46	58.3	-1.4	88	28	32	21	0	1	42	62	5.52	.99	2.14	8	6	.0	0	8.9	S	42	NW	15	12	6	12	5.1	64
Knoxville	950	980.1	1014.9	67	46	56.6	-2.4	87	27	32	21	0	1	41	60	5.07	1.43	1.68	12	5	.0	0	11.3	WSW	69	W	15	8	11	11	6.0	61
Memphis (U)	271	------	------	69	51	60.3	-1.9	85	28	39	17	0	0	--	--	6.69	1.99	2.36	10	--	.0	0	----	---	--	---	--	--	--	--	---	--
Memphis	263	1000.3	1015.0	71	50	60.4	-1.4	86	28	37	19	0	0	45	61	6.74	1.94	2.65	10	7	.0	0	12.1	S	41	NW	7	12	7	11	5.3	66
Nashville	577	994.7	1014.8	69	46	57.7	-2.0	85	27	35	19+	0	0	44	65	4.23	.54	1.83	12	4	.0	0	10.8	S	46	W	7	8	9	13	6.0	75

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days		Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days		Snow, Sleet		Average hourly speed	Prevailing direction	Fastest mile			Clear	Partly cloudy	Cloudy		
												Max. 90° F. or above	Min. 32° F. or below						.01 inch or more	With thunderstorms	Total	Max. depth on ground			Speed	Direction	Date					
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
TENNESSEE (Cont'd.)																																
Oak Ridge (R)	905	981.2	------	69	46	57.3	-0.4	85	27+	32	21	0	1	--	--	9.71	5.63	3.74	11	6	T	0	7.7	---	54	---	--	8	10	12	5.9	--
TEXAS																																
Abilene	1759	951.6	1012.2	76	52	64.1	-.4	92	26	36	10	7	0	41	50	2.32	-.15	.93	6	3	.0	0	14.2	S	47	W	2	10	13	7	4.8	66
Amarillo	3590	886.2	1011.6	70	37	53.8	-1.8	91	26	23	10	1	8	23	38	.23	-1.22	.23	1	1	T	T	17.5	SW	57	SW	8	16	9	5	3.8	86
Austin	615	992.2	1013.7	81	57	69.1	1.2	91	28	42	11	2	0	51	58	.56	-3.40	.45	4	1	.0	0	12.0	SSE	34	NE	7+	6	7	17	6.6	44
Brownsville	16	1009.5	1012.2	82	67	74.2	.5	90	5	57	10	1	0	65	77	4.75	3.19	3.69	4	2	.0	0	14.8	SE	40	S	2	5	13	12	6.6	53
Corpus Christi	41	1011.9	1012.9	80	63	71.4	-.3	95	5	50	10+	2	0	63	79	8.04	6.30	7.19	5	3	.0	0	13.8	SE	41	S	2	5	6	19	7.2	54
Dallas	487	995.3	1013.8	77	53	65.0	-1.3	89	13	38	11	0	0	47	57	3.99	.12	2.85	8	6	.0	0	13.9	SSE	54	W	14	10	7	13	5.9	60
Del Rio	1091	978.0	1011.6	83	59	71.0	-.1	96	2	44	10	10	0	47	49	.05	-1.40	.04	2	0	.0	0	12.4	---	40	NW	15	6	8	16	7.0	53
El Paso	3920	883.5	1010.4	75	48	61.8	-1.3	86	30	36	2+	0	0	21	23	.05	-.22	.05	1	0	T	T	14.6	WSW	57	W	2	18	7	5	3.2	87
Fort Worth	544	992.9	1013.7	77	53	64.8	-1.1	90	13	37	11	1	0	45	54	3.12	-.73	2.03	7	5	.0	0	14.2	S	*32	NW	14	11	7	12	5.4	--
Galveston (U)	7	------	------	72	63	67.7	-1.2	84	15	47	10	0	0	--	--	2.35	-.74	.85	8	--	.0	0	13.3	---	33	N	7	--	--	--	---	59
Galveston	5	1012.5	1014.7	73	63	67.9	-1.2	86	15	46	10	0	0	60	76	4.05	.65	1.57	10	2	.0	0	15.1	SE	--	---	--	7	5	18	7.0	--
Houston (U)	41	1009.1	------	77	60	68.4	-1.1	86	30	43	10	0	0	--	--	2.33	-1.07	1.30	10	2	.0	0	11.5	---	33	NW	15	6	4	20	6.9	50
Houston	50	1012.2	1014.6	77	59	67.7	-.7	85	15	43	10+	0	0	56	72	1.84	-1.25	.90	9	3	.0	0	12.9	SSE	--	---	--	6	3	21	7.3	--
Laredo	500	996.3	1011.4	86	65	75.1	-.8	100	2	54	10+	13	0	56	60	1.62	.01	1.10	5	3	.0	0	13.3	SE	*35	E	17	5	7	18	7.2	--
Lubbock	3243	900.4	1011.4	74	43	58.4	-1.1	94	26	28	10	2	3	32	43	.36	-.75	.19	4	1	.0	0	16.6	SW	*58	WSW	2	16	7	7	4.0	--
Midland	2854	913.3	1010.2	76	50	63.0	-1.5	94	26	36	10	2	0	37	45	1.15	-.26	.65	5	1	.0	0	10.5	S	*38	SW	2+	15	7	8	4.6	--
Port Arthur	16	1013.5	1014.9	76	58	67.1	-.8	86	15	41	10+	0	0	58	75	3.01	-.93	2.18	6	3	.0	0	13.1	SSE	40	SE	2	6	5	19	7.0	45
San Angelo	1903	945.5	1012.3	78	53	65.3	-2.1	93	14+	38	10	6	0	41	47	1.44	-.75	.66	5	3	.0	0	12.4	S	*48	NW	2	9	10	11	5.6	--
San Antonio	792	988.2	1013.0	81	58	69.7	.9	90	2+	38	11	5	0	48	54	.49	-2.53	.47	2	0	.0	0	11.4	SSE	40	NW	15	7	6	17	6.9	56
Victoria	110	1008.8	1013.2	81	60	70.7	.1	92	5	47	10+	3	0	55	64	1.83	-.61	.91	7	1	.0	0	13.7	---	%51	WNW	15	5	4	21	7.4	--
Waco	500	993.2	1013.6	78	55	66.4	-.4	89	16	39	11	0	0	48	55	.65	-3.32	.40	5	5	.0	0	16.0	S	--	---	--	8	7	15	6.3	--
Wichita Falls	1020	976.6	1012.8	77	48	62.7	.1	94	14	31	11	6	1	40	48	1.05	-1.30	.62	4	6	.0	0	12.9	SSE	*37	WNW	2	16	5	9	4.4	--
UTAH																																
Milford	5028	841.2	1012.8	63	32	47.5	-.3	77	22+	20	2	0	15	--	--	1.35	.59	.52	9	3	5.9	4	----	---	--	---	--	10	7	13	5.8	--
Salt Lake City	4220	864.5	1012.5	63	37	49.9	-.2	76	21	24	6	0	9	31	53	1.50	-.26	.57	10	2	2.7	1	9.9	SSE	36	NW	7+	8	7	15	6.5	56
VERMONT																																
Burlington	331	996.8	1011.6	49	32	40.8	-1.5	62	16	18	2	0	16	31	70	2.47	-.16	.84	14	2	.2	2	8.8	S	38	SW	28	5	2	23	7.7	45
VIRGINIA																																
Lynchburg	947	979.2	------	65	43	54.1	-1.4	85	30	29	1	0	6	--	--	3.22	.09	1.55	7	1	T	T	10.6	---	36	SW	4+	5	13	12	6.1	57
Norfolk	26	1012.6	1013.8	67	46	56.6	.3	88	30	36	12+	0	0	44	67	3.81	.65	1.80	11	4	T	T	13.3	SSW	62	N	11	6	11	13	6.2	70
Richmond	162	1007.6	1013.7	68	43	55.5	-.6	89	30	28	1+	0	3	41	62	2.75	-.48	.85	10	2	T	0	10.0	WSW	33	NW	20	5	14	11	6.3	65
Roanoke	1174	971.5	1013.7	65	42	53.6	-1.9	86	28	28	1	0	4	36	55	3.12	.17	1.01	8	3	.6	T	10.6	W	--	---	--	6	9	15	6.4	--
WASHINGTON																																
Olympia	190	1010.5	1017.9	63	36	49.4	1.0	78	20	28	6	0	7	37	64	.37	-1.97	.26	5	0	.0	0	7.0	SW	*29	WSW	4+	5	12	13	6.5	--
Seattle (U)	14	------	------	61	44	52.2	.4	74	19	36	5	0	0	--	--	.59	-1.35	.28	7	0	.0	0	8.4	---	32	SW	4	6	14	10	6.1	70
Seattle	14	1016.9	1018.0	--	--	----	---	--	--	--	--	--	--	39	65	----	----	----	--	--	---	--	7.3	NW	--	---	--	--	--	--	---	--
Seattle-Tacoma	376	1004.1	1018.4	60	39	49.6	.5	74	19	31	6	0	1	39	71	.33	-1.79	.28	5	0	.0	0	11.9	SW	*37	SW	4	6	9	15	6.6	--
Spokane	2357	945.8	1015.0	62	38	49.9	3.6	78	21	26	6	0	7	33	56	.08	-.91	.08	1	0	T	0	8.3	NE	38	SW	4	4	16	10	6.4	71
Stampede Pass (R)	3958	878.8	1018.5	45	32	38.3	1.2	62	19	19	6	0	17	--	--	2.04	-3.46	.66	9	0	15.2	184	----	---	--	---	--	6	8	16	6.7	--
Tatoosh (R)	101	1015.2	1018.5	51	43	46.8	-.7	60	10	38	5+	0	0	42	83	.68	-4.55	.26	11	0	.0	0	11.9	E	50	E	10	3	9	18	7.6	48
Walla Walla (U)	949	979.0	1014.9	66	45	55.4	1.5	84	20	31	6	0	1	--	--	.11	-1.13	.10	2	0	.0	0	6.1	---	31	W	4	5	14	11	6.2	73
Yakima	1061	976.3	1015.5	69	37	52.9	1.5	85	21	25	6	0	9	31	45	T	-.43	T	0	0	.0	0	8.3	WNW	--	---	--	10	9	11	5.6	--
WEST VIRGINIA																																
Charleston	950	977.4	1013.1	63	41	52.0	-3.0	88	27+	27	1+	0	7	36	59	4.16	.42	1.12	18	5	.8	1	8.3	SW	*32	W	29	5	5	20	7.5	--
Elkins	1970	------	------	59	34	46.2	-2.9	85	29	18	1	0	18	35	--	2.22	-1.14	.65	14	3	4.0	1	9.2	WNW	*42	WSW	4	4	7	19	7.6	--
Huntington (U)	565	------	------	64	42	52.7	-4.6	89	27+	30	21	0	8	--	--	3.81	.39	1.15	15	--	T	0	----	---	--	---	--	--	--	--	---	--
Parkersburg (U)	615	------	------	61	41	51.0	-2.8	88	28	29	1+	0	7	--	--	3.62	.54	1.13	16	4	.1	T	6.9	---	32	NW	29	7	9	14	6.6	47
WISCONSIN																																
Green Bay	689	989.2	1012.2	50	29	39.3	-2.5	65	3	12	30	0	23	27	64	1.45	-1.06	.56	11	4	5.2	4	11.6	NE	38	SW	4	7	8	15	6.6	52
La Crosse	652	987.8	1012.5	53	32	42.7	-3.9	71	3	17	30	0	13	29	58	2.09	-.22	.84	7	4	4.5	4	12.1	NW	*42	SSW	3	5	8	17	6.7	--
Madison	857	976.3	1012.1	56	32	43.6	-2.1	76	3	21	20	0	18	29	63	3.54	1.05	1.85	14	5	.4	T	12.3	NW	42	SW	3	6	8	16	6.9	64
Milwaukee	672	986.8	1012.2	53	34	43.0	-1.3	79	3	26	20	0	12	29	64	4.14	1.75	2.11	13	7	.1	T	14.8	WNW	43	SW	4	6	10	14	6.8	57
WYOMING																																
Casper	5322	834.4	1013.4	53	29	40.7	-2.3	69	20	16	6	0	23	24	59	1.56	-.36	.44	13	2	13.6	4	11.8	WSW	*35	WSW	26	8	4	18	6.8	--
Cheyenne	6131	808.0	1013.2	52	27	39.5	-1.6	69	26	12	6	0	25	21	55	1.31	-.83	.72	11	1	.7	T	14.6	NW	47	NW	2	6	7	17	6.7	53
Lander	5563	832.7	1013.9	54	30	42.0	-.1	72	21	14	6	0	18	26	58	1.96	-.45	.75	9	1	21.0	10	6.3	---	42	W	5	5	7	18	7.0	67
Sheridan	3942	883.8	1017.1	52	29	40.2	-3.3	75	20	17	6	0	25	27	65	1.91	-.35	.49	13	0	11.3	2	8.7	WNW	40	NW	24	10	4	16	6.3	51
PACIFIC AREA																																
Canton Island	9	1008.5	1009.5	88	77	82.7	-1.0	91	6	72	19	1	0	75	81	3.34	-.44	.84	12	0	.0	0	----	---	--	---	--	11	15	4	4.8	--
Hilo	31	1014.9	1016.4	80	64	71.9	.3	83	28	59	16	0	0	65	79	6.04	-7.23	.95	25	0	.0	0	8.3	WSW	*23	ESE	18	0	3	27	9.0	33
Honolulu	7	1016.6	1017.2	80	68	73.9	-.4	85	29	62	23	0	0	62	67	.51	-1.13	.38	7	0	.0	0	10.4	ENE	34	NE	7+	6	8	16	6.9	64
Koror (R)	94	1005.1	1008.8	87	75	81.2	-.3	90	11+	72	17	2	0	76	84	15.63	6.85	3.18	23	3	.0	0	----	---	--	---	--	0	4	26	8.9	--
Lihue	115	1012.2	1017.4	79	66	72.4	.4	84	28	57	23	0	0	63	76	1.55	-1.48	.85	14	0	.0	0	10.7	NE	29	NE	9	4	11	15	7.1	36
Majuro	10	1008.8	1009.1	85	77	81.1	---	88	4	73	1	0	0	75	83	11.02	----	3.37	24	0	.0	0	----	---	--	---	--	0	5	25	8.9	--
Ponape (R)	118	1003.7	1009.4	85	74	79.7	-1.8	88	17+	72	16	0	0	76	89	28.08	9.08	3.29	30	3	.0	0	----	---	--	---	--	0	2	28	9.5	--
Truk (Moen Is.)	8	1009.1	1009.5	85	76	80.5	-.7	87	26+	73	19	0	0	76	85	23.38	11.86	5.13	29	5	.0	0	----	---	--	---	--	0	0	30	9.8	--
Wake Island	11	1016.3	1016.6	83	73	78.0	-.3	84	3+	69	12	0	0	69	75	.74	-1.20	.19	15	0	.0	0	17.3	ENE	--	---	--	8	13	9	5.7	--
Yap (R)	53	1006.8	1008.7	86	76	81.1	-1.2	89	19	72	18	0	0	76	85	18.15	12.40	5.27	23	4	.0	0	----	---	--	---	--	0	0	30	10.0	--
WEST INDIES																																
San Juan, P.R. (U)	47	------	------	82	73	77.3	.7	92	12	70	18	1	0	--	--	3.58	-.22	1.81	13	--	.0	0	----	---	--	---	--	--	--	--	---	--
San Juan, P.R.	15	1013.2	------	84	70	77.1	---	93	12	65	8+	3	0	--	--	4.54	----	1.50	16	--	.0	0	----	---	26	NE	3	4	14	12	6.5	62
ALASKA																																
Anchorage	92	1005.8	1010.9	43	27	34.7	-.7	57	23+	6	6	0	27	23	61	.50	.10	.16	8	0	10.5	19	7.2	S	*29	SSE	9	6	4	20	7.3	50
Annette	110	1013.9	1018.0	49	36	42.7	.1	73	21	29	4+	1	7	35	76	13.80	5.67	4.75	18	0	6.0	1	10.6	NNW	*35	ESE	6	3	6	21	7.7	--
Barrow	22	1019.0	1019.5	7	-5	.8	1.0	31	26	-25	4	0	30	-9	63	.07	-.03	.04	4	0	.7	12	10.7	NE	31	E	23	12	4	14	5.9	--
Bethel	10	1006.8	1008.1	32	11	21.1	-5.7	51	22	-31	5	0	23	17	82	.77	.22	.28	11	0	2.0	22	8.6	ESE	*23	NNE	6+	8	8	14	6.5	--
Cold Bay	90	1002.7	1006.9	36	25	30.3	-3.9	48	22	8	15	0	25	26	85	2.03	.69	.65	14	0	14.2	7	18.5	SSE	*56	WSW	11	2	7	21	8.1	--
Cordova	40	1010.8	1012.6	42	28	35.1	-1.3	52	20+	15	14	0	29	--	--	7.99	2.92	2.80	16	0	61.2	57	----	---	--	---	--	3	3	24	8.5	--
Fairbanks	436	993.9	1011.4	43	20	31.2	2.3	61	24	-8	6	0	27	18	57	.12	-.17	.07	5	0	2.4	22	6.2	NNE	*25	SE	9	9	3	18	6.3	--
Juneau	15	1015.2	1015.9	46	31	38.7	-.8	63	24	27	11+	0	21	31	77	3.00	.02	.61	19	0	6.6	1	9.0	ESE	34	SE	7	5	3	22	8.0	35
King Salmon	44	1004.7	1006.8	36	19	27.4	-5.7	54	23	-19	6	0	27	23	81	.92	.08	.24	14	0	4.2	12	11.9	SSE	*31	ENE	22	3	7	20	7.6	--
Kotzebue	10	1012.9	1013.6	23	3	13.1	-.7	40	28	-30	5+	0	30	9	80	.10	-.26	.04	4	0	3.7	35	7.7	ESE	*30	ESE	30	6	8	16	6.5	--
McGrath	334	997.3	1010.2	39	13	26.2	.2	59	24	-28	6	0	28	17	65	.18	-.31	.11	3	0	2.0	37	4.4	N	*27	S	9	6	7	17	6.8	--
Nome	13	1010.5	1011.3	25	10	17.2	-3.8	41	23	-27	5	0	28	14	82	.77	-.01	.22	10	0	2.4	40	10.0	ENE	30	NE	12	8	7	15	6.4	56
Northway	1713	947.9	1012.2	41	13	27.0	1.2	58	23	-5	4+	0	30	--	--	.15	-.20	.06	5	0	3.2	30	----	---	--	---	--	9	8	13	5.5	--
St. Paul Island	22	1004.7	1005.9	28	18	22.8	-7.3	36	29+	0	15	0	30	20	87	.45	-.57	.12	11	0	4.7	8	----	---	--	---	--	3	10	17	7.9	--
Yakutat	28	1013.5	1014.9	42	30	36.2	-.3	57	21	21	20	0	24	30	80	6.22	-1.76	1.59	24	0	40.4	59	9.1	E	*51	SE	17	2	4	24	8.7	--

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates.

% Peak gust.

a Maximum hourly average.

Number of days maximum 70° or above for Alaskan stations.

ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.

HEATING DEGREE DAYS

(Base 65°F.)

Table 3

APRIL 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	173	2854	2750
Mobile	63	1648	1612
Montgomery	116	2280	2137
ARIZONA			
Flagstaff	723	6321	6848
Phoenix (U)	47	1108	1492
Phoenix	55	1319	1698
Prescott	422	3930	4352
Tucson	84	1473	1776
Winslow	372	4107	4550
Yuma	25	965	951
ARKANSAS			
Ft. Smith	214	3460	3164
Little Rock	167	3104	2964
Texarkana	128	2600	2362
CALIFORNIA			
Bakersfield	133	2040	2094
Bishop	357	4090	4044
Blue Canyon	617	5431	5120
Burbank	207	1666	1701
Eureka (U)	458	4287	3975
Fresno	183	2533	2489
Los Angeles (U)	191	1437	1364
Los Angeles	182	1595	1838
Mt. Shasta (R)	505	5490	5382
Oakland	301	3021	2832
Red Bluff	179	2574	2495
Sacramento (U)	189	2355	2510
Sacramento	197	2535	2712
Sandberg (R)	506	3876	3926
San Diego	182	1452	1434
San Francisco (U)	310	2945	2641
San Francisco	318	3039	2993
San Jose	234	2328	2227
Santa Maria	366	3061	2553
COLORADO			
Alamosa	742	7591	8016
Colorado Springs	622	5913	5872
Denver	581	5605	5781
Grand Junction	372	5019	5628
Pueblo	473	5445	5479
CONNECTICUT			
Bridgeport	587	5548	5609
Hartford	653	6319	5907
New Haven	617	5829	5713
DELAWARE			
Wilmington	456	5074	4794
DIST. OF COLUMBIA			
Washington (U)	335	4299	4178
Washington	360	4393	4246
FLORIDA			
Apalachicola (U)	35	1304	1307
Daytona Beach	40	987	868
Fort Myers	2	418	405
Jacksonville (U)	27	1127	1113
Jacksonville	38	1284	1243
Key West (U)	0	31	77
Miami (U)	0	214	173
Miami	0	188	178
Miami Beach	0	120	123
Orlando	7	733	650
Pensacola (U)	43	1474	1435
Tallahassee	72	1633	1519
Tampa	5	658	674
West Palm Beach	0	272	248
GEORGIA			
Athens	202	3075	2785
Atlanta	164	2867	2806
Augusta	164	2645	2138
Columbus	145	2487	2396
Macon	105	2260	2049
Rome	235	3377	3111
Savannah	97	2000	1710
IDAHO			
Boise	424	5575	5549
Lewiston	344	5680	5193
Pocatello	555	6601	6523
ILLINOIS			
Cairo (U)	236	3878	3709
Chicago (U)	528	5436	
Chicago	532	5970	6023
Chicago University	550	5920	
Moline	537	6428	6120
Peoria	491	5954	5854
Springfield	464	5623	5490
INDIANA			
Evansville	371	4652	4264
Ft. Wayne	538	6119	6008
Indianapolis	483	5606	5405
South Bend	584	6334	6214
IOWA			
Burlington	508	6239	5888
Des Moines	523	6737	6200
Dubuque	621	7271	6928
Keokuk (U)	436	5549	
IOWA (Cont'd.)			
Sioux City	587	7253	6730
KANSAS			
Concordia (U)	449	5698	5157
Dodge City	439	5079	4908
Goodland	590	6060	6068
Topeka (U)	395	5194	4794
Topeka	425	5351	5057
Wichita	379	4834	4463
KENTUCKY			
Lexington	410	4736	4824
Louisville	348	4417	4340
Pikeville (U)	308	3888	
LOUISIANA			
Baton Rouge	62	1556	1595
Lake Charles	37	1342	1543
New Orleans (U)	28	2326	1175
New Orleans	40	1319	1317
Shreveport	111	2189	2117
MAINE			
Caribou	865	8984	9460
Greenville (U)	883	8732	
Portland	743	7386	7170
MARYLAND			
Baltimore (U)	335	4329	4130
Baltimore	414	4859	4667
Frederick	469	5368	4748
MASSACHUSETTS			
Blue Hill Obs. (R)	699	6663	
Boston	575	5797	5513
Nantucket	671	5697	5569
Pittsfield	761	7531	7253
MICHIGAN			
Alpena (U)	800	7501	7501
Detroit	573	6189	6093
Detroit (Willow Run)	569	6294	6170
East Lansing (U)	607	6577	
Escanaba (U)	853	8024	8020
Grand Rapids	627	6719	6695
Marquette (U)	852	7802	7863
Muskegon	672	6710	6623
S. Ste. Marie	902	8552	8752
MINNESOTA			
Duluth (U)	913	9323	8887
Duluth	930	9561	9285
Internat. Falls	971	10421	9992
Minneapolis	686	8315	7514
Rochester	729	8532	7705
St. Cloud	788	9270	8456
MISSISSIPPI			
Jackson	133	2429	2202
Meridian	132	2444	2324
Vicksburg (U)	86	2135	2000
MISSOURI			
Columbia	399	5092	4964
Kansas City	377	4970	4769
St. Joseph	444	5703	5195
St. Louis (U)	336	4574	4368
St. Louis	368	4805	4587
Springfield	383	4741	4559
MONTANA			
Billings	704	7256	6683
Glasgow	782	9464	8265
Great Falls	700	7743	7030
Havre (U)	716	8872	7775
Helena	687	8241	7654
Kalispell	638	8143	7449
Miles City	695	8200	7459
Missoula	566	7807	7332
NEBRASKA			
Grand Island	613	6779	6077
Lincoln (U)	499	6161	5661
Norfolk	645	7450	6754
North Platte	687	6983	6244
Omaha	502	6436	5953
Scottsbluff	695	6724	6455
Valentine (U)	751	7666	6704
NEVADA			
Elko	601	6898	6774
Ely	704	6924	6825
Las Vegas	105	2310	2425
Reno	556	5671	5553
Tonopah	481	5207	5450
Winnemucca	545	6026	5959
NEW HAMPSHIRE			
Concord	748	7364	7214
Mt. Washington Obs.	1352	12386	
NEW JERSEY			
Atlantic City (U)	533	4757	4528
Newark	516	5218	5093
Trenton (U)	476	5116	4924
NEW MEXICO			
Albuquerque	288	3837	4319
Clayton	443	4732	4930
NEW MEXICO (Cont'd.)			
Roswell	222	3430	3396
NEW YORK			
Albany	667	6985	6666
Binghamton	722	7344	7131
Buffalo	652	6508	6451
New York (U)	506	5059	4879
New York	493	4933	4838
Rochester	677	6790	6520
Schenectady	620	6553	
Syracuse	656	6792	6236
NORTH CAROLINA			
Asheville (U)	389	4193	3962
Asheville	346	4404	
Charlotte	224	3227	3176
Greensboro	320	4041	3760
Hatteras (R)	217	2805	2367
Raleigh	275	3677	3328
Wilmington	169	2687	2316
Winston-Salem	288	3815	3672
NORTH DAKOTA			
Bismarck	819	9668	8562
Devils Lake (U)	1000	10627	9409
Fargo	895	9840	8835
Grand Forks	970	10543	
Pembina	973	10223	
Williston (U)	815	9434	8570
OHIO			
Akron	596	6264	5918
Cincinnati (U)	368	4476	4424
Cincinnati	460	5129	5023
Cleveland	566	5860	5737
Columbus	495	5432	5404
Dayton	515	5651	5379
Sandusky (U)	530	5825	5601
Toledo	575	6416	6089
Youngstown	596	6308	5878
OKLAHOMA			
Oklahoma City	257	3909	3604
Tulsa	245	3737	3540
OREGON			
Astoria	488	5076	4416
Burns (U)	536	6724	6410
Eugene	430	4679	4384
Meacham	652	7440	7034
Medford	339	4387	4271
Pendleton	330	5440	4956
Portland (U)	309	4250	3874
Portland	364	4737	4297
Roseburg	397	4338	
Salem	405	4657	4234
Sexton Summit (R)	567	6101	5497
PENNSYLVANIA			
Allentown	548	5865	5691
Harrisburg	484	5339	5116
Philadelphia (U)	462	4708	4430
Philadelphia	456	4984	4762
Pittsburgh (U)	466	5094	4898
Pittsburgh	540	5755	5674
Reading (U)	465	5113	4926
Scranton	602	6427	5816
Williamsport	520	5962	5692
RHODE ISLAND			
Block Island	671	5619	5412
Providence	625	6001	5809
SOUTH CAROLINA			
Charleston (U)	87	1882	1769
Charleston	117	2223	1973
Columbia	154	2699	2435
Florence	147	2643	2507
Greenville	212	3217	3028
Spartanburg	219	3226	3018
SOUTH DAKOTA			
Huron	757	8909	7543
Pierre	742	8441	
Rapid City	774	7334	7030
Sioux Falls	719	8459	7492
TENNESSEE			
Bristol	366	4370	4053
Chattanooga	231	3462	3339
Knoxville	279	3740	3540
Memphis	185	3248	3113
Nashville	249	3714	3470
TEXAS			
Abilene	135	2583	2657
Amarillo	339	4158	4246
Austin	32	1600	1713
Brownsville	0	455	617
Corpus Christi	4	812	1011
Dallas	84	2328	2272
Del Rio	20	1440	1407
El Paso	132	2244	2641
Ft. Worth	97	2391	2356
Galveston (U)	19	1019	1211
Houston (U)	30	1152	1276
Houston	27	1236	1388
Laredo	11	748	781
Galveston	18	1044	1233
TEXAS (Cont'd.)			
Lubbock	230	3480	3551
Midland	146	2524	
Port Arthur	46	1376	1517
San Angelo	114	2257	2107
San Antonio	22	1461	1579
Victoria	7	1091	1126
Waco	62	2040	2025
Wichita Falls	152	3048	3009
UTAH			
Milford	519	5642	6099
Salt Lake City	446	5389	5552
VERMONT			
Burlington	719	7676	7486
VIRGINIA			
Lynchburg	356	4321	4066
Norfolk	280	3599	3395
Richmond	323	4106	3889
Roanoke	365	4327	4071
WASHINGTON			
Olympia	458	5532	4980
Seattle (U)	378	4670	4085
Seattle-Tacoma	455	5400	4813
Spokane	448	6848	6376
Stampede Pass (R)	794	9094	8075
Tatoosh Island (R)	540	5621	4957
Walla Walla (U)	288	5202	4639
Yakima	361	6507	5587
WEST VIRGINIA			
Charleston	415	4667	4299
Elkins	569	5813	5496
Huntington (U)	389	4448	3983
Parkersburg (U)	438	4878	4618
WISCONSIN			
Green Bay	764	8155	7805
La Crosse	664	7882	7326
Madison (U)	619	7127	6955
Madison	637	7244	7063
Milwaukee	652	6802	6745
WYOMING			
Casper	723	7003	7111
Cheyenne	758	6859	6927
Lander	681	7527	7744
Sheridan	738	7656	7355
ALASKA			
Anchorage	904	11299	9852
Annette	661	7285	6279
Barrow	1928	19259	17629
Bethel	1313	13007	11733
Cold Bay	1036	9434	
Cordova	891	9902	8459
Fairbanks	1009	14638	13419
Juneau	780	9289	7988
King Salmon	1123		
Kotzebue	1553	15178	14403
McGrath	1159	14765	13431
Nome	1429	13843	12540
Northway	1134	16189	14568
St. Paul	1259	10161	9210
Yakutat	855	9134	8216

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

April 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Most of western portion	1	10:30 a.m.-6:30 p.m.							Wind and dust	Storm began in western portion with visibilities reduced to less than 3 miles by 10:30 a.m., at Dodge City and Goodland. Winds from southwest reached speeds of 34 m.p.h., with gusts to 41 m.p.h., by that hour at Dodge City with lesser speeds to north. Most intense area of storm in southwest where wind speeds of more than 30 m.p.h., maintained from 10:30 a.m., through 3:30 p.m., with gusts of 35 m.p.h., to 45 m.p.h., and dust reduced visibility to less than 5 miles much of that time also. For an hour or two it was less than 2 miles at Garden City. At Goodland wind speeds through day less than 25 m.p.h., and gusts below 30 m.p.h., but visibility less than 1 mile for 3 hours. Storm did not last quite so long in central, especially in Wichita area where visibility dropped to less than 5 miles for only 1 hour. Winds reached gust speeds of 48 to 59 m.p.h., at Hill City and Salina and both stations recorded less than 5-mile visibility much of afternoon. Storm moved eastward. Some fields badly blown and traffic halted at times.
IOWA Central and east-central portions	1	Afternoon-evening	100	*50			4	1	Wind, hail, and electrical	Thunderstorms with high wind and hail damaged buildings and utilities. Storm moved eastward.
MISSOURI Allendale (2-1/2 miles southeast of), Worth County	2	1 a.m.	3	30	0	0	3	1	Tornado, rain, and electrical	Tornado moving northeastward hit 3 farms, destroying outbuildings. Path discontinuous.
ILLINOIS Wilmette, Cook County	2	1:30 a.m.	2	10	0	0	5	1	Tornado	An unusually narrow storm which would have caused much heavier damage had it remained on ground continuously. Remarkable, but well authenticated, results of barometric pressure reduction where rear windows of closed cars blown out and where sealed beam headlights popped out of their recepticals as funnel passed over. Storm moved northeastward.
OKLAHOMA Tillman and Kiowa Counties	2	3 a.m.			0	0	1	1	Tornadoes (suspected), wind, rain, and hail	Light hail fell generally over Tillman and southern Kiowa Counties. Frederick police reported sighting small twisters north and southwest of Frederick, but reports not confirmed. Storm moved northeastward.
OKLAHOMA Caddo, Grady, McClain, Cleveland, Canadian, and Oklahoma Counties	2	5:15-6:45 a.m.			1		3	1	Wind, rain, and hail	Severe thunderstorms moved across eastern Caddo County, northern Grady County, southeastern Canadian County, southwestern Oklahoma County, and northern McClain and Cleveland Counties causing heavy rain and light hail. Strong winds damaged roofs, outbuildings, trees, and windows in Minco-Tuttle area of Grady County, and damaged several light planes in Canadian County. 1 person killed in auto accident in southwestern Oklahoma County as result of rain- and hailstorm.
OKLAHOMA Owasso, Tulsa County	2	10:30 a.m.	1/4	34	0	0	2	1	Tornado, wind, and rain	Tornado moving northeastward touched down momentarily, destroying 2 outbuildings; in rural area which kept damage to minimum.
MISSOURI Rich Hill (5 miles northeast of), Bates County	2	Noon			1				Electrical	Farmer struck and killed by lightning while plowing.
MISSOURI Lockwood, Greenfield, and Dadeville, Dade County	2	12:30 p.m.	10	*2			4	3	Wind, hail, and rain	Wind damaged buildings in Dadeville. 1/2-inch hail, driven by wind smashed windows in Greenfield. 3-inch hail damaged roofs and windows in Lockwood. Crop damage scattered. Storm moved northeastward.
KANSAS Butler County (western portion)	2	1:30-2:45 p.m.	35	*6				1	Hail and wind	Hail 1/2 to 1 inch in diameter fell over western part of County. Little crop damage. No violent winds. Main damage to roofs and automobiles. Storm moved northeastward.
KANSAS Sumner County (northeastern portion)	2	Afternoon							Wind, hail, and rain	
KANSAS Fredonia (5 miles northwest of) Wilson County	2	4 p.m.			0	0			Tornado	Tornado funnel aloft sighted 5 miles northwest of Fredonia, dissipated without coming to ground or doing damage.
KANSAS Marion to Atchison Counties	2	4-6:15 p.m.	125	*5-10			6		Hail, wind, rain, and electrical	Severe hail- and windstorm occurred in connection with thunderstorm or squall line. Hail and heavy rain fell along very narrow path of 5 to 10 miles in width from near Cottonwood Falls northeastward 125 miles to near Nortonville. Hail intermittent along this path. Damage confined largely to buildings as few crops developed enough to be damaged

See footnotes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										much. Excessive rains of 2 to 4 inches in 30 to 45 minutes also reported along hail path. Heaviest rain at Saffordville, west of Emporia. Hailstones varied in size from peas to hens' eggs and lay in drifts several inches deep for an hour or two after storm was over. Hail began at or near Cottonwood Falls about 4 p.m., progressing northeastward across southeastern Wabaunsee County between 4:30 and 5:15 p.m., hitting Topeka from 5:38 to 5:54 p.m., and terminating northeast of Valley Falls where damaging winds, rain, and hail occurred from 5:30 to 6:15 p.m. Roofs, windows, neon signs, and automobiles suffered greatest damage, but there were some west sides of wooden houses that showed hail marks. Partial estimates of damage only possible due to much greater damage by tornado 6 hours later along practically same path. City of Topeka probably suffered greatest hail losses where total damage estimated at $3,500,000 as follows: 1,500 neon signs damaged, loss $75,000; greatest number of windows broken were at AT&SFe offices, Hotel Kansan, and at State Printing Office; total glass damage $150,000. Automobile damage ran $200 to $250 per claim and expected to total $1,000,000. Roofs suffered greatest loss as some damage done to practically every roof.
KANSAS Pawnee to Butler Counties	2	6-8:30 p.m.			0	1	5		Tornadoes, wind, hail, and electrical	Severe thunderstorm conditions prevailed over a number of south-central counties from Pawnee to Butler. In early part of this storm 3 tornadoes spawned over counties from about 6 to 7 p.m. Later part of storm produced hail and severe winds over slightly larger area. First tornado sighted 8 miles northeast of Larned at 6 p.m., where buildings on 1 farm damaged. Storm moved northeastward. Second tornado covering longer path and doing much damage came to earth about 6:30 p.m., at airport in northwestern part of Ellinwood where 6 planes and 2 hangars damaged, approximating $30,000 loss. Intermittent farm damage occurred up to near Claflin where tornado hit at 6:45 p.m., snarling communication lines near that town. Next locality suffering damage was at Magnolia Oil Company camp near Barton-Rice County line on Highway 4 where several houses and oil-well equipment damaged. Hailstones 2-1/2 inches in diameter reported here. This tornado continued northeastward past Bushton and hit southern part of Holyrood, Ellsworth County. Damages indicated tornadic action although some reports state no funnel observed. 5 houses, buildings at the athletic field, and roof of new high school gymnasium damaged. Storm apparently terminated about 9 miles northeast of Holyrood. Damage path about 35 miles long and 200 to 500 yards wide at times. Third tornado sighted aloft 3 miles southeast of Ray, Pawnee County, at 7 p.m. No damage. 1 house northwest of Ellinwood definitely showed explosive effects.
OKLAHOMA Grandfield, Tillman County	2	6:30 p.m.					2	1	Wind and dust	Severe duststorm with winds upwards of 65 m.p.h., moved across southwestern Oklahoma during late afternoon causing damage to roofs, windows, and TV antennas. Heaviest damage in Grandfield area. Storm moved eastward.
KANSAS South-central portion	2	7-11 p.m.	125			2	4		Wind, hail, and electrical	This was second development to severe proportions of thunderstorm early in evening. This storm occurred with passage of cold front and shift in wind from southerly to northwest. Heavy hail and tornadic winds occurred in a number of localities over Stafford, Pratt, Reno, and Sedgwick Counties from about 7:30 till near 11 p.m. Areas most affected were: Northwestern Stafford County 7:27 p.m. Tornadic winds from a mile south of St. John to 3 miles north damaged farm buildings, downed trees, and disrupted electric services. At one place suction so strong door could not be opened, and at same farm concrete and tile shed and silo blasted apart. Hail caused some roof damage. Pratt County.--Severe wind- and rainstorm ripped through Pratt from 7 to 8 p.m., with 4-minute fall of hail doing considerable damage; Pratt County damage estimated at $40,000 by hail to buildings. Hail 1/2 to 1 inch in size. Greenhouse damages totaled 50 percent of glass and crops. Reno County.--7:30 to 8 p.m.; high winds in Hutchinson vicinity ripped limbs off trees, knocked down light poles, broke windows, and blew roofs off buildings. Wind speeds in gusts reached 80 m.p.h. 2 women cut by flying glass. Sedgwick County.--Late at night; wind speed reaching 70 m.p.h., with some hail in southern and southeastern parts of Wichita caused roof and auto damage. 2 small airplanes at Municipal Airport wrecked. Damage estimated about $10,000 by hail. Storm moved eastward.

See footnotes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA Alfalfa and Woods Counties	2	7:05 p.m.	20	400	0	2	5	1	Tornado, wind, rain, and hail	Tornado first touched down in Hopeton causing damage to several houses, overturned 11 railroad boxcars, and demolished grain elevator. 2 persons injured by flying debris. Storm traveled northeastward out of Hopeton through farming community and lifted just a few miles west of Burlington, Alfalfa County. 5 homes destroyed, 15 damaged, and 3 other buildings destroyed and 7 damaged. Small funnel to left of forward direction of main funnel reported not to have touched ground. Considerable hail, some size of golf balls, fell near path of tornado and in places covered ground. Heavy rain and strong winds reported from several areas in Woods County.
KANSAS Attica area, Harper County	2	7:15 p.m.			0	0		1	Tornadoes and wind	Tornado struck 1-1/2 miles west of Attica and caused some damage in town. Buildings twisted and damaged and trees uprooted along path. Some wind damage in Anthony about that hour may have been from remnants of same storm. Second tornado funnel observed aloft 6 miles southeast of Attica moving northeastward toward Harper at 7:10 p.m.
KANSAS Hunter (2-1/2 miles north of) Mitchell County	2	7:30 p.m.	3		0	0			Tornado	Small tornado caused damage to transmission lines and some farm buildings along path as it moved northward.
KANSAS Belleville area, Republic County	2	7:30 p.m.	5-6					1	Wind	Heavy erratic winds caused extensive damage over path from about 5 miles southwest of Belleville through City. Barns, windmills, steel granaries, a few houses, and a number of TV aerials damaged. Storm moved northeastward.
OKLAHOMA Garfield and Grant Counties	2	7:45 p.m.	18	100	0	4	5	1	Tornado	Tornado traveled northeastward from northwestern Garfield County to west of Pond Creek and Jefferson, and lifted just southwest of Medford, Grant County. Extensive damage or complete destruction resulted on 8 farms. 4 persons injured in 1 farmhome that was completely destroyed. On 1 farm 3 head of cattle killed when barn collapsed and was destroyed. On another farm all farm machinery and auto destroyed. Considerable damage to utility lines.
NEBRASKA Jefferson County (southwestern portion)	2	8:30 p.m.	3	*2			4	1	Thundersqualls	Damage too widespread for tornado.
OKLAHOMA Billings (6 miles north of), Kay County	2	8:45 p.m.	4	Narrow	0	0		1	Tornado	Tornado moving northeastward destroyed all buildings except house on farm in extreme southwestern Kay County. Automobile, truck, tractor, hay, grain, and chickens destroyed.
OKLAHOMA Tishomingo, Johnston County	2	9:29 p.m.	8	25	0	0	3	1	Tornado (suspected) and rain	Suspected tornado moving northeastward damaged or destroyed numerous outbuildings and drive-in theater concession stand. Metal fence surrounding theater blown away and numerous speaker posts broken off.
OKLAHOMA Pawnee and Osage Counties	2	9:30 p.m.	3	100	0	1	4	1	Tornado	Tornado moving north-northeastward destroyed 1 home, badly damaged 3 homes, destroyed or damaged many outbuildings, and killed some livestock at Skedee. Damage to outbuildings extended into Fairfax district in Osage County.
OKLAHOMA Newkirk and Hardy, Kay County	2	9:30 p.m.	15	440-880	0	2	5	1	Tornado, wind, hail, rain, and electrical	Tornado moving northeastward first touched down 6 miles southeast of Newkirk, causing minor damage. It then lifted going across Arkansas River, but again touched down on its long march out of Oklahoma into Kansas. Reports indicate several funnels merged into one southwest of Hardy. 2 persons injured when their home collapsed. Many farm buildings completely destroyed and debris scattered over wide area. 6 cattle and a horse killed on 1 farm. An interesting note -- a U.S. Government bond was found in vicinity of Williamsburg, Kans., belonging to man whose home was destroyed by tornado over 100 miles away.
OKLAHOMA McClain, Cleveland, Oklahoma, Pottawatomie, Lincoln, and Creek Counties	2	9:33 p.m.	55	300	5	98	6	1	Tornado, wind, rain, hail, and electrical	Thunderstorm moved northeastward across northern McClain and Cleveland Counties, extreme southeastern Oklahoma County, extreme northwestern Pottawatomie County, across Lincoln County, and on through Drumright in Creek County. First evidence of funnel touching ground was at Jacktown in southwestern Lincoln County. First complete destruction noted near Davenport and Stroud where farm buildings destroyed and number of persons injured. Final destruction noted at Drumright where 5 persons killed and over 30 injured. About 40 city blocks devastated, destroying 63 homes and damaging 203. $200,000 school destroyed. 21 other buildings destroyed including library, Salvation

See footnotes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA (Cont'd)										Army building, church, and several business establishments and 35 damaged. Owner of turkey and chicken ranch southwest of town unable to find a feather of his flock. Of the 5 dead, 4 were from 1 family. Their home was completely destroyed. A visitor in the home was the only survivor, escaping with only minor injuries. Enumerable miracles of not being injured or killed noted. Tornado estimated to have traveled northeastward along its path at rate of 90 m.p.h.
KANSAS Cowley to Coffey Counties	2	9:45-11 p.m.	75	880	2	27			Tornado, wind, rain, hail, and electrical	Tornado dropped to ground almost on Kansas-Oklahoma border in Cowley County and traveled northeasterly path for 75 miles through Cowley, northeastern Chautauqua, Elk, southeastern Greenwood, and Woodson Counties to southwestern Coffey County. Began about 9:45 p.m., near Maple City, Cowley County, and was timed as follows: At Howard 10:10 p.m., Fall River Reservoir 10:55 p.m., Toronto 10:58 p.m., and terminated about 11 p.m., near Gridley, Coffey County, traveling intermittent course of 75 miles in approximately 75 minutes. Measured by destruction, intensity of storm great over much of its path. Numerous houses and many barns and sheds damaged or destroyed. Roar and distinctive whistle of tornado heard by many persons. Plastic belt driven into piece of tree by force of wind in Maple City-Otto area. West of Toronto house simply "fell apart" when tornado hit. Largest stretch of contact with ground was 18 miles from south of Grenola to north of Howard. Several persons carried variable distances through air.
NEBRASKA Auburn (near), Nemaha County	2	10:30-11 p.m.	3	100	0	0	3	1	Tornado, wind, and rain	Garage demolished, car inside not scratched. Debris indicated rotary winds.
OKLAHOMA Haskell, Muskogee, and Wagoner Counties	2	11 p.m.			0	0	2	1	Tornadoes (suspected), wind, rain, and hail	Strong winds did minor damage to windows and roofs south of Haskell, but no reports of funnels on ground. Several funnels aloft sighted or suspected in vicinity of Haskell, Muskogee, and south of Wagoner. Some hail also occurred in the area. Storm moved northeastward.
IOWA	2	Evening				5			Wind, hail, and electrical	Wind, with local thunderstorm activity, damaged buildings, powerlines, and automobiles both in cities and rural areas.
OKLAHOMA Amorita, Alfalfa County	2	P.m.						1	Wind	Strong winds blew down trees, TV antennas, and windmills and damaged numerous outbuildings. Storm moved northeastward.
	2									Minor storms also reported in Bracken County, Ky.; Boonville, Mo.; near Humphrey and near Uehling, Nebr.; at Hobbs, N. Mex.; and at Cushing, Enid, Miami, Seiling, Tonkawa, Vinita, and Waukomis, Okla.
KANSAS Butler and Harvey to Atchison Counties	2-3	9:30 p.m. 2d -12:25 a.m. 3d	150	200-880	0	8	6		Tornadoes, wind, hail, and electrical	This series of 4 tornadoes followed by approximately 6 hours almost same path of severe hail- and heavy rainstorm. Storm cell producing these tornadoes observed on Topeka radar and followed until it dissipated northwest of Nortonville. First damage at Whitewater and Elbing, Butler and Harvey Counties about 9:30 p.m. This was likely inception of tornado, but at that time was limited to or described as severe wind damage. Storm developed into full-fledged tornado 8 miles south-southwest of Florence and followed curving northwest to northeast path to 2-1/2 miles east-northeast of Florence where it dissipated about 9:45 p.m. Funnel covered path about 10 miles long with variable width. 6 farm building sets hit with damages ranging from $400 to $1,500 each. Evidence of walls bulging and then returning to position. 90-pound stone dropped through roof of 1 house. Most houses escaped serious damage, but barns and sheds generally wrecked, and debris scattered over fields to north sometimes for several miles. Second tornado began about time first one dissipated. Its inception was in southwestern Chase County and traveled almost due north for 5 or 6 miles and lifted after doing some damage to buildings in or near Cedarvale at 10 p.m. Apparently third funnel originated west of Cottonwood Falls and came to ground 2-1/2 miles west of Strong City. At this point car picked off highway, whirled around several times and deposited it in field 250 feet north of road. Driver suffered only shock and some bruises. Car trunk blown open with lid bent over car top. This occurred about 10:40 p.m. From this point funnel remained on or close to ground as it progressed northeastward across northeastern Chase County, extreme southeastern corner of Morris County, northwestern Lyon County, across Waubaunsee County from south-central to east-central boundaries and into Shawnee County where it apparently lifted a mile north of Dover. Some

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										occasional damage done further north, but presumably from severe winds as remnants of tornado. At Lake Kaholo where clock stopped just before 10:45 p.m., damage done to 16 summer cabins near lake which is on Morris-Chase County line 20 miles northwest of Emporia. Path of destruction continued northeastward with damages evident in timbered areas and to all farm plants. 1 mile south of Bushong boy pulled out of upstairs window suffered leg injury. 4 men injured at rock quarry 5 miles south of Eskridge when conveyor belt blown off its track, and some house trailers overturned. Electric feeder line east of Eskridge went out of service at 11:21 p.m. Break in line was about 3 miles east of Eskridge. Tornado terminated north of Dover about 11:30 p.m. Fourth likely funnel to develop in series became evident in northwestern Osage County about 7 miles east of Harveyville near 11:30 p.m., 8 ot 9 miles southeast of termination of third tornado. Farm plants and tree damage gave evidence of tornado path northeastward to about 3 miles north of Auburn where funnel lifted. Tornado struck at 11:35 p.m., 2 miles west of Auburn, evidently skipped over next 8 miles and hit again at 11:47 p.m., in Seabrook, in southwestern Topeka where glass fronts sucked out, brick facing torn off, and path of damaged trees and TV aerials indicated its further path northeastward across town. Again it lifted for about 14 miles and struck with violence east of Rock Creek 1 mile. Occasional tree and some building damage occurred from there to 1 mile east of Valley Falls where another 15-mile path of wreckage began which terminated northwest of Nortonville near Monrovia and Farmington. Tornado hit east of Rock Creek about midnight on 3d and powerlines 4 miles northeast of Valley Falls went out at 12:13 a.m. 2 persons injured near Valley Falls. This storm cell with its 4 or more funnels caused damage over path of 150 miles which traveled in approximately 3 hours. Definite roar and distinct whine reported by many persons. Woman who glanced out open door as cloud approached southwestern Topeka had a dreadful popping in her ears, pained her until next day. Funnel passed almost directly over her house. Intensity of storm varied. Few well-built houses damaged greatly over much of path. Damage in timbered areas showed possibility of several simultaneous funnels at one time south of Eskridge. Some places showed damages over swath 1/2 mile wide with debris blown toward center.
TEXAS	2-3		500	*100	3	10	4		Wind and dust	Storm produced by advancing cold front. Winds ranged up to 80 m.p.h. Main force centered over Permian Basin. Street lights turned on in middle of afternoon in west on 2d. In Odessa, dust cut visibility to about one-half block as winds knocked out several plate-glass windows in downtown stores, damaged roofs of homes, and twisted television antennas. In El Paso area, visibility ranged from zero to 100 feet, in Pecos 50 feet, and in Lubbock one-half block. Winds at Lubbock 64 m.p.h., in gusts, El Paso 60 m.p.h, Marfa and Alpine recorded 80 m.p.h. Winds disrupted power and communication services at Big Spring for 45 minutes and demolished small buildings at Aspermont and Snyder. Airplanes grounded in most western cities and buses ran hours behind schedule. At least 3 deaths due to traffic crashes in blinding dust. Strong southerly winds (50 m.p.h.) in advance of cold front burned some cotton in Rio Grande Valley and covered some small plants with blowing dirt. Storm moved east and south on 3d, spreading dust over most of State. 260,000 acres that had not blown previously suffered moderate to severe wind erosion during this storm, according to State Soil Conservation Department.
OKLAHOMA Sobol, Pushmataha County	3	12:05 a.m.	2	100	0	3	4	1	Tornado and wind	Tornado moved northeastward through Sobol community, demolishing school building and all buildings on 1 farm. House near school and 3 other sets of farm buildings were damaged. Numerous trees blown over.
OKLAHOMA Craig and Ottawa Counties	3	12:10 a.m.	21	400	0	46	5	1	Tornado, wind, rain, hail, and electrical	Strong straight-line winds struck Vinita in Craig County just after midnight, destroying trees, TV aerials, and roofs. Damage estimated at $8,000. Damaging winds continued northeastward out of Craig County, causing damage to farmhomes and outbuildings, no great losses reported. Tornado first struck ground near Narcissa and stayed on ground through Miami, Quapaw, and on into Baxter Springs, Kansas and Joplin, Missouri. Total path of storm 42 miles long, 21 of which in Oklahoma. Miami hardest hit where 46 persons injured, 16 of which remained in hospital and 3 listed as critical. 21 homes destroyed and 35 damaged. 5 homes des-

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA (Cont'd)										troyed in Quapaw, but no injuries reported. Estimated damage in Quapaw $25,000. National Guard Armory in Miami received estimated $50,000 damage. Northeastern Oklahoma A&M College at Miami received estimated $48,000 damage to 10 buildings destroyed, 5 buildings damaged, and farm machines, hay, feed, and 400 baby chickens lost. Sunbeam farms received estimated $80,000 damage to 21 barns destroyed, 3 cattle killed, and 18 injured. Total estimated damage in Ottawa County placed at half a million dollars. Storm moved northeastward.
KANSAS Baxter Springs, Cherokee County	3	12:13 a.m.	1-1/4	50	0	6	5		Tornado, wind, hail, and electrical	Tornado appears to have been funnel that first struck Drumright, Okla., at 9:36 p.m., on 2d and terminated about 12:45 a.m., after hitting near Joplin and Webb City, Mo. There may have been several funnels in parent storm over path of 160 miles. Damages at Baxter Springs include 14 houses destroyed and 13 damaged, 7 large electric powerpoles blown over, large truck overturned, baseball grandstand demolished, and trees uprooted. Tornado damage path extended northeastward from southwest of Baxter Springs near State line to eastern edge of Baxter Springs along Highway 166. Houses with bulged walls and lifted roofs attest to explosive tendency created by storm. Dog found in attic of unoccupied house near tornado path, with his head protruding through hole in shingles.
MISSOURI Noel and Pineville, McDonald County	3	12:30 a.m.	1-8	35	0	1	4	1	Tornado, rain, and electrical	Path of tornado, not continuous, moved northeastward. After striking near Noel, it came down southwest of Pineville to cross through southern part of Pineville. 5 barns destroyed, home and roof damaged, and trucks and trailers damaged.
MISSOURI Joplin, Webb City, and Cartersville, Jasper County	3	12:50 a.m.	1	50	0	2	5	1	Tornado, rain, hail, and electrical	Tornado moving northeastward destroyed roof on factory, damaging merchandise. 13 block-long area affected. 30 homes damaged, some garages destroyed. This tornado evidently passed through Baxter Springs, Kans., earlier.
ILLINOIS Most of State	3	1 a.m.-7 p.m.					5		Wind, rain, hail, electrical, and dust	Numerous heavy thunderstorms occurred at various times beginning at 1 a.m., at Moline with heavy showers, duststorms, and hail. Wind and hail damage in at least a dozen cases not included in other storm reports of this date.
ARKANSAS Salem community, Yell County	3	4 a.m.	12					1	Wind and rain	Church destroyed and 7 houses damaged. Storm moved northeastward.
WISCONSIN Highland (near), Iowa County	3	11 a.m.	4	200	0	0	5	1	Tornado	Tornado moving northeastward struck only in rural area 5 miles northeast of Highland.
MISSISSIPPI Hollywood (3 miles east of), Tunica County	3	2:50 p.m.	4/10	35-40	1	3	4	1	Wind and rain	No funnel seen and no evidence of rotary winds. Schoolhouse and tenant houses destroyed or damaged. Teacher in school killed by falling timbers, 3 students injured. Storm moved east-northeastward.
IOWA	3	All day				11	5	1	Wind	Buildings and utility lines damaged.
NORTH DAKOTA Eastern portion	3	All day	200				4	1	Wind, snow, and freezing rain	Lashing combination of blowing snow and freezing rain halted traffic in much of east all day. Bad weather came from fringe of low pressure system moving northeastward from Nebraska and Colorado. Normally heavy truck and bus traffic on U. S. Highway 10 came to halt before noon because high winds and icy surfaces caused cars to skid into ditches. Many cars in ditch in Valley City area. Communications disrupted and numerous power failures in Fargo area due to wind and freezing rain. About 1,200 homes in Fargo without electricity from 1:30 to 4:15 p.m. In many other areas powerlines downed and many telephones out, mainly due to wet cables.
ARKANSAS Thebes community, Ashley County	3	12:25 p.m.	2	200	0	0	3	1	Tornado and rain	Tornado moving northeastward damaged house and destroyed barn and some sheds; also destroyed timber in path 200 yards wide and 1/4 mile long.
WISCONSIN Bancroft area, Portage County	3	12:50 p.m.	18	100	2	7	5	1	Tornado, rain, hail, and electrical	Area foggy. Hail reported with and after tornado with largest stones after. Buildings, cars, and trees picked up and blown by tornado. Tornado moved northeastward from Bancroft to near Amherst.
ARKANSAS Osceola (3 miles west of), Mississippi County	3	1 p.m.	20	25-100		5	4	1	Wind, rain, hail, and electrical	6 tenant houses, 2 barns, several sheds, and communication lines destroyed. Storm moved northeastward.
ARKANSAS Jerome Road community, Chicot County	3	1 p.m.	1	20	0	0	4	1	Tornado, wind, and rain	Tornado moving northeastward destroyed 1 house and damaged 2 others.

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TENNESSEE Dyersburg (vicinity of), Dyer County	3	2-2:15 p.m.	12		2	6	4	1	Wind	5 homes and 1 barn with major damage, several homes with minor damage, church and school damaged in Burgies Chapel and Jenkinsville communities. 1 home and barn damaged in Maxey community and 2 homes and 1 barn damaged between Newbern and Trimble. Storm moved northeastward.
ILLINOIS Northeastern portion	3	2-4 p.m.	75			10	5		Wind, rain, hail, and electrical	Group of heavy thunderstorms swept northeastward from near Ottawa through Joliet area and across Chicago and vicinity. Heaviest damage at Joliet Airport where hangar wrecked and planes damaged. Wind gust showed 109 m.p.h., before anemometer wrecked. 9 persons blown through barricade and into an excavation in Chicago.
WISCONSIN Berlin area, Green Lake and Winnebago Counties	3	2:05 p.m.	12	400	7	50	6	1	Tornado, rain, and hail	Tornado moved northeastward, demolishing about 20 homes and damaged many more; wrecked Sands Knitting Mill and Carnation Plant, downed communications and powerlines, snapped telegraph poles and trees, with tree limbs thrown in varying directions, and damaged several automobiles and other property in path. Hailstorm preceded tornado about 1 hour and light shower fell after tornado. After tornado, package of knitting products from wrecked knitting mill was recovered undisturbed 35 miles north of where tornado occurred; package of papers found 75 miles north-northeast; and carton of deer hides also recovered 60 miles northeast.
ILLINOIS Lawrenceville area, Lawrence County	3	2:30 p.m.	3		0	0	4	1	Tornado (suspected) and hail	Large building at sawmill northeast of Lawrenceville destroyed. Large concrete building also damaged and stacks of lumber scattered. Windows blown out of several homes in southeastern part of town. Storm moved northeastward.
MISSISSIPPI Sunflower to Lee Counties	3	2:30-6:30 p.m.	117	*20	0	6	5	1	Tornadoes, wind, hail, rain, and electrical	Storm moved east-northeastward with apparently 1 or 2 tornadoes. Began at Lynn, 12 miles south-southwest of Ruleville, Sunflower County, and passed through Leflore, Grenada, Yalobusha, Calhoun, Pontotoc Counties to near Saltillo, Lee County. 2 persons injured at Lynn when their homes demolished and 6 injured at Belden, Mt. Vernon, Bucy, and Saltillo, Lee County. Heavy hailstorm at 4:30 p.m., at Coffeeville caused considerable damage. Rains 2 to 3 inches attended passage of this line squall. Storm passed mostly over open farmland with no large town near center of greatest activity. Damages in Lee County estimated at $200,000, with remainder spread over other Counties in path. Speed of movement near 30 m.p.h.
ILLINOIS Pulaski and Gallatin Counties	3	3 p.m.	50				4	1	Wind	Barn 2 miles southwest of Grand Chain and another 3 miles southeast blown down, and house 1-1/2 miles southeast damaged. Storm moved northeastward.
ILLINOIS Cullom (5 miles northeast of), Ford County	3	4 p.m.	2	50	0	0	4	1	Tornado (suspected), rain, and dust	New chickenhouse completely demolished, barn unroofed and otherwise damaged, other buildings damaged, and windows broken in house on 1 farm. Storm moved northeastward.
KENTUCKY Webster and Henderson Counties	3	4-5 p.m.	10	200-250	3	2	4		Tornado, wind, rain, and electrical	Tornado of bounding type moving northeastward first apparently hit near town of Dixon in Webster County and seemingly dissipated north of community of Zion in Henderson County. Buildings on several farms destroyed or badly damaged. Considerable livestock lost. In addition to the 1 fatality as direct result of tornado, 2 others killed in auto accident about same time. Auto accident result of bad driving conditions due to wind and heavy rain.
ILLINOIS De Witt and Piatt Counties	3	4:08 p.m.	10	40	0	0	4		Tornado	Tornado moved northeastward. Roofs torn off, windows broken, and farm buildings damaged on 4 farms in De Land and Weldon areas.
TENNESSEE Lexington area, Henderson County	3	4:45-5 p.m.	12	100	3	60	6	1	Tornado, wind, rain, and hail	Tornado moved northeastward. About 50 homes and 2 business houses destroyed; 75 homes had major damage; 175 homes and about 20 business houses had minor damage. Quite evident that winds (outside funnel path in Lexington) were in excess of 60 to 70 m.p.h.; it is possible winds may have reached speeds in excess of 125 to 150 m.p.h., where such heavy and mighty destruction done by blast force.
ILLINOIS Pana area, Christian County	3	5 p.m.	5	100	0	0	4	1	Tornado	2 buildings overturned on farm east of city and trees uprooted in northeastward path.
INDIANA Klondike (2 miles northeast of), Vermillion County	3	5 p.m.	**50	10	0	0	4	1	Tornado, wind, rain, and electrical	Small tornado moving northeastward tore roof from barn and shingles from farmhouse. Attic window blown out.

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
INDIANA Washington County	3	5:45 p.m.	23	150	0	12	6	1	Tornado, rain, and electrical	Tornado moving northeastward touched ground about 75 percent of time along its path through Townships of Howard, Washington, Franklin, and Gibson. Over 100 properties suffered damage. A church and school damaged at Canton. Long-span, steel bridge located 5 miles southwest of Salem blown off its supporting abutments. A deep freeze carried 1/2 mile. Many structures burst outward as tornado passed.
INDIANA Yellow Creek Lake, Kosciusko County	3	6:04 p.m.	1-1/2	70	0	0	4	1	Tornado, rain, and hail	Tornado moved northeastward. 5 cottages and a church demolished, 5 other cottages damaged. Funnel cloud well described by witnesses.
Michigan Allegan, Ottawa, Kent, and Montcalm Counties	3	6:30 p.m.	65	100-400	18	340	7	1	Tornado, wind, rain, hail, and electrical	Tornado first reported on shore of Lake Michigan near Saugatuck about 6:30 p.m. It moved northeastward from there, passing south of Holland and Zeeland, striking Hudsonville area, Ottawa County, at 6:58 p.m. Hudsonville was left in ruins with 14 persons dead. Next locality in storm's path was suburban business community of Standale, west of Grand Rapids, which was nearly wiped out at 7:11 p.m., with loss of 4 more lives. Tornado continued on through northwestern suburban area of Grand Rapids, wiping out large trailer park near Comstock Park, and on through Rockford and northern Kent County, apparently dissipating near Trufant, Montcalm County, at 7:41 p.m. Total of 18 persons lost their lives and 340 reported injured, 106 of whom were hospitalized. Destroyed or badly damaged were 332 homes, 100 farm buildings, and 105 other structures. Tornado funnel visible for several miles in Grand Rapids area.
MICHIGAN Manistee, Benzie, Grand Traverse, and Leelanau Counties	3	6:35 p.m.	52	50-400	2	24	5	5	Tornado, wind, rain, hail, and electrical	Torando developed a short distance north of Portage Lake, Manistee County, and moved northeastward through Benzie County, the northwestern corner of Grand Traverse County, and eastern Leelanau County, entering Grand Traverse Bay southeast of Suttons Bay about 7:22 p.m. Path through rural areas and did not hit communities of any size. Funnel reported to have lifted several times along its path. 1 woman killed and another died later of injuries in Benzie County; injuries reported to 24 persons. 13 homes destroyed, 7 damaged, and a large number of barns and other farm buildings destroyed. Some forested areas in storm's path heavily damaged and 15,000 fruit trees injured or uprooted in Leelanau County.
INDIANA Wawaka area, Noble County	3	6:50 p.m.	1/10	75	0	0	4	1	Tornado	Tornado lifted trees and a barn, dropping them on highway 1 mile west of Wawaka. Barn on nearby farm also smashed. Some livestock killed. Witness reported his car picked up and turned around by wind. Storm moved northeastward.
ALABAMA Colbert and Lauderdale Counties	3	7 p.m.					4	1	Wind, electrical and rain	In addition to scattered wind damage to buildings, lightning did $500 damage to house in Florence, while at Red Rock, 25 miles west of Sheffield, $4,000 house burned down, allegedly by lightning.
INDIANA Richmond, Wayne County	3	7-8 p.m.	5	50	0	0	4	1	Tornado, wind, and electrical	About 7 miles south of Richmond several farms and homes damaged. Storm moved northeastward.
INDIANA Topeka area, Lagrange County	3	7:05 p.m.			0	0	4		Tornado and rain	Several barns and a house destroyed between Topeka and Lagrange between 7:05 and 7:20 p.m. At Topeka damage confined to a half-block area on north edge of town.
MICHIGAN Van Buren, Allegan, Barry, and Kent Counties	3	7:15 p.m.	58	50-200	0	12	6	4	Tornado, wind, rain, hail, and electrical	Storm apparently developed just southwest of Bangor, Van Buren County, and moved northeastward through Allegan County, the northwestern corner of Barry County, and into southeastern Kent County, dissipating near Highway 16 south of Lowell about 8:30 p.m. Although much damage occurred in rural areas, heavy property losses also sustained in communities of Bangor, Bloomingdale, and Allegan, as funnel passed through outskirts of those towns. 29 homes destroyed, at least 13 homes damaged, and a large number of barns and other farm buildings wrecked. Factory on south edge of Allegan demolished. Funnel reported to have lifted several times along its path.
INDIANA Lagrange area, Lagrange County	3	7:20 p.m.			0	0	4	1	Tornado and rain	About 3 miles southwest of Lagrange house blown from its foundation and barns blown down. Farmer reported 1/2 inch of rain 1/2 hour before tornado struck.
INDIANA Emma, Lagrange County	3	7:20 p.m.			0	0	4	1	Tornado and wind	Several buildings destroyed or damaged. Mother and son riding in horse-drawn buggy tossed into nearby field. They escaped injury, but buggy demolished and horse injured.

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MISSISSIPPI Cedar Bluff area, Clay County	3	7:30 p.m.	6	100	0	2	5	4	Tornado, wind, rain, and hail	Moved east-northeastward from Cedar Bluff to Siloam community. Destroyed 2 churches, several homes, and numerous barns; killed several thousand chickens, a number of dairy cattle, and several horses.
TENNESSEE Possumtown community, Sumner County	3	7:45 p.m.			0	0		1	Tornado	In Possumtown community, located between Fountain Head and Sulphura, number of homes and 12 barns destroyed.
OHIO Jenera, Hancock County	3	8:30 p.m.			0	0			Tornado, wind, rain, and electrical	Funnel cloud moved eastward aloft.
OHIO Toledo	3	8:45 p.m.					4	1	Wind, rain, and electrical	Thunderstorm winds recorded up to 85 m.p.h., at Airport damaged residences, light buildings, signs, trees, etc. Storm moved eastward.
MICHIGAN (Lower)	3	Evening			0	3	5		Waterspout, wind, rain, electrical, and hail	Severe thunderstorms hit many localities. Several barns and other farm buildings destroyed or damaged in Ionia, Gratiot, and Wexford Counties. Heavy rains caused flooding in several areas. Some roads and streets washed out in Ionia area. At 5:22 p.m., large waterspout observed over Lake Michigan near New Buffalo. Spout moved northeastward and dissipated as it reached shore between Bridgman and Stevensville in Berrien County about 1-1/4 hours later.
INDIANA Leiters Ford, Fulton County	3				0	0	3	1	Tornado	Several barns damaged.
INDIANA Connersville, Fayette County	3						3	1	Rain and electrical	5-inch rain in 1-1/2 hours flooded streets and basements.
KENTUCKY Pride, Union County	3				0	1	3		Tornado	Tornado dipped down near community of Pride. Several residences, barn, and garage damaged. Probably part of same storm that struck Webster and Henderson Counties.
	3									Minor storms also reported near Helena, Ark.; and at Portland, Ind.
SOUTH DAKOTA Central portion	3-4								Freezing rain, snow, and wind	50 towns isolated from telephone service; 3,000 wire breaks and 300 telephone poles down. 3 inches of snow and strong wind caused poor visibility. Bus and cars skidded from highway. Storm moved northeastward.
LOUISIANA Angola, West Feliciana Parish	4	7 p.m.					3	3	Hail, wind, and rain	Damaged some buildings and crops.
RHODE ISLAND Bristol County	4	8:30-9 p.m.				1	2		Electrical and rain	Woman injured by concussion as bolt hit nearby tree. Power off in 6,000 homes, shops, etc., in Warren, Bristol, and Barrington.
MISSISSIPPI Warren and Hinds Counties	5	5:30 a.m.	25	880			4	1	Wind, rain, and hail	Began about 10 miles south of Vicksburg and moved into Hinds County near Bovina; attended by hail in places and winds estimated at 100 m.p.h. Storm moved east-northeastward.
TEXAS Brazos, Williamson, Bell, and Hardin Counties	5	3:15 p.m.	4-5	1,500	0	0	5		Tornadoes, wind, rain, and hail	Tornado at Bryan, Brazos County, associated with squall line. 3 other funnels which did not touch ground spotted west of Ft. Hood and north of Taylor and Saratoga. Strong winds blew store windows in at Taylor, tore off 50-foot section of livestock barn at Circleville. At Killeen hail knocked radio station KLEN off the air. High winds blew drive-in theater movie screen down at Huntsville. Storm moved eastward.
MISSISSIPPI Russell. Lauderdale County	5	Afternoon					4	1	Hail, wind, and rain	Hailstorm attended by high winds and heavy rain; actual time not reported.
LOUISIANA Franklin and Richland Parishes	5	5:30 p.m.	20	100-*5	0	2	5	1	Tornado, wind, rain, and hail	200 homes destroyed or damaged along path about 5 miles wide, with greatest damage between Baskin and Mangham; barns, etc., damaged. Storm moved northeastward.
ALABAMA Oak Grove, Chilton County	5	10 p.m.					4	1	Wind, rain, hail, and electrical	
LOUISIANA De Soto Parish	5	P.m.					5	1	Rain and wind	10-foot wall of water swept down Redschute Bayou and washed out bridge on country road.
	5									Minor storm also reported at Arcadia, La.

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
GEORGIA Atlanta, Fulton County	6	Noon			2		2	1	Wind and rain	Trees uprooted and powerlines downed. Falling tree, apparently weakened by strong winds, killed 2 women hanging out clothes. Heavy rains caused temporary flooding of some sections of City.
SOUTH CAROLINA Spartanburg area, Spartanburg County	6	12:30-1:50 p.m.	15	*1			4	4	Wind, rain, hail, and electrical	Squall-line thunderstorm caused considerable minor property damage. 1 home unroofed. Storm moving eastward accompanied by hail did considerable crop damage near Reidville.
SOUTH CAROLINA Abbeville area, Abbeville County	6	1:30 p.m.	5	50	0	1	5	1	Tornado, wind, rain, hail, and electrical	Funnel observed for distance of about 5 miles, although it apparently touched ground only briefly at times; first noted south of city near junction of Highways 72 and 28, moved northeastward into area to north of Greenwood Highway. 85 homes damaged slightly, 4 with major damage, and 1 completely destroyed. Abbeville Mills incurred damage estimated at $25,000, including destruction of roof, shattered glass, and damage to watertank. In home destroyed, 4 members blown 50 feet, 1 covered with debris, but miraculously only 1 injured.
NORTH CAROLINA Gaston, Mecklenburg, and Union Counties	6	2-3 p.m.	50	100	0	0	4		Tornado	Skipping path. Part of same general storm situation that caused similar damage in adjoining South Carolina. Trees uprooted and houses destroyed and damaged in a dozen communities from Crowders, Gaston County, eastward to Stallings, Union County.
NORTH CAROLINA Harnett and Lee Counties	6	4:30 p.m.	15	100	0	0	4		Tornado	Skipping path. Damaged several dwellings, destroyed outbuildings, and killed a horse and some poultry.
MINNESOTA Northern half	6-7	P.m-a.m.							Snow and wind	Heavy snow accompanied with high winds. New snowfall general 2 to 7 inches. Heaviest snow at Arrowhead, 45-m.p.h., winds at Silver Bay blew over steel pylon supporting 110,000-volt electric transmission line. Due to blowing snow traffic stymied. Many accidents reported.
IOWA	7	All day				2	4		Wind	Buildings, utilities, and cars damaged, and countless tons of topsoil blown from fields. Some oat seedings damaged, but early enough for replanting.
GEORGIA Southeastern portion	7	Day			2	2	2	1	Wind and dust	Tree felled prematurely by wind killed man near Garfield. Man drowned off Savannah after wind capsized his boat. 2 persons injured in pileup of 6 automobiles near Waynesboro during blinding sandstorm.
MISSOURI Woodson Terrace, St. Louis County	7	Day					4	1	Wind	Interior wall of school under construction crumbled and heating and plumbing fixtures damaged.
NORTH CAROLINA Harnett County	7	Afternoon					4		Wind and dust	County agent reported erosion damage from blowing dust.
SOUTH CAROLINA Most of State	7	Afternoon				9	4	4	Wind and dust	These unusually strong winds, damaged truck and newly set tobacco generally in eastern South Carolina with damage estimated at $10,000, and caused considerable soil erosion on lighter soils; property damage estimated at $2,000. Dust reported to have caused 3 wrecks in Orangeburg area and 7 wrecks in Lexington County; collisions involved 11 cars with injuries to 3 persons in Bamberg area, 8 cars in Marlboro County, 6 cars with injuries to 4 persons in Darlington County. Strong winds wrecked home in Columbia and caused considerable minor damage. This strong wind also contributed to a number of forest fires. 2 persons injured.
NORTH CAROLINA Edenton, Chowan County	7	5 p.m.				2	3		Wind	Heavy barricade blown down, injuring 2 persons.
KENTUCKY Henderson County	7	P.m.			2	1	3		Wind	Wind toppled huge tree which fell on 3 automobiles.
	7									Minor storms also reported near Malta, Idaho; and at Covington and Roanoke, Va.
CONNECTICUT and RHODE ISLAND	7-8	6 p.m. 7th-noon 8th				4			Snow, wind, and hail	Especially bad storm in northwestern Connecticut with snowfalls 8 to 16 inches and drifts 8 to 10 feet deep. Snowfalls 4 to 8 inches in northern Connecticut and 8 to 10 inches in northern Rhode Island. Many power and telephone failures throughout 2 States due to heavy snow and falling tree branches. 7,000 homes, etc., without power in Waterbury area. Injuries due to traffic accidents.

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
NEW JERSEY Entire State	7-8					5	5	1	Wind, rain, sleet, and snow	Greatest damage to telephone- and powerlines. Heavy, wet snow clung to wires, froze, then offered great resistance to 25-to 45-m.p.h., winds. Wires snapped. Telephone services and power interrupted in hundreds of homes. Some large trees downed, 1 fell on moving vehicle and caused much damage. Injuries were in traffic accidents, mostly in north where up to 16 inches of snow fell. Central and south had mostly slushy conditions, but large, wet flakes made visibility near zero for drivers on night of 7th. Storm moved northeastward.
OKLAHOMA Pawnee County	8	11:30 a.m.			0	0		1	Tornado (suspected), wind, rain, and hail	General damage over Pawnee County from strong winds which took its toll of outbuildings, utilities, etc. Light hail accompanied storm.
NEW ENGLAND Central and northern portions	8	All day			9	5	5	1	Snow, wind, and electrical	One of worst April snowstorms of record in area. Southeastern Massachusetts and Cape Cod area escaped brunt of storm as precipitation there occurred mostly in form of rain. Elsewhere new snow depth ranged from 3 to 5 inches along coast to more than 15 inches over central Massachusetts and Berkshires of Massachusetts. Away from immediate coast, character of snow was "dry" and high winds caused severe drifting. Heaviest damage to power systems. Thousands of homes without light or heat for periods that lasted for more than 24 hours in many cases. Transportation hard-hit with most scheduled airline flights cancelled, trains and buses delayed, and in-city auto traffic tangled and nearly halted. Main highways, however, kept open to traffic. School sessions and other planned meetings cancelled. Snow removal costs accounted for much of total loss and were increased for many communities which had to reassemble plows, dismantled at end of March. Motion picture screen of drive-in theatre in Adams, Mass., blown over during storm with estimated damage of $25,000. Most of reported deaths attributed to overexertion as result of shoveling snow.
KANSAS South-central portion	8	Afternoon-night			0	0			Tornadoes, wind, dust, sleet, snow, and electrical	High winds caused dust blowing over south-central and southwest Kansas during day which increased during afternoon. Late in day wind turned to west and brought light rain which turned to snow, depositing from 4 to 6 inches in Dodge City-Garden City area which blocked roads for several hours. Thunderstorm about 9:30 p.m., from Dodge City to Pratt, accompanied by strong, west winds and some hail and quick drop in temperatures to near freezing. Winds reached 50 m.p.h., at Garden City. At Pratt sleet covered ground and hail 1/4 to 3/4 inch in diameter fell at Greensburg. Heavy, wet snow broke tree limbs and shrubs. Wind and ice east of Garden City took heavy toll of transmission lines. As storm progressed eastward it diminished, but at 11:55 p.m., tornadoes aloft reported near Belle Plaine -- one a short distance west and one 4 miles east moving northeastward; no damage. Damages offset to some extent by benefit from moisture which was of much benefit to wheat.
OKLAHOMA Reydon, Roger Mills County	8	7:45 p.m.			0	0	2	1	Tornado and wind	Funnel sighted 1 mile west of Reydon, moving northeastward. It came down to tree-top level, breaking trees and 1 utility pole.
OKLAHOMA Waynoka, Woods County	8	9:45 p.m.					4	2	Wind, rain, and hail	Strong winds and small hail which piled up to more than 1 inch on ground caused widespread damage over Woods County to windows, roofs, TV antennas, trees, fences, signs, awnings, and outbuildings. Hail damage to crops not readily determinable. Storm moved southeastward.
OKLAHOMA Garfield, Alfalfa, and Grant Counties	8	10:15 p.m.	8	400	0	4	5	4	Tornadoes, wind, rain, hail, and electrical	Evidence indicates several tornadoes or funnels aloft skipped around over Garfield County causing widespread damage. Area of greatest destruction from Waukomis to Enid. Numerous farmsteads in Waukomis area received complete destruction to barns and outbuildings, livestock killed, and farm supplies and equipment destroyed. Semitrailer tipped over and thrown 40 feet. Several business establishments received roof and window damage, as well as did many homes. Large number of trees uprooted and most TV antennas destroyed. Roof of high school lifted and the building declared unsafe. 75 electric poles broken over by twisting winds. In Enid area 4 persons injured as storm moved over southern and eastern portions of city. At municipal airport alone, estimated $200,000 damage resulted to several hangars and 8 small planes destroyed. City of Enid estimated $25,000 damage to street lights; telephone company estimated $10,000 damage to their system; electric company estimated $25,000 in just labor to restore services. Many homes damaged or destroyed. Large

See footnotes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA (Cont'd)										radio antenna toppled. Hail size of golf balls along with winds of 90 m.p.h., accompanied tornado through Enid. Other areas in Garfield County received extensive damage. Garber community received wind and hail damage; over 300 insurance claims filed. Garber school also received severe damage. 6 box cars blown over at Douglas. In Covington home destroyed, others damaged, outbuildings destroyed, railroad freight house destroyed, and many windows broken. Severe hailstorm seemingly traveling from east to west from Hunter, Garfield County, to Helena, Alfalfa County, covered 2-mile path with up to 90 percent crop loss. Southern Grant County also affected by this severe hailstorm with up to 90 percent loss to wheat crop. Also damage by hail in area from Breckenridge to north of Garber.
OKLAHOMA Grant and Kay Counties	8	10:30 p.m.							Wind, rain, hail, and electrical	Only reports available were of severe hail damage across southern Grant County. Light hail reported from other parts of Grant and Kay Counties.
OKLAHOMA Marshall, Logan County	8	10:30 p.m.						1	Wind	Damaging winds blew down trees, outbuildings, windows, and knocked down 2 brick walls. Storm moved southeastward.
OKLAHOMA Major County	8	10:35 p.m.	20	*5	0	0	5	1	Tornadoes (suspected), wind, rain, and hail	Severe windstorm with possible tornadoes struck area of Major County from Fairview to Isabella and surrounding vicinities. Debris thrown in every direction indicating rotating motion. Extensive damage to homes, barns, outbuildings, TV aerials, roofs, windows, utilities, fences, etc., evident over entire area. No injuries reported which is most unusual considering amount of destruction which resulted. Nearly every farm in area received considerable damage. Winds estimated up to 85 m.p.h. Storm moved southeastward.
OKLAHOMA Noble County	8	10:45-11:30 p.m.				1	5	5	Wind, hail, and rain	Severe windstorm moved across southern Noble County causing extensive damage to windows, roofs, outbuildings, utilities, etc. Marble-sized hail fell in northern Noble County from Billings to Red Rock covering ground up to 1-1/2 inches deep. Crop damage varied from 40 to 100 percent loss. 1 person injured in auto accident near Perry due to poor visibility caused by blowing dust. Storm moved eastward.
OKLAHOMA Greer, Kiowa, and Jackson Counties	8	11 p.m.						1	Wind, hail, and dust	Strong winds and some hail from thunderstorm over southwestern area caused considerable damage to trees, TV antennas, roofs, signs, etc. Winds estimated at over 60 m.p.h.
OKLAHOMA Payne County	8	11:30 p.m.	7	50	0	0	5	1	Tornado (suspected), wind, and hail	Shifting winds did extensive damage in Payne County between Stillwater and Glencoe. Funnel sighted in Glencoe area, but is believed to have remained aloft. Damage to roofs, outbuildings, cabins, and facilities in vicinity of Yost Lake. Storm moved southeastward.
OKLAHOMA Texas, Beaver, Harper, and Woodward Counties	8	Evening				3		2	Wind, rain, hail, and dust	Severe duststorm with some rain and hail over northwestern counties caused auto accident near Guymon which injured 3 persons, and widespread wind damage to trees, TV antennas, windows, utility poles, and outbuildings. Wind estimated at over 80 m.p.h. Storm moved southeastward.
	8									Minor storm also reported in Cleburne County, Ala.
TEXAS Most of State	8-9	3 p.m.	600		3	5	3		Dust and wind	3 killed and 5 injured in car accidents attributed to duststorm at Amarillo, where visibility remained at zero for 4 hours. Storm spread from Panhandle through most of State on 9th. Visibilities reduced to 1/8 mile at Del Rio and Dallas; Midland, Dalhart, Borger, Lubbock, and Amarillo blacked out. High winds with gusts to 78 m.p.h., moved dust into central Texas. Trace of snow fell at Amarillo after cold frontal passage dropped temperatures to 33°. Light showers at Dallas and Waco along with dust resulted in sprinkle of muddy water. On 9th squall line developed ahead of cold front as it moved into Gulf Coast area, setting off thunderstorms from Port Arthur to Brownsville with locally heavy rains. At Taft, a few miles north of Corpus Christi, gusty winds blew several cars off highway during heavy shower in which 3.50 inches of rain fell in 2 hours. This storm eroded 95,000 acres of land in Texas that had not blown before this year, according to State Soil Conservationist office. Storm moved southeastward.
ALASKA Cordova	8-11						3	1	Snow and wind	Combination of wind and wet snow of unusually late occurrence for this area. Damage chiefly to utilities lines and collapsed buildings. Some damage and traffic tie-ups resulted from road slides; old trestle collapsed. Wind gusts at Cordova WBAS reached 37 m.p.h., on 9th. Snow accumulation continued through this period of rain and snow mixed. Snow depth reported at Cordova WBAS, on 8th, 42 inches; by 13th depth had

See footnotes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ALASKA (Cont'd)										increased to 57 inches. At cooperative station in Cordova snow depth increased from 55 inches on 7th to 95 inches on 13th. This snow accumulation contained very high water content, causing considerable weight accumulation on structures of all kinds. Storm moved east-northeastward.
OKLAHOMA Barnsdall, Osage County	9	After midnight			0	0	1	1	Tornado	Highway Patrol reported tornado on ground near Barnsdall, but evidently dissipated without damage.
OKLAHOMA Logan County	9	1 a.m.						1	Wind, rain, and hail	Area from Seward to Guthrie received considerable wind damage to roofs, outbuildings, trees, etc. Storm moved southeastward.
OKLAHOMA Sapulpa, Creek County	9	2:57 a.m.						1	Electrical and rain	Lightning struck 2 homes causing fires which did $300 damage to one and total loss of other.
ALASKA Seward	9	6 a.m.-noon					5	1	Wind and rain	Damage not directly chargeable to wind action, but wind indirectly cause of the damage. Airway observer at Seward stated damage resulted from swell. Swell appears to have been built up, or at least reinforced, by strong winds over open sea. Liberty ship broke loose from moorings and swung into cement company dock in Seward. Little wind recorded locally in Seward, but quite strong over open sea short distance southeast. Gusts at Homer reached 40 m.p.h. Storm center near King Salmon moved east-northeastward.
OKLAHOMA Bartlesville, Washington County	9	Night				3	1	1	Rain	Auto crash on wet pavement during rainstorm injured 3 members of a family.
	9									Minor storms also reported at Wichita, Kans.; and at Henryetta, Okla.
LOUISIANA Port Sulphur, Plaquemines Parish	10	7:30 a.m.	5	*1			3	1	Wind, rain, hail, and electrical	Winds reached 80 m.p.h., when wind instruments "broken" during squalls; some roofs and windows damaged. Storm moved eastward.
FLORIDA Princeton and northeastward Dade County	10	6:35-6:45 p.m.	10	*2					Wind and rain	Destructive winds occurred in several localities. 70-ton capacity traveling crane blown 75 feet along its track to tumble off end of track in wreckage representing property damage of $65,000. 2 small buildings unroofed, several dozen billboards wrecked, and hundreds of TV antennas bent or broken. Many avocado and mango trees in several groves broken or uprooted. Observers commented upon roaring sound, but all trees blown down fell towards some easterly direction. Concurrent rainfall would have made observation of funnel cloud impossible. Several observers who have been through hurricanes estimated winds as being in excess of 100 m.p.h. Storm moved east-northeastward or northeastward.
FLORIDA Dania and West Hollywood areas, Broward County	10	6:45-7 p.m.	8	200	0	20		1	Tornado (suspected), wind, and rain	Shop building damaged and glider overturned at Perry Airport. Housetrailer almost demolished and several others blown from their foundations in West Hollywood. Major damage in Dania where school auditorium, motel, 2 country club buildings, jai alai building, and drive-in theater suffered major damage. Debris at jai alai building offered considerable evidence of tornadic action. Witnesses reported loud, roaring noise and heavy rain before maximum winds. Engineers estimated wind speed must have been 150 to 200 m.p.h. Early estimates of property damage amounted to $1,000,000 but later surveys indicate that this figure appears too high. Storm moved east-northeastward.
GEORGIA St. Simons Island, Glynn County	10	8:45 p.m.	Short	Narrow	0	0	2	1	Tornado (suspected), wind, and rain	Damage mainly to roofs, uprooted trees, TV antennas, and other minor structural damage. Some water damage in beach areas, due to high seas, and some miscellaneous minor damage in city of Brunswick.
GEORGIA North-central portion	10	Evening							Wind, rain, electrical, and dust	Winds with gusts to 50 m.p.h., and higher caused widespread minor damage in several north-central counties. Greater Atlanta area hardest hit. Damage confined mostly to uprooted trees, downed utility lines, and shattered windows. Some homes and automobiles damaged by falling trees. In addition to Atlanta, damage also occurred in Polk, Bartow, Pickens, Cobb, and Dekalb Counties. Damage to young crops suffered in some central and southern counties as result of blowing dust and sand. Storm moved eastward.
	10									Minor storms also reported at Mobile, Daphne, Russellville, Lockhart, and Opp, Ala.
OREGON Central portion	10-11	P.m. 10th- a.m. 11th	75	*40-50			2	2	Rain	Occurrence of "brown rain" was preceded by fairly heavy duststorms in southeastern Washington and

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OREGON (Cont'd)										the Boardman to Pendleton area in Oregon. Dust carried southward aloft and then mixed with rain which fell in varying amounts over much of area from Sisters east at least as far as Prineville and from Madras to south of Bend. Greatest recorded fall was at Bend where about 2/3 inch fell on evening of 10th and morning of 11th. This muddy mixture coated cars, sidewalks, and buildings, and in several cases made driving practically impossible as it covered windshields with a layer of mud faster than windshield wipers could remove it.
	10-11									Minor storms also reported in Kershaw and Sumter Counties, S. C.
WASHINGTON Yakima, Franklin, Benton, and Adams Counties	11	12:30-6 a.m.					5	5	Wind	Severe wind- and duststorm occurred in southern section of Columbia Basin and Yakima Valley. Greatest property damage reported in Sunnyside and Grandview areas of Yakima Valley where several buildings damaged and power and communication services disrupted. Newly seeded-beet and spring-wheat fields damaged by soil erosion to extent that it was necessary to reseed in som localities of southern Columbia Basin and Yakima Valley.
SOUTH CAROLINA Lexington and Richland Counties	11	Morning					4	1	Rain	Heavy rains caused considerable damage to county roads and bridges.
FLORIDA Daytona Beach	11	Noon						1	Wind	Wind blew down large tree that fell on home causing major roof damage.
VIRGINIA Tidewater areas	11	Afternoon-evening							Wind and rain	Severe coastal "Northeaster" gave gale winds and unusually high tides to Tidewater Virginia. At Norfolk, strongest gust 70 m.p.h., and tide in Hampton Roads crested at 7.9 feet above mean low water mark, or 4.6 feet above normal for that time. Total wind damages considerable, but individual cases mostly minor. Damages by high water large, with thousands of homes flooded. 2 large ships grounded and waterfront fires, fanned by high winds and with flooding making access by firefighters difficult, caused additional damages. Storm moved northeastward.
NORTH CAROLINA Kitty Hawk-Nags Head area, Dare County	11	Evening					4		Wind and high tides	Very high, wind-blown tides caused minor damage to highway and cottages, and extensive beach erosion.
IDAHO Sandpoint, Bonner County	11								Wind	Gusts estimated at 50 to 55 m.p.h. Boats and docks on Lake Pend Oreille severely damaged; many trees blown down; power outage kept local radio station off air for 3 hours.
	11									Minor storms also reported in Richmond, Lee, Montgomery, and Bladen Counties, N.C.
INDIANA Brazil, Clay County	13	1 p.m.	**8	2	0	0			Dust devil	Day cloudless and wind nearly calm when dust devil moved eastward through several yards making sound like bad windstorm.
WYOMING Laramie, Albany County	13	1 p.m.	1/8	10	0	0	2	1	Dust devil	Apparently small dust devil traveling northeastward. Large plate-glass window burst outward, floorlamp carried out of building, and swinging door torn off hinges, splintering glass and breaking aluminum frame.
CALIFORNIA Chula Vista, San Diego County	13	2:55 p.m.	1/4-1/2	Narrow	0	1	4	1	Tornado or waterspout, wind, rain, and hail	Low, moving south-southeastward just off southern California coast on 12th and 13th, caused heavy shower and thunderstorm activity in southern coastal valleys. Strong thunderstorm moved northeastward from offshore to Chula Vista on 13th with several reports of small tornado occurring about 2:55 p.m., on 13th. Considerable wind damage to 9-block area. Newspapers quoted 2 individuals, who claimed it was a "regular" tornado. One person described storm as follows: "The wind was in the shape of a big whirlwind or funnel shaped." The roofing and tree limbs that were being carried inside the funnel were rotating counterclockwise. From where the wind hit the last house on Otis Street to where it took the roof off the Vista Square School it raised off the ground, lowered, and then raised up again." San Diego Tribune reported 10 fish deposited on city streets about 1 mile from San Diego Bay, and listed 50 houses damaged, 20 of which lost roofing, 75-foot tree blown down, 300 windows broken, and many TV antennas broken. Although the "decaying waterspout" or "small tornado" was not observed by any weather station, Navy station at Brown Field (Chula Vista) reported wind of 41 m.p.h., at height of storm, and at Lindbergh Field (San Diego) gust of 43 m.p.h., observed.

See footnotes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

APRIL 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Lebo, Coffey County	14	1:30-1:45 a.m.	2	300			4		Hail	Heavy hail 1/2 to 2 inches in diameter fell for 15 minutes over Lincoln Township, covering about 8 square miles. No high winds accompanied storm. Damage principally to roofs. Storm moved northeastward.
TEXAS Tarrant, Ellis, Parker, Montague, and Rockwall Counties	14	3 p.m.	200	*50	1	1	5		Tornadoes (suspected), hail, electrical, wind, and rain	Hail damaged roofs and cars, broke windows, and damaged roofs in Bowie area, Montague County. At Meacham Field, Ft. Worth, hailstones punctured fabric on 17 small planes. Lightning struck TV antennas and set fire to homes. Some streets temporarily blocked by downed trees. Funnels sighted at Keller, Tarrant County County did not touch ground. 2 miles north of Midlothian, Ellis County, suspected tornado struck about 8 p.m., lifting roofs off residences and barns and demolishing some small buildings. Path of suspected tornado 200 yards wide and 1 mile long. Millsap suffered heaviest damage from hail which fell in Parker County. About 100 windows broken in school building and many roofs had 40 to 50 holes from hail. Storm moved northeastward.
OKLAHOMA Carter, Murray, Pontotoc, Seminole, Hughes, Okfuskee, and Okmulgee Counties	14	5-6:30 p.m.	90	*20	0	1	4	3	Tornadoes, wind, rain, and hail	Line of severe thunderstorms from Ardmore to Okmulgee caused spotted heavy damage from hail and wind. Marble-sized hail covered ground at Ardmore. Hail size of golf balls fell just south of Davis and Sulphur. 3/4-inch hail fell at Ada, with reports of funnels being sighted southwest of Ada. Funnels also reported near Calvin; evidently these funnels remained aloft as no damage reported. Hail size of hens' eggs did considerable damage to roofs (50 to 100 percent loss) and automobiles in Sasakwa, Seminole County. Holdenville received hail from 1-1/2 to 2 inches in diameter. Over 600 square miles of Hughes County buffeted by severe hailstorm. Fortunately it lasted for just a few minutes. No visible damage apparent. 1 person injured near Holdenville when her car was picked up by wind, turned around, and dashed against guard rail. Driver knocked unconscious and received slight bruises. Light hail also reported from Wetumka and heavy hail fell at Weleetka. Also received was unconfirmed report of funnel aloft near Okmulgee. Storm moved northeastward.
MICHIGAN Morenci area, Lenawee County	14	7 p.m.	Short	Narrow	0	0	3		Tornado	Tornado funnel aloft, showing little movement, dipped to surface briefly a short distance northwest of Morenci, moved barn a foot off its foundation, then lifted again. According to newspaper clipping, about a dozen persons reported seeing funnel, which was visible for about 1/2 hour.
KANSAS South-central portion	14	7-10:30 p.m.	200		0	0	5		Tornado, wind, rain, and electrical	Thunderstorm condition built up about 7 p.m., west of Clark County. Tornado struck briefly at farm home in northwestern Clark County, 10 miles south of Bloom. Barn and cattle shed destroyed and floor of house vibrated. Next notice of damage came from Harper County, where apparently vicious straight winds demolished outbuildings and damaged some houses, blew trees over, and broke transmission lines about 9 p.m. Much the same conditions prevailed eastward across Sumner County from 9:30 to 10 p.m., and near Arkansas City by 10:30 p.m. In some areas winds almost reached tornadic speed. Storm moved eastward.
OKLAHOMA Lincoln and Payne Counties	14	7:50-9:50 p.m.			0	0	1	1	Tornadoes	Ground Observer Corps at Glencoe reported to have spotted funnel aloft at 7:51 p.m., and again at 8:22 p.m., also reported funnel aloft southwest of Cushing at 9:46 p.m. Highway Patrol also reported to have spotted funnel near Cushing. Further information could not be obtained.
OKLAHOMA Capron, Woods County	14	8:35 p.m.						1	Wind	Barn destroyed and 21 of 55 sheep in barn killed when strong windstorm struck farm near Capron. Storm moved southeastward.
MISSOURI Crane, Stone County	14	10:15 p.m.	1-1/2	*1			4		Hail, rain, and electrical	Hail, size of eggs, destroyed broiler-house roof drowning 280 broilers. Some young pigs killed. Storm moved northeastward. Several home roofs destroyed.
KANSAS Parsons (10 miles northeast of), Labette County	14	Late night							Electrical	Lightning hit farm home, setting fire in 5 places and ruining all electrical appliances. Latch on woven-wire fence gate welded shut by lightning. 11 windows shattered by shock.
	14									Minor storms also reported in Muhlenberg County, Ky.; near Granby, Mo.; and in Pickens, Greenville, and Spartanburg Counties, S.C.
OKLAHOMA Rogers, Craig, and Ottawa Counties	15	12:10 a.m.			0	0	1	1	Tornado, rain, and hail	Funnel aloft sighted moving over Vinita. Thunderstorms with heavy rain and some hail up to size of golf balls fell over wide area including northeastern Rogers County, south-central Craig County,

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA (Cont'd)										and most of Ottawa County. Storm moved eastward.
ARKANSAS Central portion	15	9:30 a.m.					5	4	Hail, wind, rain, and electrical	Damage amounting to $200,000 reported in Lonoke County, $86,000 in Saline County, $25,000 in Arkansas County, and $1,000 in Prairie County. Most damage to roofs and other property, but crop damage amounting to $10,000 and livestock damage to $1,000 reported in Saline County.
ALABAMA Most of State	15	All day					5	1	Wind, rain, hail, and electrical	Such minor damage as fallen trees occurred in most sections of State. Powerlines broken by falling trees in Colbert and Lauderdale Counties at 7:30 a.m., while at Haleyville, Winston County, radio station antenna blown down at about same time. At from 11 a.m., to 1 p.m., building damage of about $15,000 done in Huntsville, Madison County. Spotted minor building damage in Cleburne County. In Calhoun County, building damage at Estaboga, Sulphur Springs, Eulaton, Anniston, Weaver, Jacksonville, Bonny Brook, White's Gap, and Rabbittown amounted to about $30,000 in late afternoon. Squall at Centreville, Bibb County, did $25,000 of building damage. At Bucksnort, Hale County, in mid-afternoon, damage to houses $7,000. Some windowpanes and powerpoles blown down in Mobile. Tree fell on house at Fort Deposit, Lowndes County, with damage $800. Hail reported at Huntsville at 11:30 p.m., at Dadeville during evening, and Birmingham at 3 different times.
MISSISSIPPI Hancock to Jackson Counties	15	All day					4	1	Wind	High winds all day from Gulf sent 6 barges aground, damaging buoys and piers from Waveland to Pascagoula. Winds blew beach sand onto highway.
VIRGINIA Southwestern highlands	15	All day					4	1	Rain	Steady heavy rains left streams and rivers swollen in area west of Roanoke. In Damascus area, damage estimated near $10,000 to streets, gardens, and Norfolk and Western ballast which washed out. Basements flooded. 5 families had to move from homes. Some landslides occurred on Route 58 east of Damascus. In Bristol area considerable minor damage. Roads generally suffered minor damage. Storm moved northeastward.
ALABAMA Birmingham area, Jefferson County	15	3 p.m.	20	150-300	25	200	6	1	Tornado, wind, and rain	Tornado northeastward through outskirts of Birmingham, first hitting between Pleasant Grove and McDonald's Chapel, and lifting in Trussville-Chalkville area. Most deaths occurred in McDonald's Chapel area. Tornado developed along instability line. Little rainfall occurred with tornado, but it was accompanied by thunderstorm to left of its path, and rain set in quickly after its passage. Light hail reported in several sections of Birmingham. Thunderstorms and hail also accompanied instability lines passing station at 5:50 to 6:53 a.m., and in early evening. According to Red Cross, 166 buildings demolished, 162 damaged heavily, 57 damaged slightly, and 1,113 persons made homeless. Path skipping, with 7 localities hit.
GEORGIA Entire State	15	Afternoon-evening			0	0			Tornado, wind, rain, hail, and electrical	Instability line moving across State caused widespread and extensive wind and rain damage in practically all sections. Winds most severe and damage greatest across north-central in east-northeastward direction from Haralson and Carroll Counties. Within this area, definite tornado characteristics evident from 6:30 to 7:15 p.m., along line running northeastward from Paulding County to Forsyth County, distance of approximately 50 miles. Places hardest hit were near Dallas, Paulding County; Acworth, Cobb County; Woodstock, Cherokee County; and near Cumming, Forsyth County. Damage in these 4 counties estimated at about $150,000, with 25 homes destroyed or badly damaged, 20 broiler houses destroyed, thousands of chickens killed, and many smaller structures demolished. Other sections receiving extensive damage were: In Atlanta area where wind gusts measured to 89 m.p.h., many trees, power and telephone lines downed; a number of homes, other buildings, and automobiles damaged by falling trees; hail up to 1/2 inch in diameter fell in some sections; in Athens where homes and automobiles damaged by falling trees, drive-in theater screen demolished, utility lines blown down; in Columbus where gusts to 55 m.p.h., trees uprooted, plate-glass windows shattered, and utility lines downed; in Madison County 2 homes destroyed, several others damaged, and cotton gin blown down; in Barrow County dairy barn destroyed, 4 cows killed and 5 injured, 3 chickenhouses destroyed or damaged, and 2,000 chickens killed. Lesser damage reported from following counties: Whitfield, White, Habersham, Hall, Dawson, Bartow, Haralson, Carroll, DeKalb, Walton, Hart, Elbert, McDuffie, Baldwin, Spalding, Troup, Schley,

See footnotes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
GEORGIA (Cont'd)										Sumpter, Pulaski, Wilkinson, Johnson, Wheeler, Toombs, Evans, Coffee, Ben Hill, Tift, Irwin, Turner, Dougherty, Colquitt, Lauier, and Lowndes. Damage in these areas confined primarily to trees, utility lines, and in southern counties sand, wind, and rain severely damaged young crops requiring thousands of acres to be replanted.
NORTH CAROLINA Stanly and Union Counties	15	9-10 p.m.				1	3		Wind	Roofs and automobiles damaged. Woman blown off her feet and hurt slightly.
	15									Minor storms also reported in Carteret, New Hanover, and Burke Counties, N.C.; and in Charleston area, S.C.
	15-16									Minor storm reported in Greenville, Charleston, Anderson, Greenwood, and Pickens Counties, S.C.
PENNSYLVANIA Horsham, Montgomery County	16	1:30 p.m.	4/10		1	11	5	1	Wind and rain	Thunderstorm in connection with a cold frontal passage. 86 m.p.h., wind at Willowgrove Naval Air Station damaged roof of hanger and whistled through nearby area causing damage to buildings and utilities. Naval Air Station reported no funnel cloud observed. Partially completed cement-block wall, 160 feet long and 20 feet high, collapsed crushing 1 man to death and injuring 11 others. Barn about 500 feet away collapsed downward. Several homes in area suffered minor damage, mostly to roofs and TV antennas. Strong winds uprooted trees, felled wires, and leveled several small buildings in immediate area. Storm moved eastward.
NORTH CAROLINA Macon County	16	3 p.m.					5		Landslide	Slide at Cowee Gap near Macon-Jackson County line did heavy damage to Highway 441; attributed to seepage from heavy and prolonged precipitation.
MASSACHUSETTS Western portion	16	Evening			1		6		Rain and electrical	Heavy rains combined with rain-melted snow flooded lowlands of central and southern Berkshire County and caused landslides. Main highways closed when Highway 20 was flooded with 3 feet of water at Becket and when landslides blocked Mohawk Trail at Florida and Charlemont. Bridge washed away at East Lee. Rains and melting loosened rocks in West Becket area, which slid next morning upon highway construction worker, fatally injuring him.
	16									Minor storms also reported at Macon, Miss.; and near Springfield, Vt.
IOWA Central portion	17	All day				1	2	1	Wind	Caused auto accident, also removed large amounts of topsoil from fields. Some oat seedings damaged, but early enough for replanting.
MINNESOTA Minneapolis-St. Paul area, Hennepin and Ramsey Counties	17						3	1	Wind and dust	Winds of 50 m.p.h., toppled scaffolding in Minneapolis; automobiles underneath damaged. Some office windows blown out. Numerous grass fires aggravated by wind. Considerable dust in air. storm moved eastward.
RHODE ISLAND and MASSACHUSETTS	20	11 a.m.	6	3-4	0	0			Dust devils	Very small dust devil moved northeastward. 2 garbage cans lifted 25 feet in air and hurled 75 feet in Warwick, R.I. Dust devil spotted 40 minutes later in Seekonk, Mass., moving east-northeastward.
	20									Minor storm also reported in Bertie and Hertford Counties, N.C.
IDAHO Caldwell, Canyon County	21						4		Wind	Wall of gymnasium under construction blown down, loosing some 50 tons of concrete and masonry, much of which fell onto adjoining high school, badly damaging roof and ceilings.
TEXAS San Patricio and Nueces Counties	23	6 a.m.-5 p.m.	12	*10	1	1	4	3	Rain	Heaviest rainfall amounts estimated at 14 inches at Sodville; 8.75 inches at Taft; 10.50 inches in Corpus Christi area; 4.14 inches at Cliff Maus Field in 2 hours. Storm moved northeastward.
OKLAHOMA Kiowa and Greer Counties	23	11:30 p.m.	15	*1			2		Hail, wind, and rain	Extensive damage to crops ranging from 50 to 100 percent in area from Babbs to Gotebo in Kiowa County. Other areas of eastern Greer and western and southern Kiowa County received heavy hail damage. Scattered reports indicated hail on ground 4 to 12 inches deep. Hail fell for period of 30 minutes, but stones small to marble sized. Storm moved southeastward.
MONTANA Missoula Valley Missoula County	24	Early a.m.							Snow and rain	Undetermined amount of damage done to shrubs and trees. Several power and telegraph poles and lines pulled down by heavy snow.
	24									Minor storm also reported in Pauls Valley, Okla.
	25									Minor storm reported in Zephyrhills, Fla.

See footnotes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MISSOURI Faucett (4 miles southeast of), Buchanan County	26	12:30 a.m.	2				4	1	Thunderstorm with wind	Storm moved northeastward; 3 barns destroyed, auto service garage demolished, 2 other barns damaged.
ILLINOIS Henry and Bureau Counties	26	9:15 p.m.	35		0	0	5	1	Tornado, wind, rain, and hail	Storm followed 35-mile intermittent path from Colona eastward to just north of Geneseo across Henry County and into Bureau County. More than 20 farms affected. Evidence indicates tornado, with other damage by severe thunderstorm gusts.
IOWA Tama and Benton Counties	26	10:30 p.m.	3	440	0	0	4	3	Tornado (suspected), wind, hail, and electrical	Probable tornado in Vinton area destroyed farm buildings. Lightning killed livestock. Storm moved eastward.
IDAHO Fairfield area, Camas County	27	1:05 p.m.							Hail and electrical	Hail to depth of 4 inches (all small pellets) damaged roofs of several buildings in town. Lightning damaged at least 6 powerpoles east of town and knocked out several electrical appliances at farm home 1 mile east.
ILLINOIS Chicago area, Cook County	27	Late afternoon					4		Wind and electrical	Severe thunderstorm moved eastward.
IOWA East-central portion	27	6-10 p.m.				1	5	3	Hail, electrical, and wind	Hail and electrical storm damaged buildings and cars and killed livestock.
ILLINOIS Bureau and La Salle Counties	27	7:20 p.m.	12	500	0	0	5	1	Tornadoes, rain, and hail	Tornado struck 2 miles west of Arlington at 7:20 p.m., 30 minutes later second tornado moved eastward less than 1 mile south of first. One or both tornadoes caused damage along discontinuous 12-mile path eastward into La Salle County. Witnesses 8 miles south reported funnel clouds visible.
Kansas Eskridge area, Waubaunsee County	27	9-9:30 p.m.							Hail and rain	Hail caused damage in 2 areas, southwest of Eskridge, and 6 miles east of town. Storm was followed by more damaging one about 1 a.m., of 28th. The heavy rain and stormy conditions together with the lack of electricity caused a great deal of anxiety and trouble at high school function. Fields badly washed. Storm moved eastward.
KANSAS Lindsborg, McPherson County	27	9:15 p.m.			0	0		1	Tornado, wind, and electrical	Distinct roar of tornado aloft heard. Wind-driven portion of roof of wing of high school building chipped and broke about 115 panes of glass on north wing of building. Across street east from high school, 15 cars parked facing southeast had their rear windows driven out, no shattered glass found in cars. Calm ensued immediately after gust of wind and school corridor was filled with dust. Junior-senior banquet and program was in progress at school. Large door from commercial garage torn off its hanger and hurled across highway. Trees blown over and broken over short narrow path. Empty 500-gallon oil tank south of Lindsborg struck by lightning and burned. Storm moved eastward.
ILLINOIS Mt. Sterling (5 miles west of), Brown County	27	10:10 p.m.	4	900	0	0			Tornado, rain, and hail	Damage occurred on 9 farms including 2 barns wrecked. Considerable skipping so that path width difficult to determine. Typical roaring sound reported by witnesses. Storm moved eastward.
INDIANA South Bend, St. Joseph County	27	Evening				1	3	1	Electrical, wind, and rain	Lightning damaged house and injured 1 person.
	27									Minor storm also reported in Shelby, Guthrie, and Polk Counties, Iowa.
MICHIGAN (Lower) Southern half	27-28					2	5		Rain, wind, electrical, and hail	Several periods of heavy rain resulted in precipitation totals of over 3 inches in 3-day period and some localities registered 4 to 5 inches. Flooding reported in Lenawee, Kalamazoo, Calhoun, Livingston, Wayne, Washtenaw, Oakland, Macomb, Monroe, Saginaw, St. Clair, and Ingham Counties. Some wind damage occurred in Berrien, Van Buren, Cass, and Calhoun Counties. Also several reports of damage from lightning around southern Michigan.
KANSAS Eskridge area, Waubaunsee County	28	1-2 a.m.					4		Hail	Hail larger than golf balls fell at and near Lake Wabaunsee, 4 miles northwest of Eskridge. Roofs badly damaged and a large number of aquatic birds killed and injured. 60 hours later hailstones a foot deep and some more than 1 inch in diameter found in draw near lake. Storm moved eastward.
NEBRASKA Jefferson, Saline, and Gage Counties	28	1:15-2 a.m.	50	Narrow	0	0	5	1	Tornado, rain, and hail	Tornado moved southeastward, then eastward, then northeastward. Many farm buildings destroyed or damaged. Straws driven through house siding. Portions of large barn scattered 500 feet in all directions. Funnel observed. Occurred in Daykin, Plymouth, and Cortland areas.

See footnotes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Shawnee and Douglas Counties	28	2:30-3:10 a.m.		50					Wind	Severe winds in connection with thunderstorm caused occasional damage over eastern Shawnee and western Douglas Counties. Farm buildings damaged 1-1/2 miles east of Lake Shawnee about 6 miles southeast of Topeka, and another barn and outbuildings demolished 10 miles further east-northeastward about 1/2 mile south of Lecompton. Storm moved east-northeastward.
MISSOURI Macon (south-southeast of), Macon County	28	5 a.m.							Hail	Damage reported as severe; no details received.
OKLAHOMA Grady, McClain, and Cleveland Counties	28	2:20 p.m.	25	*1/2-3	0	0	5	5	Tornado, hail, wind, rain, and electrical	Tornado first sighted on ground 5 miles south of Chickasha, Grady County, but evidently went aloft or dissipated. Funnel sighted again southwest of Norman across Canadian River in McClain County. Funnel forced aloft at river, continued aloft over Norman, and dipped to ground again momentarily 3 miles east of Norman where barn and outbuildings destroyed. Other tornado damage to garage, auto, and henhouse southwest of Norman. Greatest damage was from accompanying hailstorm. Hailstones up to 3 inches in diameter reported. Most extensive damage in vicinity of Newcastle, McClain County, where 6-square-mile area received damage estimated at $100,000 to crops and property. Same storm cut 3-mile-wide path across north-central Cleveland County, causing $120,000 damage to crops and property. Parts of 45-square-mile area in Cleveland County reported up to 7 inches of hail on ground. Storm moved northeastward.
TEXAS Wichita Falls, Wichita County	28	2:30 p.m.	15	*1-5			4	1	Hail	Hail, marble to tennis-ball size, damaged automobiles, neon signs, and roofs. Storm moved northeastward.
OKLAHOMA Pottowatomie, Seminole, and Okfuskee Counties	28	3:15 p.m.	12	880			5	4	Wind, hail, and rain	Severe thunderstorm with winds to 80 m.p.h., and golf-ball size hail did severe damage in Shawnee. Severe winds caved in walls, ripped off roofs, smashed windows, collapsed numerous barns and outbuildings, uprooted scores of trees, and knocked out power- and telephone lines. Insurance adjusters estimated 2,000 claims would be filed. Although Shawnee hardest hit, damage noted from wind and hail as far east as Okemah, Okfuskee County. Storm moved northeastward.
OKLAHOMA Lincoln County	28	3:30 p.m.	4	*1	0	0		1	Tornado (suspected), wind, rain, and electrical	2 barns, numerous outbuildings, and several utility poles destroyed or blown down in vicinity of Willzetta. Unconfirmed tornado reported 3 miles northwest of Chandler, but no details obtainable. Hail fell generally over County, but no damage reported. Storm moved northeastward.
OKLAHOMA Comanche, Stephens, and Jefferson Counties	28	4-4:30 p.m.			0	0			Tornado (suspected), hail, wind, and rain	Heavy hail up to 3-3/4 inches in diameter caused widespread heavy damage in Stephens and Jefferson Counties. Hardest hit was area at Marlow where an undamaged place was the exception. Area 4 miles wide and about 12 miles long from Red River northeastward through Waurika to point several miles northeast of Waurika received extensive damage from egg-sized hail. Crop damage to headed grain estimated up to 30 percent. Hail damaged another strip similar to the one at Waurika in vicinity of Ryan, Jefferson County. Suspected tornado struck farm 8-1/2 miles east of Waurika. Roof lifted from house and corner of house partially torn away. Trees, fence posts, and outbuildings scattered over wide area.
Oklahoma Garvin, McClain, Pontotoc, Pottawatomie, Seminole, and Hughes Counties	28	4:15-6:12 p.m.	1	50	0	0	3	1	Tornadoes, electrical, wind, and rain	Several funnels aloft sighted in north-central Garvin and southern McClain Counties, but evidently did not reach ground as no damage reported. Funnel next sighted just south of Konawa at 5:10 p.m., where it was observed at tree-top level. Damage resulted at 2 farms where roofs damaged and barns and outbuildings destroyed. At 6:05 p.m., and 6:12 p.m., 2 funnels aloft sighted between Holdenville and Wewoka. Funnels evidently remained aloft as no damage reported, however, lightning struck 2 homes in Wewoka, Seminole County. Storm moved northeastward.
OKLAHOMA Kay, Noble, Osage, and Pawnee Counties	28	4:30-5:30 p.m.							Hail and rain	Hail up to size of baseballs did extensive damage to roofs, windows, and crops over central portions of 4-county area. Area 5 miles by 6 miles in Bressie community, Noble County, apparently hardest hit.
KANSAS Fort Scott (north of), Bourbon County	28	5 p.m.	3		0	0			Tornado, rain, and electrical	Tornado moving northeastward damaged barns, outbuildings, and a house or two. Trees broken and power- and telephone lines blown down.

See footnotes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA Lincoln and Oklahoma Counties	28	5-5:30 p.m.	15	*1/2-1			4	4	Hail, wind, and rain	Hailstones up to 2 inches in diameter caused widespread damage to crops and property. Strong winds accompanied storm which moved northeastward from Luther to 4 miles south of Chandler.
OKLAHOMA Muskogee, Muskogee County	28	Late afternoon				1	2	1	Electrical	Lightning struck home, injuring occupant and tearing hole in side of house.
OKLAHOMA Carter, Johnston, Marshall, and Murray Counties	28	8-10 p.m.						1	Wind, hail, rain, and electrical	Wind and hail caused widespread minor damage across 4-county area. Lightning struck motel in Ardmore, causing small fire.
MASSACHUSETTS Middlesex and Essex Counties	28	10 p.m.					4		Electrical	Lightning damaged power facilities in Wakefield, causing outages lasting up to 4 hours and struck home in Lynnfield, causing serious fire.
OKLAHOMA Bryan and Pushmataha Counties	28	10 p.m.	30	300	0	1	4	1	Tornadoes, wind, rain, and electrical	Funnel first sighted northeast of Durant, Bryan County. First damage noted at Matoy where numerous trees blown down. Funnel moved northeastward and crossed over Antlers where widespread damage noted to buildings, trees, TV antennas, utilities, etc. 1 person reported seeing 2 funnels moving in from west and southwest. Fortunately both funnels remained at tree-top level or higher. Strong wind blew auto off highway, injuring driver.
ILLINOIS Litchfield area, Montgomery County	28	11 p.m.	5		2	0	4	1	Tornado (suspected), wind, and rain	2 men drowned on small lake when storm overturned boat. 2 farm houses northwest of Litchfield damaged. Steel grain bin weighing several tons carried 100 yards and dumped into pond. Powerlines downed and tree branches felled. Storm moved northwestward.
NEW YORK Cahoonzie, Orange County	28	Evening					4	1	Electrical	Resort hotel completely burned by lightning strike.
OKLAHOMA Sallisaw, Sequoyah County	28	Night						1	Wind	Numerous barns and outbuildings destroyed or damaged by strong winds.
INDIANA Newton, Jasper, Lagrange, Steuben, De Kalb, Madison, and Noble Counties	28						4	1	Rain, wind, and electrical	3 to 5 inches of rain inundated low farmlands and flooded basements as small streams left their banks.
PENNSYLVANIA Luzerne and Lackawanna Counties	28						5	1	Wind, electrical, rain, and hail	Near Wilkes Barre high winds from thunderstorm felled many trees and ripped off several house roofs. In same general area outdoor movie screen blown down and totally destroyed; loss estimated by owner at $75,000. At a nearby farm, 9 guernsey cows electrocuted by bolt of lightning, causing estimated $3,000 loss.
	28									Minor storms also reported in Woolsey Community, Ark.; in northeastern Iowa; in Bonne Terre area, Mo.; and in Okmulgee, Okla.
ILLINOIS Blue Mound area, Macon County	29	12:05 a.m.	3		0	0	4	1	Tornado (suspected)	Storm moving northwestward ripped up corn crib 2 miles northwest of Blue Mound and scattered debris 3/4 mile. Minor damage on several nearby farms. Tree limbs blown down and slight damage done to trees and buildings in town.
ILLINOIS Champaign County	29	12:45 a.m.	20				4	1	Wind and rain	Moved from Seymour northeastward, with damage to 8 or more farms.
ILLINOIS Washington and Marion Counties	29	1 a.m.	25		0	0	4	1	Tornado (suspected) and electrical	From Ashley, Washington County in discontinous 25-mile path northeastward to Cartter, Marion County. House moved on foundation and chickenhouse moved several inches off foundation in in Ashley vicinity. Barn damaged near Cartter.
KENTUCKY Hopkins County	29	5-5:30 a.m.	15	100	0	1	3		Tornado	Tornado of bounding type first struck at Dawson Springs and then moved eastward to New Salem where greatest damage occurred. 8 buildings damaged and public utility lines downed.
MINNESOTA Southern tier of Counties	29	a. m.				1	3	1	Snow and wind	New snowfall average 6 to 8 inches, with heaviest reported 15 inches Windom. Other than traffic accidents, no damage. Water equivalent of snow welcomed. Storm moved eastward.
MARYLAND Emmitsburg, Frederick County	29	4 p.m.							Wind	Very local windstorm moving in northeasterly direction demolished wagon shed, upended chickenhouse, and blew tin off roof of barn. Damage occurred on 3 different farms in 1/4-mile area. Ceiling of wagon shed carried about 200 feet. Sections of tin roof found about 2,000 feet away.

See footnotes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by catagories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ARKANSAS Barton Community, Phillips County	29	4:10 p.m.	3	50	0	0	5	2	Tornado and wind	Tornado moving northeastward destroyed cotton gin and 3 houses, damaged several houses, high school gymnasium, and main building of school.
NEW YORK Copenhagen, Lewis County	29	5:30-6 p.m.					4		Wind	36 x 90-foot barn demolished, 5 cows killed, and 5 more injured so they had to be destroyed.
PENNSYLVANIA Luzerne and Lackawanna Counties	29	6:35 p.m.					4	1	Wind, electrical, and rain	Wilkes Barre area received brunt of storm. Nearby drive-in movie refreshment stand destroyed by high winds as well as equipment inside building; estimated damage $10,000. At nearby Duryea, bolt of lightning struck church steeple, causing it to topple, and knocked out electrical system of organ in same church. Barn and several homes destroyed by fire caused by lightning. Highway washouts caused by heavy rains coupled with felled trees and powerlines restricted transportation for several days after storm. Lightning struck power stations and transformers blacking out both Scranton and Wilkes Barre for about 1 hour during height of storm.
CONNECTICUT Litchfield, Litchfield County	29	Evening					4		Electrical	Bolt killed horse in barn, then traveled across street setting afire small machine shop.
INDIANA Gary, Lake County	29						3	1	Rain, wind, and electrical	Rain of about 2 inches caused evacuation of 15 families from homes because of flash flood and low capacity of storm sewers.
SOUTH DAKOTA Western and southern portions	29								Freezing rain and snow	2 to 6 inches of snow over ice caused highway traffic problems. Storm moved southeastward.
	29									Minor storms also reported in Howard County, Ark.; and at Octavia, Okla.
SOUTH CAROLINA Columbia area, Richland and Lexington Counties	30	1-3 p.m.	3	*3			4	1	Rain, wind, hail, and electrical	Thunderstorm with excessive rain of 2 to 3 inches fell in West Columbia and portions of Columbia, causing considerable water damage from heavy runoff which included $10,000 damage to private property, $5,000 to public property. Storm moved northeastward.
NEW MEXICO Union County	30	6:30 p.m.					1		Hail	Considerable hail caused damage to fruit and range forage.
	30									Minor storms also reported in Hertford County and in Abbotts Creek Township, N. C.

* Miles instead of yards.
** Yards instead of miles.

† This is a new form of presentation of storm damage estimates. The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total, storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

APRIL 1956

There was considerable flooding during April, but most of the overflows were light except moderate along the upper Susquehanna in New York and in the Tombigbee in Alabama. Damages were heavy along the Susquehanna and Chenango Rivers, but light along the Tombigbee. Flooding in the Red River of the North Basin was light with the flood crests ranging from slightly above flood stage at Moorhead, Minn., to 4 feet above flood stage at Grand Forks, N. Dak.

HUDSON BAY DRAINAGE

Melting of the winter snow accumulation began late in the Red River of the North Basin due to the exceptionally cold spring weather in North Dakota and northern Minnesota. The melting of the snow cover proceeded at a slower rate than in the upper Mississippi Basin. The snowstorms during the first week of April increased the water equivalent of the snow on the ground by 1 to 2 inches, raising the water equivalent in some areas in the north up to 6.5 inches. During the next 3 weeks, intermittent warm and cold weather melted the snow gradually in a downstream direction. The flood crest travelled very slowly, arriving at Moorhead, Minn., on the 16th at a stage of 18.2 feet, 1.2 feet above flood stage. Seven days later (23d), the crest reached Grand Forks, N. Dak., at the height of 32.5 feet, 4.5 feet above flood stage. It arrived at Drayton, N. Dak., on the 27th (3 feet above flood stage) and at Pembina, N. Dak., on the 29th (1 foot above flood stage). The peak flow of the Red River of the North into Canada was about 38,000 cfs. Some of the lower tributaries of the Red suffered more serious rises. The Red Lake River crested 5 feet above flood stage at Crookston, Minn., on the 20th.

ST. LAWRENCE DRAINAGE

Lake Michigan.--The minor floods in the upper Grand Basin during the latter part of April and the beginning of May were due to heavy rains between the 26th and 29th which ranged from 2.5 to 4.0 inches. Only minor damage was reported.

Lake Erie.--Rainfall ranged from 3 to 4 inches throughout the upper St. Joseph Basin during the same period. The crest on the St. Joseph River at Montpelier, Ohio, was 16.2 feet on the 30th, 6.2 feet above flood stage. On the Maumee River at Fort Wayne, Ind., the crest was 17.6 feet on May 2, 2.6 feet above flood stage.

Lake Ontario.--Minor flooding occurred in eastern New York on the Genesee River and Oatka Creek on the 4th. There was another rise with minor flooding on the 30th on the Oatka and Black Creeks. Damage was limited to that associated with lateness in drying of soil for plowing. No other damage was reported.

ATLANTIC SLOPE DRAINAGE

The winter accumulation of snow over the State of Maine was very heavy, especially over the southern half. No flood stages were approached even though the water content of the snow was high due to below normal temperatures and lack of rain during April. The rivers reached their maximum height (about half bankful) on the 18th of the month. At the end of the month, the ground over the entire state was almost saturated, but the large reservoirs were considerably below normal and could easily hold the entire water content of the remaining snow cover.

Due to the late season cold weather, spring runoff in the Merrimack River Basin was about 2 weeks later than usual this year. Snowmelt was gradual and slow most of the month except for two fairly sharp rises, one about the middle of the month and another at the end of the month. In both of these rises, water elevations approached within 1 to 3 feet of flood stage on all streams, except on the Nashua River which exceeded flood stage by 0.7 foot at East Pepperell, Mass. At Lawrence, Mass., peak stages during both rises were just a few inches below the 20-foot flood stage when water begins to enter mill basements. At the beginning of the spring freshet season, potential flood conditions were the worst in several years, with well above normal snow pack in both depth and water equivalent. The fact that a flood of at least minor magnitude did not occur was due to the unusually long periods of none or relatively light rainfall during the snowmelt period.

There were two rises on the Connecticut River during the month. The first rise was due to a combination of snowmelt and rain on the 15th and 16th and the second to snowmelt and rain on the 28th and 29th. The crests during the first rise ranged from 1 to 5 feet above bankful and during the second up to 6 feet above bankfull stage. No permanent damage resulted from the overflows. Pumping was necessary at various sewage disposal plants on the Connecticut, and unloading of barges at Hartford, Conn., was curtailed because of submerged docks.

Streams in the Hudson River Basin remained in a threatening condition throughout most of April and the situation did not materially ease until the last week of April. A combination of an unusually heavy snow cover, several heavy wet snow falls, frequent periods of rain and snow mixed, and several warm periods with temperatures in the 50's and 60's kept the streams at or near bankful stage during the first 21 days. A number of the small streams went out of their banks on the 4th and 5th and at frequent intervals until the 21st. The Schoharie at Middleburg, N. Y., reached 12 feet (flood stage) on the 5th; the Mohawk reached flood stage briefly at 3:00 a.m. on the 6th. No important flooding occurred and damages were confined to lowland flooding.

Damage from the flooding on the Chemung River at Elmira and Chemung, N. Y., was relatively light and confined to the Lowmah - Wellsburg, N. Y., highway. Considerable overflow occurred along the Susquehanna and Chenango Rivers, resulting in heavy damage. Flooding was the direct result of snowmelt from both local and headwater areas. Snow cover was general with the heaviest in the headwater area estimated at over 5 inches, while the average for the basin was a little over 2 inches. Flooding in the reach from Towanda to Wilkes-Barre, Pa., was minor and restricted to low places. Only a slight rise occurred on the West Branch and Juniata Rivers with all crests well below bankful stage. River stages along the upper Susquehanna would have almost equalled the maximum flood of record, had the precipitation on the 8th (0.7 to 0.8 inch) been in the form of rain rather than snow.

Local flooding occurred in the upper Delaware Basin at Hale Eddy, N. Y., on the 5th and 6th and at Fishs Eddy, N. Y., from the 16th to the 18th. There was also some minor flooding on Perkiomen Creek at Graterford, Pa., on the 8th. No damages were reported.

Only one station in the Potomac Basin rose to above flood stage during the month. This was in the lower Potomac at the Leiter gage near Washington, D. C., which reached a stage of 10.5 feet, 0.5 foot above flood stage on the 9th. This overflow was due to heavy rain on the 6th and 7th which averaged 1.3 inches. No damage resulted.

The flooding in the Neuse River in eastern North Carolina between the 13th and 22d was due to rainfall which averaged 2.3 inches on the 11th. Rainfall was heavier in the upper basin with several stations reporting amounts over 3 inches. Since the Neuse was at reasonable low levels before the rain began, no major flooding occurred. The length of time above flood stage varied from less than 1 day at Kinston to 5 days at Goldsboro. No significant damage was reported.

Relatively light damage occurred from the flooding on the Saluda and Broad Rivers in South Carolina on the 11th and 12th and on the 16th through the 19th. The first overflow was mostly in the lower portion and was due to heavy rain during the night of the 10th and during the day on the 11th. Rainfall averaged 1 to 2 inches in the headwaters and 3 to 4 inches in the lower Broad. The second overflow which followed within a few days was due to rainfall averaging 2 to 3 inches in the headwaters. Flooding continued on the Santee River throughout the month. The overflow during the first 5 days was due to backwater.

EAST GULF OF MEXICO DRAINAGE

The Cahaba River at Centreville, Ala., was in flood two times during the month. The first period of flooding on the 6th and 7th was due to heavy rainfall averaging 3.2 inches, during the 24 hour period ending 7 a.m. on the 6th. The second overflow was due to rainfall averaging 2.2 inches during the 24 hour period ending at 7 a.m. on the 16th. The rainfall over the Oostanaula during the same period averaged 2.97 inches and caused minor overflow at Resaca, Ga., on the 18th and 19th.

The moderate flooding on the Warrior and Tombigbee Rivers that began early in April was due to heavy rain (4.75 inches) from the 5th to the 7th. The largest 24-hour amount reported was 4.92 inches at Gainesville, Ala., on the 6th. Rains averaging about 1 inch occurred again over both watersheds on the 11th and 16th and prolonged the flooding on the Tombigbee. No important damage was reported.

Considerable flooding of lowlands occurred along the Pearl River in Scott and Leake Counties in Mississippi and in the headwaters of the Chunky and Chickasawhay Rivers. Overflows were reported along the entire course of the Pearl. In the Chunky and Chickasawhay, the flood crest decreased as it moved downstream. These overflows were due to excessive rain from the 3d to the 6th which exceeded 6 inches in the headwaters. Damages consisted mostly of slowing or cessation of harvesting of forest products and the preparation of bottomlands for planting, together with loss of pasturage and removal of livestock.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--No flood stages were reached in the extreme upper Mississippi Basin (above the mouth of the Chippewa River in Wisconsin) even though the water equivalent of the April snow cover was greater than normal, and exceeded that of 1952, 1954, and 1955. The alternate periods of melting and freezing combined with the lack of frost in the ground and the below normal fall precipitation of 1955 enabled much of the available water content to percolate into the ground. There was no runoff contributing rain during April to complicate the snowmelt. What precipitation did fall was in the form of snow and was released gradually due to below normal temperatures. The slight rise on the Minnesota River that began late in March continued into April cresting at 7.28 feet (flood stage 19 ft.) at Mankato, Minn. A slow recession was observed the remainder of the month. The 1956 navigation season opened on the Mississippi River at Minneapolis - St. Paul on April 9.

Flood stages occurred in the small tributaries in the reach between Dam No. 3 and Dam No. 10 during the first decade of April. These overflows were due to heavy runoff from rain and snow (1.5 inches) which occurred during the last 5 days of March. The warm weather which followed during the first 5 days of April, caused the snow to melt and by the 9th all of it was gone except in the extreme headwaters. Additional heavy rain during the night of April 2 aggravated the flooding on the Trempealeau, causing heavy damage in the towns of Arcadia, Whitehall, and Blair, Wis. The failure of the Independence Dam on Elk Creek caused additional water to descend on the town of Arcadia at the same time. High water was also aggravated by ice effect and backwater from ice jams. The bankful stages occurring simultaneously on the Root, Zumbro, and Upper Iowa caused no material damage, due to the early season when no agricultural losses were at stake.

The main stem of the Mississippi began cresting at Minneapolis and St. Paul, Minn., on April 11, produced slight overbank stages downstream, and peaked at 123,000 cfs at Dam 10 on the 18th. The weather remained dry during the passage of the rise below Dam 10, and the lower river crested below flood stage at all points.

Ohio Basin.--The light flooding in the Alleghany River Basin between the 4th and 8th was due to light to moderate rain on the 3d and 4th, supplemented by snowmelt runoff. Flood damage was minor.

Heavy rain (2.5-3.0 inches) on the 14th and 15th caused slight flooding on the Guyandotte River at Branchland, W. Va., on the 16th and 17th and on the Levisa Fork at Pikeville, Ky., on the 16th. Several families in the Pikeville area were forced to move but damage was light. Low places near and in Prestonburg, Ky., and Williamson and Branchland, W. Va., were covered with water but no damage was reported.

Showers averaging 1.3 inches over the central and lower portion of the Scioto River Basin on the 2d and 3d caused small streams flowing into the Scioto below Chillicothe, Ohio, to overflow highways out of Jackson, Ohio, and hamper traffic for several hours. No apparent damage resulted. The minor flooding in the lower Scioto from the 3d to the 6th slowed down some agricultural work but otherwise had little or no effect.

The flooding on the Little Miami River at Kings Mills, Ohio, on the 3d was due to rainfall averaging 2.0 to 2.5 inches. Local roads were flooded and some erosion occurred in the Kings Mills area but no significant damage was reported. The flooding in Kentucky River Basin on the 15th to the

17th was due to rainfall averaging around 3 inches. A few small homes were flooded in low town areas with slight damage. Traffic was interrupted due to erosion of highways in low places.

Minor flooding occurred on the Green River from the 19th to the 21st due to showers ranging from 1.5 to 2.5 inches on the 15th. No appreciable damage resulted.

Heavy rains on the 3d and 4th caused moderately high stages on the East Fork and the White River in Indiana between the 4th and 12th. The rainfall averaged 1.75 inches over the middle reaches of the White and 0.5 inch or less over the headwaters and lower reaches on the 3d. The rainfall was heaviest (1.5 inches) over the East Fork on the 4th, with 0.5 inch reported in the upper White. There was some delay in spring plowing, otherwise there was no damage.

Locally heavy rain over the South Chickamauga Creek on the 6th caused light flooding on that Creek at Chickamauga, Tenn., on the 6th and 7th. No damages were reported. Another period of heavy rainfall over the whole Tennessee River Basin on the 15th and 16th caused Chickamauga Creek to exceed flood stage again on the 15th through 17th. This same storm caused First Creek at Knoxville, Tenn., to exceed flood stage on the 15th and 16th. Flood stages were also reached along the main stem of the Tennessee at Gilbertsville, Ky., and Florence and Whitesburg, Ala.

The only flooding along the main stem of the Ohio occurred at Dams No. 47 and 50 and at Shawneetown, Ill.; no damage was reported.

Columbia Basin.--Snowfall was extremely heavy over the headwaters of the upper Columbia Basin during the past winter. A seasonal total of 83 inches was recorded at Spokane, Wash., which was the second greatest of record. Melting, even at low levels, was retarded due to a cold spring and it was not until an unusually warm period in mid-April that the runoff got well underway.

Flood stage was reached on the Spokane River at Spokane, Wash., on the 24th which continued through the rest of the month. This was due to the high flow out of Coeur d'Alene Lake. Damage was slight. The St. Joe River, a tributary in the Spokane Basin rose rapidly after the middle of the month and was a very serious flood threat for several weeks or more. It failed to reach flood stage at St. Maries, Idaho, but much damage occurred below the City where levees broke and several reclamation districts were flooded. About 1,500 acres of crop lands were inundated. The Coeur d'Alene River was above flood stage from the 22d to the 25th, and caused minor damage to highways and bridges in the vicinity of Cataldo, Idaho. Coeur d'Alene Lake was slightly above flood stage from the 24th to the 29th, but no damage was reported. High water occurred during April in the Colville River Valley in Stevens County, Washington. This was due entirely to rapid runoff from melting snow at fairly low elevations. The river spread out over the flat valley doing considerable damage to crops, highways, and bridges. Considerable damage occurred to streets and culverts in the town of Chewelah.

Flooding, mostly minor, occurred generally between the 21st and 25th on tributaries of the Snake in eastern Idaho, the Little Wood River in central Idaho, and on the Powder River in eastern Oregon. These floods were due entirely to runoff from mountain snow packs which occurred during a 2 week period of warm weather beginning on the 9th. Flow on most streams was well above average for April. Reports of the U.S.G.S. indicate the second highest April flow of record on the Salmon River at Whitebird, Idaho, and the third highest for April on the Snake River at Heise. Several hundred acres of grainland were flooded in eastern Idaho and about a dozen houses in the City of Idaho Falls. Damage from overflowing reservoirs was negligible.

There was minor flooding in a few low elevation tributary streams in southeastern Oregon and in the Yakima Basin of central Washington. There has been no property damage in the Portland-Vancouver area. The highest stage recorded on the Columbia at Vancouver, Wash., was 20.3 feet (5.3 feet above flood stage) on the 28th and 29th. The highest stage on the Willamette at Portland, Ore., was 20.4 feet on the 28th. These stages were the highest of record ever recorded in April for both Vancouver and Portland.

FLOOD STAGE DATA

Table 5 (All dates in April unless otherwise specified) APRIL 1956

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			Ft.	
HUDSON BAY DRAINAGE					
Red River of the North					
Moorhead, Minn.	17	14	17	18.2	16
Grand Forks, N. Dak.	28	19	26	32.5	23
ST. LAWRENCE DRAINAGE Lake Michigan					
Red Cedar:					
Williamston, Mich.	7	29	May 1	9.0	30
East Lansing, Mich.	8	29	May 2	10.0	30
Grand:					
Easton Rapids, Mich.	5	May 1	May 1	6.2	May 1
Lansing, Mich.	11	30	May 2	11.7	May 1
Lake Erie					
St. Joseph: Montpelier, Ohio	10	28	May 5	16.2	30
Maumee: Fort Wayne, Ind	15	29	May 4	17.6	May 2
Lake Ontario					
Oatka Creek: Garbutt, N. Y.	5	4 30	4 30	6.0 5.7	4 30
Black Creek: Churchville, N. Y.	5	30	30	5.2	30
Genesee: Scio, N. Y.	8	4	4	8.4	4
ATLANTIC SLOPE DRAINAGE					
Nashua: East Pepperell, Mass.	8	18	19	8.7	18
Connecticut:					
Montague City, Mass.	28	17 29	18 30	28.3 31.6	18 30
Holyoke, Mass.	9	30	1/	9.2	May 1
Hartford, Conn.	16	17 29	22 30	20.6 22.1	19 May 2
Mohawk: Schenectady, N. Y.	223	6	6	223.0	6
West Branch Delaware:					
Hale Eddy, N. Y.	11	5	6	12.4	5
East Branch Delaware:					
Fishs Eddy, N. Y.	10.5	16	18	11.85	17
Perkiomen Creek: Graterford, Pa.	8.0	8	8	8.7	8
Unadilla: Rockdale, N. Y.	11	6	6	11.5	6
Tioughnioga: Whitney Point, N. Y.	12	4	[illegible]	15.4	5
Chenango:					
Sherburne, N. Y.	[illegible]	4	8	9.2	6
Greene, N. Y.	13	5	8	15.2	6
Chemung:					
Elmira, N. Y.	12	4	5	13.5	5
Chemung, N. Y.	12	3	6	16.0	5
Susquehanna:					
Unadilla, N. Y.	11	6	7	12.2	6
Bainbridge, N. Y.	13	4	8	17.8	6
Conklin, N. Y.	11	4	10	16.0	7
Binghamton, N. Y.	14	5	8	16.3	6
Vestal, N. Y.	18	5	9	22.7	6
Towanda, Pa.	16	5 8	7 8	18.3 17.1	5 8
Wilkes-Barre, Pa.	22	6	6	22.5	6
Potomac: Washington (near), D.C.	10	9	9	10.5	9
Neuse: Neuse, N. C.	14	13	15	15.0	14
Smithfield, N. C.	13	13	17	15.9	14
Goldsboro, N. C.	14	16	21	15.8	19
Kinston, N. C.	14	22	22	14.1	22
Saluda:					
Pelzer, S. C.	6	16	18	9.8	16
Chappels, S. C.	13	11 16	12 19	14.1 18.8	12 18
Broad:					
Gaffney, S. C.	10	16	16	10.6	16
Blairs, S. C.	14	16 11	19 12	19.7 17.8	17 12
Santee: Rimini, S. C.	12	-- 5	**5 1/	16.4	23
EAST GULF OF MEXICO DRAINAGE					
Oostanaula: Resaca, Ga.	22	18	19	22.8	18
EAST GULF OF MEXICO DRAINAGE (Cont'd.)					
Cahaba: Centreville, Ala.	23	6 16	7 16	27.4 24.7	6 16
Black Warrior.					
Tuscaloosa Lock & Dam, Ala.	47	6	8	54.4	6
Tombigbee:					
Aberdeen, Miss.	34	9 11	9 13	34.3 35.6	9 12
Gainesville, Ala.	36	7	19	39.8 39.8	8 17
Demopolis, Ala.	42	7	24	57.3	12
Lock No. 3, Whitfield, Ala.	33	7	26	55.5 55.7	11 13
Lock No. 2, Pennington, Ala.	46	8	25	56.5	15
Lock No. 1, Jackson, Ala.	31	9	27	37.2	18-21
Chickasawhay. Enterprise, Miss.	20	7	9	27.1	8
Pearl:					
Edinburg, Miss.	20	6	13	25.2	9
Goshen Springs, Miss.	18	7	19	23.9	11
Jackson, Miss.	18	6	27	31.8	14
Monticello, Miss.	15	Mar. 15 11	3 25	17.1 18.9	1 20
Columbia, Miss.	17	19	24	17.5	21-22
Bogalusa, La.	15	Feb. 4	1/	19.3 18.8	Mar. 23 24-25
Pearl River, La.	12	Mar. 7 14	11 1/	15.2 14.0	Mar. 22 27
MISSISSIPPI SYSTEM Upper Mississippi Basin					
Chippewa: Durand, Wis.	11	8	9	11.3	8
Zumbro:					
Zumbro Falls, Minn.	12	1	4	19.9	2
Theilman, Minn.	38	1	4	40.85	2
Whitewater: Beaver, Minn.	7	1	4	9.4	2
Trempealeau: Dodge, Wis.	7	3	7	E10.0	[illegible]
Black: Galesville, Wis.	12	4	8	12.9	6
La Crosse: West Salem, Wis.	7	3	5	10.4	3
Root:					
Houston (near), Minn.	15	3	3	15.3	3
Hokah, Minn.	47	2	4	48.5	3
Baraboo: Baraboo (near), Wis.	20	6	6	20.6	6
Kickapoo:					
La Farge, Wis.	12	3	4	12.35	[illegible]
Readstown, Wis.	38	3	4	38.2	4
Steuben, Wis.	8	3	8	10.9	5
OHIO BASIN					
Allegheny: Olean, N. Y.	10	4	8	11.1	5
Guyandot: Branchland, W. Va.	30	16	17	34.4	17
Levisa Fork: Pikeville, Ky.	36	16	16	39.3	16
Paint Creek: Bourneville, Ohio	10	3	4	12.6 11.5	3 4
Scioto: Piketon, Ohio	16	3	6	20.0	4
Little Miami: Kings Mills, Ohio	17	3	3	18.6	3
North Fork:					
Hazard, Ky.	20	15	16	21.2	16
Jackson, Ky.	29	16	17	34.4	16
Green: Lock No. 2, Rumsey, Ky.	34	19	21	34.4	21
East Fork White: Seymour, Ind.	14	[illegible]	5	16.0	5
White:					
Anderson, Ind.	10	4	5	11.5	5
Elliston, Ind.	18	5	6	19.9	6
Edwardsport, Ind.	12	5	12	17.2	[illegible]
Petersburg, Ind.	16	8	12	19.0	11
First Creek: Knoxville, Tenn.					
Fifth Avenue	5	15	16	7.35	16
Mineral Springs	6	15	16	6.95	16
South Chickamauga Creek: Chickamauga (near), Tenn.	10	6 15	7 17	10.8 12.1	7 16

FLOOD STAGE DATA

Table 5-Continued

(All dates in April unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft.			*Ft.*	
MISSISSIPPI SYSTEM (Cont'd) Ohio Basin (Cont'd)					
Tennessee					
Whiteburg, Ala.	560	16	19	560.8	17
Florence, Ala.	419	17	17	419.0	17
Gilbertsville, Ky	320	8 16	12 20	320.7 321.5	12 17
Ohio:					
Dam No. 47, Newburg, Ind.	38	10	14	38.6	11
Shawneetown, Ill.	33	8	18	35.6	13
Dam No. 50, Fords Ferry, Ky	34	7	21	37.9	15
PACIFIC SLOPE DRAINAGE Columbia Basin					
Coeur d'Alene Cataldo, Idaho	43	22	25	43.8	23
Coeur d'Alene Lake, Idaho	35	24	29	35.5	26
Spokane Spokane, Wash	27	24	30	27.6	26-27
Willamette Portland, Ore	18	24	1	20.4	28
Columbia Vancouver, Wash	15	23	1	20.3	26

* Provisional
1 Continued at end of month
E Estimated
** Backwater from Lake Marion

RAWINSONDE DATA

Average monthly values

Table 20

APRIL 1956

Standard pressure surface (mb)	ALBANY, N. Y. (1001 MB.)						ALBUQUERQUE, N. MEX. (834 MB.)						ANCHORAGE, ALASKA (1005 MB.)						ANNETTE, ALASKA (1013 MB.)						ATHENS, GA. (986 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	86	4.2	74	255	2.3	30	1,619	14.2	21	338	0.8	30	30	4.4	53	186	2.3	30	37	7.4	70	157	1.9	30	246	14.1	63	264	3.3
1,000	30	94			257	4.7	30	52					30	72			258	.8	30	146	6.7	72	168	2.7	30	122				
950	30	514	3.4	62	282	5.8	30	504					30	488	1.0	54	117	4.3	30	564	3.8	72	171	3.3	30	559	15.1	47	268	9.5
900	30	948	1.1	65	287	9.3	30	969					30	919	- 2.0	58	121	7.4	30	1,002	.7	73	183	5.1	30	1,013	12.0	48	269	12.6
850	30	1,406	- 1.6	67	287	12.6	30	1,457					30	1,371	- 5.0	61	133	9.7	30	1,459	- 2.3	72	204	4.3	30	1,488	8.3	50	277	14.0
800	30	1,886	- 4.1	68	288	15.0	30	1,969	12.5	22	260	7.0	30	1,844	- 8.1	62	146	13.0	30	1,938	- 4.9	63	243	4.9	30	1,987	5.4	46	279	16.1
750	30	2,400	- 6.1	57	281	16.1	30	2,512	8.0	25	269	12.0	30	2,346	-11.2	60	155	13.8	30	2,450	- 7.5	58	268	8.7	30	2,519	2.9	38	283	20.0
700	30	2,931	- 8.4	53	282	18.8	30	3,069	3.1	31	267	12.4	30	2,868	-14.5	59	165	13.6	30	2,978	-10.1	54	275	11.3	30	3,068	.3	35	288	24.1
650	30	3,509	-11.5	50	279	21.0	30	3,667	- 2.3	36	260	12.0	30	3,430	-17.9	58	170	14.0	30	3,554	-13.2	49	276	13.0	28	3,664	- 2.7	33	291	26.0
600	29	4,111	-14.7	47	279	22.9	30	4,293	- 7.9	41	259	13.6	30	4,020	-21.8	57	181	14.8	30	4,152	-16.2	48	272	15.2	27	4,292	- 6.6	30	290	30.1
550	29	4,768	-18.7	48	280	26.2	30	4,964	-13.4	40	267	16.5	30	4,659	-26.1	54	182	15.2	30	4,806	-20.2	48	275	19.4	27	4,971	-11.1		288	34.4
500	29	5,468	-23.7	45	278	28.2	30	5,679	-19.4	37	271	21.6	30	5,338	-30.8	51	191	15.2	30	5,502	-24.7	44	274	21.2	27	5,691	-16.2		284	35.5
450	28	6,225	-29.5		274	34.2	30	6,461	-24.9	35	274	26.4	30	6,085	-35.7		205	13.0	30	6,268	-29.8	44	271	25.6	27	6,489	-21.9		284	42.5
400	27	7,057	-34.8		280	42.3	30	7,298	-31.4		277	29.5	30	6,888	-41.0		218	14.8	30	7,090	-35.7	45	265	24.9	26	7,338	-27.9	37	285	48.8
350	26	7,979	-41.5		279	49.0	30	8,230	-37.6		282	29.1	30	7,784	-46.6		222	16.3	30	8,005	-42.5		259	21.4	25	8,283	-34.7		287	55.2
300	26	9,009	-48.0		279	51.7	30	9,276	-44.5		269	30.9	30	8,796	-50.4		230	15.2	30	9,029	-49.9		277	21.4	25	9,341	-42.7		285	64.5
250	25	10,204	-53.2		279	51.9	30	10,477	-51.4		268	37.9	30	9,979	-52.2		216	14.8	29	10,202	-55.8		273	27.6	25	10,547	-51.3		285	70.9
200	25	11,635	-54.1		275	47.0	30	11,904	-56.9		267	50.3	30	11,424	-50.8		218	12.6	29	11,620	-55.3		276	24.9	24	11,976	-58.4		285	78.1
175	24	12,478	-54.1		272	40.6	30	12,747	-57.5		272	50.5	30	12,295	-49.4		215	11.3	27	12,475	-53.5				23	12,808	-59.9		284	75.0
150	23	13,455	-53.2		274	34.8	29	13,719	-58.4		267	42.3	30	13.305	-48.3		213	11.3	26	13,473	-53.0				23	13,766	-62.0		285	63.7
125	21	14,622	-53.7		274	25.3	26	14,859	-59.9				30	14.506	-47.8		212	14.4	26	14,647	-53.2				22	14,894	-63.4		284	54.6
100	20	16,051	-54.9		266	19.6	26	16,244	-61.9				28	15,973	-47.4		198	9.1	21	16,087	-52.3				18	16,254	-64.5		284	43.5
80	19	17,472	-54.7		264	13.2	25	17,626	-61.8				28	17,445	-47.8		168	6.2	20	17,525	-52.5				16	17,628	-63.8		293	26.8
60	17	19,314	-54.7		250	6.8	23	19,406	-60.1				27	19,344	-48.2		108	8.0	14	19,402	-53.1				16	19,401	-61.3		276	10.7
50	15	20,476	-54.5		242	2.7	23	20,549	-58.2				27	20,541	-48.6		131	10.5	[illegible]	20,617	-51.9				16	20,539	-58.7		286	6.4
40	11	21,927	-53.7		206	3.1	22	21,961	-56.4				25	22,008	-49.7		102	12.4							15	21,951	-57.0		322	1.0
30	7	23,777	-53.7				17	23,796	-54.2				16	23,887	-50.1		83	9.7							11	23,786	-54.5			
20							6	26,452	-50.6																					

	BARROW, ALASKA (1018 MB.)						BETHEL, ALASKA (1007 MB.)						BISMARCK, N. DAK. (956 MB.)						BOISE, IDAHO (912 MB.)						BROWNSVILLE, TEX. (1011 MB.)					
SURFACE	30	8	-15.3	64	57	5.4	30	4	- 2.0	76	360	2.7	30	505	2.4	62	49	6.8	30	868	11.8	46	313	3.3	29	7	22.0	83	122	8.9
1,000	30	144	-15.3	72	75	6.0	30	59			85	2.7	30	139					30	90					29	106	21.8	80	129	10.5
950	30	539	-13.4	69	95	7.8	30	471	- 4.2	65	93	4.5	30	561			36	7.2	30	531					29	554	20.3	70	148	14.2
900	30	945	-11.4	64	106	6.6	30	891	- 5.2	60	105	4.5	30	996	1.4	55	26	8.2	30	983	12.3	39	314	5.8	29	1,017	19.2	59	163	12.6
850	30	1,384	-11.4	57	123	4.9	30	1,338	- 6.9	62	137	3.9	30	1,453	- 1.4	54	349	8.0	30	1,460	9.6	38	327	8.5	29	1,507	17.5	47	174	9.1
800	30	1,847	-13.1	54	148	3.5	30	1,808	- 9.7	61	158	3.3	30	1,934	- 4.0	53	323	10.3	30	1 959	5.4	44	320	9.7	29	2,023	15.7	35	198	7.8
750	30	2,346	-15.2	52	159	3.9	30	2,311	-12.2	55	166	5.6	30	2,447	- 6.4	52	316	12.8	30	2,490	1.1	50	322	8.7	29	2,574	13.3	30	230	7.4
700	30	2,855	-17.9	50	190	4.9	30	2,828	-15.3	53	166	5.4	30	2,977	- 9.0	50	309	15.9	30	3,034	- 3.3	55	324	8.0	29	3,145	9.8	30	257	11.8
650	30	3,418	-21.1	48	201	5.8	30	3,392	-18.6	52	180	5.6	30	3,552	-11.7	45	309	19.2	30	3,622	- 7.4	54	300	6.4	28	3,762	5.8	31	263	15.2
600	30	3,993	-24.4	48	206	6.4	30	3,976	-21.8	47	182	6.6	30	4,156	-15.1	45	303	22.7	30	4,235	-11.5	48	292	6.4	28	4,406	.9	33	257	18.1
550	30	4,630	-28.4	47	220	10.7	30	4,617	-25.6	46	183	6.0	30	4,812	-19.2	45	300	26.2	30	4,899	-16.0	44	293	9.1	28	5,104	- 4.4	35	265	20.6
500	30	5,299	-32.7	46	223	10.3	30	5,296	-30.0	45	173	5.8	30	5,511	-23.8	38	297	29.9	30	5,607	-21.1	42	293	9.9	28	5,842	- 9.8	38	270	26.8
450	30	6,045	-37.5		222	13.0	30	6,048	-35.3		170	8.0	30	6,281	-29.4	35	291	28.6	30	6,385	-26.9	42	287	11.1	28	6,656	-15.3	39	277	30.3
400	30	6,839	-42.4		217	14.0	30	6,850	-40.6		185	8.0	30	7,102	-35.8		289	34.0	30	7,214	-33.5	42	282	5.2	28	7,526	-21.5	43	272	32.8
350	30	7,730	-47.9		224	15.7	30	7,747	-46.6		181	8.9	28	8,013	-43.1		278	32.2	30	8,137	-40.9		279	5.4	28	8,496	-28.6	41	271	33.8
300	30	8,736	-51.4		231	15.7	30	8,758	-51.1		205	7.8	28	9,034	-50.2		263	39.0	30	9,167	-48.7		278	6.2	28	9,581	-36.9		265	39.4
250	30	9,917	-51.3		233	10.5	30	9,937	-52.0		214	9.1	28	10,206	-56.1		273	26.2	30	10,344	-55.7		344	6.8	25	10,821	-46.4		268	44.1
200	30	11,373	-48.9		221	7.2	30	11,387	-50.0		224	5.8	28	11,621	-55.2				30	11,751	-59.0		310	12.0	25	12,265	-57.6			
175	30	12,251	-47.8		210	5.4	30	12,261	-48.7		205	8.0	28	12,476	-53.5				30	12,590	-57.0		302	13.4	25	13,096	-63.4			
150	30	13,269	-46.8		215	5.6	30	13,275	-47.7		188	8.5	28	13,466	-53.7				30	13,569	-56.2		306	13.2	22	14,029	-67.2			
125	29	14,477	-46.2		195	4.1	30	14,480	-46.9		189	7.4	28	14,636	-54.2				29	14,720	-56.9		286	13.4	19	15,120	-69.7			
100	29	15,958	-46.0		178	3.7	30	15,958	-46.6		171	4.9	28	16,065	-54.3				26	16,129	-57.4		279	14.0	18	16,436	-72.6			
80	25	17,451	-45.8		149	3.7	29	17,433	-46.7		154	7.0	26	17,492	-54.8				26	17,539	-57.1		276	11.7	13	17,740	-71.9			
60	24	19,369	-46.0		148	4.3	29	19,335	-47.6		135	7.4	25	19,329	-54.4				25	19,360	-56.2		299	4.3	12	19,449	-66.2			
50	22	20,582	-46.4		121	5.1	29	20,536	-48.1		133	8.0	25	20,497	-54.1				25	20,518	-55.8		13	3.1	12	20,564	-61.9			
40	16	22,074	-47.4		110	6.8	26	22,002	-48.9		105	8.5	24	21,928	-54.0				22	21,932	-55.3		57	4.9	12	21,958	-57.7			
30	10	23,969	-48.4				20	23,888	-49.5		112	11.1	17	23,777	-54.0				13	23,759	-54.9				11	23,792	-54.2			
20													5	26,426	-52.5										7	26,394	-50.3			

	BUFFALO, N. Y. (989 MB.)						BURRWOOD, LA. (1016 MB.)						CARIBOU, ME. (988 MB.)						CHARLESTON, S. C. (1014 MB.)						COLD BAY, ALASKA (1002 MB.)					
SURFACE	30	182	4.2	82	238	2.1	30	3	18.9	85	167	3.7	30	191	1.3	74	291	2.7	30	13	15.4	74	207	5.1	30	29	0.4	83	288	3.9
1,000	30	92					30	135	19.3	74	162	5.2	30	91					30	131	16.8	64	211	7.8	30	41			340	3.5
950	30	512	4.6	66	257	7.2	30	577	17.3	67	186	6.4	30	507	.9	68	310	6.0	30	573	15.6	56	245	13.6	30	456	- 2.5	79	271	4.5
900	30	951	2.0	67	260	11.3	30	1,036	15.0	56	202	4.9	30	938	- 1.6	70	321	5.6	30	1,025	12.7	55	256	15.3	30	877	- 4.8	79	279	4.3
850	30	1,410	- .8	65	267	14.4	30	1,518	13.2	45	234	6.6	30	1,390	- 4.6	73	323	6.4	30	1,502	9.7	54	262	17.9	30	1,324	- 7.0	76	305	3.7
800	30	1,892	- 3.3	62	271	19.0	30	2,026	10.8	41	255	8.0	30	1,865	- 7.4	76	293	7.0	30	2,003	6.9	45	267	19.0	30	1,795	- 9.0	67	298	4.3
750	30	2,403	- 6.0	62	268	21.2	30	2,564	7.9	33	262	9.9	30	2,371	- 9.0	69	297	7.4	30	2,541	4.2	38	283	19.8	30	2,296	-11.4	57	308	4.1
700	30	2,937	- 8.7	57	271	21.6	30	3,127	5.1	28	268	14.2	30	2,898	-11.4	66	287	9.7	30	3,089	1.6	33	283	23.7	30	2,818	-14.4	51	282	4.9
650	30	3,516	-11.4	48	278	22.7	30	3,734	1.9		274	17.9	30	3,470	-14.4	59	292	11.7	29	3,690	- 1.7		279	24.3	29	3,383	-17.7	49	265	2.7
600	30	4,118	-14.7	46	280	25.8	30	4,369	- 2.0		276	22.5	30	4,065	-17.7	56	286	14.8	29	4,316	- 5.6		288	27.2	28	3,969	-21.4	42	119	.6
550	29	4,769	-19.1	43	283	28.0	30	5,055	- 6.8		278	28.2	29	4,712	-21.9	54	285	17.7	28	5,005	-10.2		285	26.8	28	4,611	-25.0	41	242	4.9
500	29	5,471	-23.8	43	285	30.3	30	5,792	-11.6		276	33.4	29	5,403	-26.4	51	287	18.6	28	5,725	-15.6		291	34.4	28	5,292	-29.6	40	242	5.2
450	29	6,240	-29.1	41	283	34.4	29	6,597	-17.3	37	279	41.0	28	6,169	-31.3	49	269	20.8	28	6,517	-21.3		283	35.0	28	6,046	-34.5		261	11.8
400	29	7,065	-35.2		284	37.1	29	7,461	-23.8	39	274	41.8	28	6,986	-36.9		265	24.1	27	7,374	-27.3		282	36.5	28	6,851	-39.6		235	14.0
350	29	7,981	-41.8		285	43.9	29	8,422	-31.0		271	44.9	27	7,891	-43.5		262	26.4	27	8,321	-34.4		283	37.7	28	7,752	-45.3		271	16.7
300	29	9,010	-48.5		285	43.5	28	9,494	-39.1		281	51.1	27	8,913	-49.3		263	31.1	27	9,381	-42.2				28	8,768	-49.5		249	22.7
250	28	10,182	-53.4		279	40.0	27	10,717	-48.6				27	10,098	-51.6		264	35.5	27	10,590	-50.8				28	9,954	-50.9		255	25.4
200	28	11,616	-53.2		279	34.2	24	12,149	-58.3				27	11,546	-51.1		271	29.3	27	12,018	-57.7				28	11,408	-49.7		269	11.7
175	27	12,475	-53.6		274	30.9	23	12,977	-62.6				27	12,413	-51.3		274	25.1	27	12,857	-59.4				28	12,282	-48.8		239	14.0
150	25	13,470	-54.0		270	27.8	21	13,936	-65.3				26	13,410	-52.1		264	23.3	27	13,818	-61.0				28	13,294	-48.3		240	12.6
125	22	14,630	-54.8		284	16.9	18	15,054	-68.4				24	14,583	-52.1		265	16.5	24	14,933	-62.6				28	14,493	-48.2		248	10.3
100	20	16,055	-55.9		282	15.2	16	16,382	-71.1				21	16,017	-53.1		244	8.7	22	16,306	-64.1				28	15,961	-47.9		228	8.7
80	19	17,471	-55.7		277	8.5	16	17,700	-71.0				19	17,454	-54.2		237	7.8	20	17,671	-64.0				26	17,434	-48.2		228	6.2
60	17	19,305	-55.2		275	5.2	14	19,429	-65.3				16	19,296	-54.8		162	4.1	19	19,450	-59.9				24	19,329	-48.9			
50	16	20,475	-55.1		285	1.9	14	20,545	-62.4				16	20,462	-54.9		199	4.3	18	20,592	-58.0				21	20,530	-49.7			
40	13	21,898	-54.8				14	21,930	-59.1				14	21,891	-54.3		134	5.2	18	22,004	-56.0				17	21,990	-50.5			
30	10	23,744	-54.1				12	23,750	-55.8				10	23,720	-54.2				15	23,847	-54.1				6	23,856	-51.8			
20	9	26,351	-52.2				7	26,370	-52.0				6	26,312	-51.3				11	26,462	-50.5									
15	7	28,235	-49.8																											

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

APRIL 1956

COLUMBIA, MO. (985 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	238	10.8	54	291	1.9
1,000	30	108				
950	30	538	10.4	50	285	4.5
900	30	986	7.7	52	273	9.1
850	30	1,455	5.0	54	267	14.6
800	30	1,948	2.5	53	268	17.9
750	30	2,471	- .3	48	276	21.0
700	30	3,016	- 3.3	45	278	21.6
650	30	3,601	- 6.7	46	280	24.3
600	30	4,220	-10.1	43	282	28.9
550	30	4,883	-14.7	38	281	32.6
500	30	5,600	-19.7	33	282	33.4
450	30	6,377	-25.1		280	40.0
400	28	7,212	-31.3		280	46.0
350	28	8,144	-38.2		278	51.3
300	27	9,176	-46.1		273	58.3
250	27	10,368	-53.1		273	63.9
200	27	11,792	-56.4		274	63.9
175	27	12,638	-56.8		272	58.5
150	26	13,614	-57.8		275	54.4
125	25	14,764	-58.7		276	43.5
100	24	16,163	-59.1		277	34.6
80	22	17,557	-59.0		281	21.0
60	18	19,364	-57.3		284	6.2
50	18	20,519	-56.2		336	2.7
40	16	21,947	-54.9		80	2.9
30	12	23,782	-53.9		108	6.0

DODGE CITY, KANS. (922 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	10.2	44	116	4.5
1,000	30	100				
950	30	535				
900	30	990	11.3	39	119	5.1
850	30	1,465	8.9	38	171	3.5
800	30	1,964	6.6	35	258	7.4
750	30	2,495	3.8	35	266	13.0
700	30	3,047	.4	36	269	15.0
650	30	3,639	- 3.6	38	272	18.8
600	30	4,264	- 8.3	42	277	20.8
550	30	4,931	-13.5	43	280	20.4
500	30	5,650	-18.8	40	273	22.1
450	30	6,427	-24.7	36	276	25.1
400	30	7,271	-31.2		278	27.0
350	30	8,202	-38.4		276	30.5
300	30	9,243	-46.0		262	35.5
250	30	10,435	-52.8		262	48.8
200	30	11,858	-57.2		258	44.9
175	30	12,700	-57.9		259	46.8
150	30	13,668	-58.6		265	45.1
125	28	14,811	-59.1		269	42.9
100	28	16,204	-60.2		280	26.4
80	28	17,593	-60.3		279	22.5
60	27	19,390	-58.7		294	10.7
50	27	20,538	-57.4		320	7.4
40	23	21,955	-55.9			
30	17	23,797	-53.7			

EL PASO, TEX. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,195	18.1	20	280	2.3
1,000	29	67				
950	29	517				
900	29	986				
850	29	1,477	17.5		271	4.7
800	29	1,991	13.7		262	7.2
750	29	2,535	9.3	26	258	10.9
700	29	3,097	4.8	27	249	13.4
650	29	3,698	- .2	28	248	17.7
600	29	4,330	- 5.1	30	253	21.8
550	29	5,004	-10.1		255	25.1
500	29	5,734	-15.5		259	26.6
450	29	6,524	-21.2		261	28.0
400	28	7,382	-26.9		277	32.6
350	28	8,331	-33.8		281	38.9
300	28	9,394	-41.4			
250	28	10,608	-49.6			
200	27	12,045	-56.2			
175	27	12,887	-58.7			
150	26	13,850	-61.1			
125	21	14,975	-63.9			
100	21	16,337	-65.0			
80	19	17,698	-64.9			
60	17	19,464	-61.3			
50	16	20,594	-58.9			
40	15	22,002	-56.2			
30	14	23,841	-53.4			

ELY, NEV. (805 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,908	6.3	55	7	0.8
1,000	30	88				
950	30	530				
900	30	982				
850	30	1,459				
800	30	1,962			354	1.6
750	30	2,495	4.3	46	293	3.1
700	30	3,047	- .3	49	277	4.7
650	30	3,636	- 5.1	54	251	4.9
600	30	4,258	-10.1	57	234	6.2
550	30	4,925	-14.8	51	241	8.0
500	30	5,637	-20.2	48	266	9.1
450	30	6,416	-25.9	44	282	8.5
400	30	7,251	-32.3	39	283	9.7
350	30	8,178	-39.7		288	7.6
300	30	9,215	-47.0		292	8.9
250	30	10,401	-53.9		298	13.4
200	29	11,823	-57.3		295	21.4
175	29	12,667	-56.2		291	19.6
150	29	13,646	-56.4		286	21.2
125	28	14,802	-57.6		284	17.7
100	24	16,208	-58.1		278	14.2
80	24	17,608	-58.8		273	10.9
60	22	19,416	-57.9		354	1.0
50	19	20,566	-56.7		53	4.9
40	18	21,987	-55.4		82	4.7
30	13	23,832	-53.3			

FAIRBANKS, ALASKA (994 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	135	4.5	46	218	0.8
1,000	30	83			324	1.7
950	30	501	1.5	42	157	1.0
900	30	930	- 1.9	47	158	2.1
850	30	1,382	- 5.2	51	171	5.2
800	30	1,855	- 8.1	51	181	7.2
750	30	2,358	-11.2	48	192	8.4
700	30	2,879	-14.5	48	201	10.9
650	30	3,442	-18.1	47	208	10.3
600	30	4,031	-21.9	49	212	9.1
550	30	4,670	-26.1	49	208	10.3
500	30	5,348	-31.0	47	204	11.1
450	30	6,097	-36.4		205	11.1
400	30	6,894	-41.9		209	11.8
350	30	7,786	-47.3		213	10.7
300	30	8,795	-51.4		203	8.9
250	30	9,974	-52.4		199	9.7
200	30	11,420	-50.7		208	14.0
175	30	12,292	-49.2		207	9.7
150	30	13,305	-48.1		202	8.4
125	29	14,510	-47.9		206	6.4
100	29	15,983	-47.5		178	5.1
80	29	17,457	-47.3		163	4.3
60	29	19,357	-47.5		121	4.3
50	27	20,561	-48.4		99	5.8
40	23	22,042	-49.0		74	8.5
30	20	23,938	-49.1			

FORT HUACHUCA, ARIZ. (856 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,428	16.4	23	251	4.9
1,000	29	75				
950	29	529				
900	29	997				
850	29	1,485	16.1	23	253	4.7
800	29	1,995	11.7	28	245	9.9
750	29	2,533	7.0	32	239	10.9
700	29	3,091	2.1	35	221	13.0
650	29	3,684	- 2.4	32	215	14.8
600	29	4,314	- 6.8	27	223	17.5
550	29	4,986	-11.2		239	22.9
500	27	5,714	-15.7		244	25.8
450	22	6,502	-21.4		252	32.6
400	15	7,368	-27.4		253	39.0
350	15	8,315	-34.1		256	44.5
300	14	9,374	-42.2		254	48.8
250	11	10,578	-49.9		259	55.6
200	9	12,020	-57.4			
175	6	12,878	-61.0			
150						
125						
100						
80						
60						
50						
40						
30						
20						
15						

FORT WORTH, TEX. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	178	18.6	56	169	3.5
1,000	30	107				
950	30	550	17.5	50	161	11.5
900	30	1,008	14.3	54	187	13.4
850	30	1,489	12.0	52	221	12.4
800	30	1,994	9.9	43	245	13.4
750	30	2,535	7.1	40	261	16.5
700	30	3,091	3.5	38	267	20.0
650	30	3,692	- .9	33	273	22.3
600	30	4,321	- 5.5	36	273	26.2
550	30	5,000	-10.3	33	272	30.7
500	30	5,725	-15.4		270	34.6
450	30	6,520	-21.1		270	40.4
400	30	7,370	-27.5		269	44.1
350	30	8,316	-34.6		266	50.3
300	29	9,371	-42.2		265	62.9
250	29	10,581	-50.1		263	76.0
200	29	12,013	-57.5		266	88.2
175	29	12,850	-60.3		270	81.4
150	26	13,805	-62.4		270	73.2
125	24	14,924	-63.9		270	58.7
100	18	16,295	-65.9		270	48.0
80	18	17,650	-65.3		269	29.1
60	18	19,413	-62.1		282	8.9
50	15	20,549	-59.7		289	5.1
40	15	21,957	-56.3		97	2.3
30	14	23,792	-54.1		130	2.7
20	10	26,396	-50.3			
15	5	28,293	-47.6			

GLASGOW, MONT. (935 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	695	4.5	44	71	4.7
1,000	30	142				
950	30	564				
900	30	1,008	4.4	44	53	6.8
850	30	1,470	1.2	48	6	3.9
800	30	1,955	- 2.1	52	313	7.2
750	30	2,474	- 4.8	52	313	12.4
700	30	3,005	- 7.5	47	317	16.9
650	30	3,583	-10.6	45	315	19.8
600	30	4,190	-14.3	45	314	23.1
550	30	4,847	-18.3	40	311	24.7
500	30	5,549	-23.3	39	307	26.6
450	30	6,319	-29.1		296	28.2
400	30	7,142	-35.5		307	29.3
350	30	8,057	-42.5		307	28.0
300	30	9,080	-50.1		309	28.9
250	30	10,251	-56.7		300	31.7
200	30	11,663	-56.0		301	24.9
175	29	12,517	-53.8		294	24.7
150	29	13,508	-53.6		294	20.0
125	29	14,679	-53.9		292	19.0
100	28	16,116	-54.5		286	12.6
80	28	17,547	-53.9		296	10.3
60	28	19,394	-53.8		330	1.7
50	28	20,566	-53.3		125	4.1
40	27	21,998	-53.6		63	9.1
30	23	23,854	-53.4		85	10.3
20						
15						

GRAND JUNCTION, COLO. (848 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	11.6	35	146	1.0
1,000	30	60				
950	30	505				
900	30	963				
850	30	1,449				
800	30	1,956	9.8	36	240	4.5
750	30	2,495	5.4	40	240	7.2
700	30	3,046	.6	46	247	10.7
650	30	3,638	- 4.4	51	258	10.3
600	30	4,260	- 9.6	57	257	12.2
550	30	4,925	-15.1	57	252	13.4
500	30	5,638	-20.4	50	262	15.2
450	30	6,416	-26.3	49	263	15.5
400	30	7,249	-32.9	47	274	14.4
350	30	8,173	-40.6		287	14.4
300	28	9,207	-48.5		303	12.0
250	28	10,385	-55.2		294	19.8
200	27	11,802	-58.3		290	22.9
175	27	12,642	-57.4		284	23.9
150	26	13,615	-57.5		285	24.3
125	24	14,762	-59.1			
100	23	16,161	-59.7			
80	22	17,555	-59.6			
60	20	19,353	-59.1			
50	19	20,502	-57.3			
40	18	21,920	-56.6			
30	9	23,759	-55.1			
20						
15						

GREAT FALLS, MONT. (887 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,123	6.0	51	18	3.1
1,000	30	124				
950	30	560				
900	30	1,007				
850	30	1,472	4.6	51	7	3.5
800	30	1,963	1.0	57	315	2.9
750	30	2,486	- 2.6	63	299	5.4
700	30	3,022	- 5.9	63	295	9.5
650	30	3,604	- 9.4	59	299	11.8
600	30	4,213	-13.2	55	302	13.6
550	30	4,873	-17.6	47	300	15.9
500	30	5,576	-22.6	44	302	16.7
450	30	6,348	-28.3	42	301	16.3
400	30	7,174	-34.3	42	298	21.2
350	30	8,093	-41.8		295	25.1
300	30	9,118	-49.8		297	28.4
250	29	10,297	-56.3		299	29.3
200	26	11,693	-58.3		297	25.6
175	26	12,538	-55.8		295	23.5
150	26	13,519	-55.3		298	20.2
125	26	14,683	-55.1		293	17.9
100	25	16,108	-55.5		296	13.2
80	23	17,534	-55.0		297	7.2
60	20	19,375	-54.2		354	4.1
50	19	20,542	-53.9		358	2.1
40	17	21,976	-54.4		56	4.9
30	15	23,823	-53.6		68	7.2
20	6	26,428	-51.5			
15						

GREEN BAY, WIS. (986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	210	3.3	67	4	2.1
1,000	30	95				
950	30	516	3.8	54	333	3.1
900	30	951	1.5	50	300	4.7
850	30	1,409	- 1.2	53	312	8.9
800	30	1,890	- 3.8	58	310	11.7
750	30	2,400	- 6.4	60	311	13.0
700	30	2,934	- 9.1	53	304	14.4
650	30	3,509	-12.0	50	296	15.2
600	30	4,112	-15.5	43	298	23.1
550	30	4,764	-19.8	40	291	27.2
500	30	5,463	-24.5	38	291	29.3
450	30	6,229	-29.8	40	283	30.3
400	30	7,051	-36.0	41	281	33.0
350	30	7,964	-42.5		278	37.9
300	30	8,988	-49.6		270	37.1
250	29	10,175	-53.9		265	32.4
200	29	11,603	-54.4		273	32.6
175	29	12,458	-54.2		272	27.6
150	29	13,447	-53.7		271	17.1
125	29	14,616	-54.1		279	13.0
100	29	16,043	-55.0		289	7.8
80	28	17,467	-55.5		280	5.4
60	27	19,299	-55.4			
50	26	20,465	-55.0		73	5.4
40	25	21,894	-54.7		76	7.6
30	22	23,731	-54.1			
20	8	26,309	-54.4			

GREENSBORO, N. C. (983 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	273	11.3	65	263	2.3
1,000	30	125				
950	30	559	12.4	50	259	7.2
900	30	1,009	9.6	52	273	14.0
850	30	1,480	6.6	53	272	18.5
800	30	1,976	3.8	51	271	20.6
750	30	2,505	.7	53	275	21.8
700	30	3,049	- 2.0	42	285	23.5
650	30	3,640	- 5.3	39	287	25.8
600	30	4,258	- 9.0	39	288	26.2
550	30	4,931	-13.3	36	286	29.7
500	30	5,645	-17.8	34	285	31.5
450	30	6,435	-23.2		288	34.2
400	30	7,277	-29.6	35	291	35.2
350	30	8,214	-36.8		288	39.8
300	30	9,263	-44.5		280	45.1
250	30	10,463	-51.6		270	49.1
200	30	11,890	-56.9		269	49.9
175	30	12,733	-57.5			
150	30	13,703	-58.7			
125	29	14,842	-60.2			
100	27	16,227	-60.8			
80	27	17,614	-60.5			
60	25	19,419	-58.7			
50	24	20,570	-57.1			
40	21	21,982	-55.9			
30	18	23,816	-54.2			
20	5	26,390	-52.5			

HATTERAS, N. C. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	13.7	78	240	3.3
1,000	30	123	14.2	70	237	6.4
950	30	556	12.3	63	266	10.9
900	30	1,007	9.7	54	271	14.6
850	30	1,479	7.2	49	281	19.8
800	30	1,976	4.5	47	270	24.3
750	30	2,506	1.5	45	272	27.6
700	30	3,051	- 1.6	40	273	27.2
650	30	3,643	- 4.6	37	273	27.0
600	30	4,264	- 8.3	34	279	27.4
550	30	4,935	-12.5		279	28.9
500	30	5,654	-17.7		282	31.1
450	30	6,439	-23.7		287	32.1
400	30	7,283	-29.9		288	34.2
350	30	8,220	-37.0		288	41.2
300	30	9,269	-44.3		291	43.9
250	30	10,470	-51.4			
200	30	11,901	-56.2			
175	30	12,747	-57.2			
150	30	13,718	-58.7			
125	29	14,854	-60.0			
100	26	16,237	-60.8			
80	26	17,624	-60.7			
60	26	19,423	-57.9			
50	25	20,577	-56.5			
40	24	22,000	-55.2			
30	21	23,850	-53.5			
20						

HILO, T. H. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	9	23.8	72	78	4.9
1,000	29	136	22.4	73	73	5.4
950	29	582	18.9	79	80	6.2
900	29	1,044	15.5	83	76	4.9
850	29	1,527	12.4	84	59	3.7
800	29	2,034	10.2	76	36	3.7
750	29	2,579	8.3	58	31	4.3
700	29	3,138	6.3	44	18	2.9
650	29	3,749	3.8	36	334	2.7
600	29	4,390	.0		285	5.1
550	29	5,084	- 4.1		275	8.0
500	29	5,827	- 8.8		276	12.2
450	29	6,648	-14.2		273	17.3
400	29	7,519	-20.5		270	21.0
350	29	8,492	-28.4		273	26.8
300	29	9,579	-36.5	40	272	41.4
250	29	10,816	-46.2		279	54.4
200	29	12,261	-57.5		271	57.7
175	28	13,093	-63.2		268	49.9
150	28	14,028	-68.9		269	45.5
125	25	15,106	-72.5		273	40.4
100	21	16,408	-74.7		282	23.5
80	18	17,713	-72.3			
60	12	19,417	-66.5			
50	12	20,526	-64.0			
40	12	21,903	-60.3			
30	[illegible]	23,717	-56.4			
20						

INTERNAT. FALLS, MINN. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	360	0.7	58	328	5.6
1,000	30	118				
950	30	534	.6	54	334	7.0
900	30	964	- 2.2	56	346	8.9
850	30	1,416	- 4.6	56	345	9.1
800	30	1,891	- 6.5	54	332	9.3
750	30	2,398	- 8.4	53	327	11.8
700	30	2,927	-10.6	52	321	12.8
650	30	3,497	-13.7	50	312	14.2
600	29	4,097	-17.1	52	304	16.5
550	28	4,744	-21.1	47	300	19.8
500	28	5,438	-25.8	44	298	23.1
450	27	6,194	-31.3	44	292	25.4
400	27	7,013	-37.1	44	291	32.8
350	27	7,921	-44.1		288	35.5
300	27	8,937	-50.9		286	40.2
250	24	10,111	-53.7		289	37.9
200	21	11,542	-51.0		292	32.6
175	18	12,421	-49.4		292	29.1
150	18	13,428	-50.3		289	25.4
125	18	14,614	-51.5		287	19.4
100	15	16,066	-52.2		289	14.2
80	12	17,505	-53.0		291	9.5
60	9	19,353	-53.1			
50	9	20,527	-53.0			
40	7	21,984	-52.4			
30						
20						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

APRIL 1956

JACKSON, MISS.
(1003 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	101	15.9	76	196	2.5
1,000	30	127			175	3.9
950	30	569	15.5	60	192	8.5
900	30	1,021	12.5	60	216	10.5
850	30	1,499	10.5	54	235	12.8
800	30	2,002	8.5	45	257	14.4
750	30	2,538	6.0	37	263	19.4
700	30	3,095	2.6	36	267	21.2
650	30	3,692	- 1.4	37	273	23.3
600	30	4,322	- 5.5	35	272	28.4
550	30	5,000	-10.0	35	276	32.4
500	30	5,726	-15.1	39	281	36.9
450	30	6,526	-20.0		279	43.1
400	30	7,378	-26.1		277	46.8
350	30	8,330	-33.1		277	54.0
300	30	9,396	-41.0		276	62.7
250	30	10,612	-49.7		273	71.3
200	28	12,043	-58.5		276	75.6
175	27	12,877	-60.8		280	73.4
150	27	13,831	-62.8		281	61.0
125	27	14,947	-65.2		283	49.9
100	25	16,299	-66.2		283	35.0
80	24	17,653	-66.3			
60	19	19,406	-61.8		296	9.5
50	18	20,541	-58.8		277	4.7
40	16	21,952	-55.5			
30	13	23,792	-52.8			
20	7	26,414	-49.8			

JACKSONVILLE, FLA.
(1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	17.3	73	218	3.9
1,000	30	139	18.6	62	209	5.2
950	30	578	16.3	54	250	7.0
900	30	1,036	13.4	54	263	8.9
850	30	1,514	10.6	52	268	12.0
800	30	2,017	8.3	45	269	15.3
750	30	2,551	5.8	36	272	16.7
700	30	3,109	2.6	36	273	18.8
650	30	3,707	- .8	32	274	22.7
600	30	4,339	- 4.4		276	27.0
550	30	5,017	- 8.8		278	30.9
500	29	5,752	-13.6		279	36.1
450	29	6,551	-19.1		282	41.2
400	29	7,411	-25.3	36	282	51.3
350	28	8,364	-32.6	37	282	56.7
300	27	9,434	-40.9		284	61.4
250	26	10,643	-50.2		281	70.5
200	24	12,066	-59.3		285	79.3
175	24	12,897	-61.5		284	77.5
150	24	13,847	-63.5		284	66.0
125	24	14,959	-65.9		279	55.4
100	23	16,309	-68.0		284	42.0
80	18	17,643	-67.0		284	27.8
60	16	19,394	-64.0		251	7.8
50	15	20,528	-59.4		259	3.7
40	14	21,926	-57.8		95	4.5
30	10	23,737	-55.0			
20						

KING SALMON, ALASKA
(1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	0.4	77	119	2.3
1,000	30	51			73	3.9
950	30	457	- 2.5	69	130	6.0
900	30	887	- 4.1	67	148	6.8
850	30	1,336	- 6.4	66	157	8.9
800	30	1,808	- 8.8	63	168	9.7
750	30	2,309	-11.6	62	172	10.1
700	30	2,830	-14.6	60	175	10.5
650	30	3,393	-17.6	56	171	11.5
600	30	3,983	-21.2	55	179	11.7
550	30	4,622	-25.4	51	190	11.7
500	30	5,305	-30.2	50	191	11.8
450	30	6,053	-35.4		190	13.8
400	30	6,857	-41.0		200	15.2
350	30	7,752	-46.5		207	16.3
300	30	8,763	-50.6		209	19.6
250	30	9,944	-51.8		211	18.6
200	30	11,391	-50.0		212	15.3
175	30	12,264	-48.9		208	14.4
150	29	13,269	-48.4		211	12.6
125	29	14,469	-47.6		218	10.3
100	28	15,945	-47.4		197	9.9
80	27	17,412	-47.5		184	6.8
60	26	19,316	-47.8		153	5.2
50	25	20,520	-48.3		123	6.6
40	24	21,991	-49.1		97	6.8
30	14	23,882	-49.9		108	12.0
20						

KOTZEBUE, ALASKA
(1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	- 7.0	75	107	1.7
1,000	30	104			157	3.1
950	30	511	- 7.0	63	133	5.4
900	30	925	- 8.1	60	135	6.6
850	30	1,368	- 9.6	60	158	4.3
800	30	1,834	-11.7	60	162	6.6
750	30	2,329	-14.1	59	163	5.6
700	30	2,847	-17.0	57	163	7.6
650	30	3,408	-20.0	50	165	6.6
600	30	3,990	-23.5	49	166	8.2
550	30	4,625	-27.4	46	167	10.3
500	30	5,301	-31.5	43	176	10.9
450	30	6,045	-36.1		191	10.3
400	30	6,849	-41.0		189	8.7
350	30	7,745	-46.2		190	11.8
300	30	8,757	-50.3		177	8.0
250	30	9,942	-50.8		174	8.9
200	29	11,388	-49.5		164	9.3
175	29	12,263	-48.3		171	9.7
150	29	13,280	-47.0		167	7.0
125	29	14,487	-46.3		158	8.4
100	28	15,972	-46.0		176	9.5
80	28	17,455	-45.8		165	10.3
60	28	19,368	-46.0		137	6.4
50	28	20,576	-46.9		112	6.8
40	27	22,047	-47.3		125	9.1
30	21	23,945	-48.2		115	12.0
20	8	26,581	-48.9			

LAKE CHARLES, LA.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	19.3	77	179	3.9
1,000	30	126	19.2	73	158	5.6
950	30	568	17.0	67	153	4.9
900	30	1,026	14.9	62	215	3.9
850	30	1,508	12.4	56	222	4.7
800	30	2,014	10.3	49	240	7.2
750	30	2,554	7.9	37	270	8.7
700	30	3,115	5.0	32	284	11.1
650	30	3,716	1.5	30	286	17.9
600	30	4,355	- 2.9	31	282	23.5
550	30	5,031	- 7.8		283	27.0
500	28	5,779	-12.7	31	283	37.1
450	26	6,578	-18.1		275	46.6
400	26	7,443	-24.6	37	274	48.2
350	26	8,401	-31.5		275	52.8
300	26	9,475	-39.4			
250	26	10,699	-48.3			
200	26	12,135	-57.8			
175	25	12,968	-61.6			
150	25	13,916	-63.7			
125	24	15,024	-65.8			
100	24	16,367	-68.5			
80	23	17,705	-67.5			
60	21	19,457	-63.4			
50	20	20,584	-60.3			
40	20	21,984	-57.0			
30	16	23,829	-53.9			
20	7	26,462	-50.5			

LANDER, WYO.
(826 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,696	5.7	58	208	0.4
1,000	30	94				
950	30	529				
900	30	980				
850	30	1,457				
800	30	1,957	5.5	49	48	2.7
750	30	2,483	1.5	52	5	2.7
700	30	3,032	- 2.4	54	291	4.9
650	30	3,614	- 6.7	55	292	8.0
600	30	4,236	-11.3	56	293	11.7
550	30	4,893	-16.0	51	283	13.6
500	30	5,608	-21.3	44	276	14.6
450	30	6,377	-27.3	43	283	13.6
400	30	7,212	-33.7	41	273	14.2
350	30	8,134	-41.2		277	15.0
300	30	9,162	-49.4		273	15.9
250	29	10,337	-56.1		304	15.9
200	28	11,749	-58.8		308	10.7
175	26	12,585	-56.3		278	11.5
150	26	13,565	-55.6		289	12.8
125	26	14,726	-56.3		297	11.8
100	25	16,140	-57.1		288	9.5
80	25	17,553	-57.0		286	8.2
60	21	19,380	-56.5		348	2.9
50	21	20,538	-55.9		53	4.3
40	17	21,962	-54.4			
30	11	23,797	-53.4			
20						

LAS VEGAS, NEV.
(934 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	660	19.5	21	255	5.4
1,000	30	62				
950	30	512				
900	30	975	18.5	23	248	7.2
850	30	1,460	14.2	26	240	6.6
800	30	1,967	9.7	30	226	6.4
750	30	2,504	4.8	37	219	6.2
700	30	3,056	- .3	44	207	5.1
650	30	3,646	- 5.2	45	199	3.9
600	30	4,267	- 9.5	39	232	4.1
550	30	4,934	-14.3	39	244	6.8
500	30	5,650	-19.4		249	8.7
450	29	6,433	-25.4		267	9.7
400	28	7,264	-31.7		269	13.4
350	28	8,195	-38.7		272	16.9
300	27	9,238	-45.7		266	23.9
250	27	10,433	-52.5		269	31.3
200	25	11,860	-56.5		265	36.9
175	25	12,706	-56.8		262	39.4
150	25	13,680	-57.7		265	37.9
125	24	14,830	-59.1		266	31.7
100	20	16,236	-60.6		268	22.5
80	20	17,623	-60.7		263	15.3
60	18	19,415	-59.4		255	6.4
50	16	20,556	-58.5		237	1.0
40	15	21,967	-56.3		61	5.8
30	10	23,813	-55.2			
20						

LITTLE ROCK, ARK.
(1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	79	16.0	62	209	1.7
1,000	30	111			188	1.6
950	30	550	15.0	51	217	4.9
900	30	1,002	12.0	56	246	10.1
850	30	1,478	9.1	55	237	14.4
800	30	1,979	6.9	48	260	13.8
750	30	2,515	4.8	42	267	18.3
700	30	3,067	2.0	37	261	21.4
650	30	3,662	- 2.0	38	269	24.1
600	30	4,292	- 6.1	39	274	28.7
550	30	4,968	-11.0	38	271	27.4
500	30	5,691	-16.2	35	274	31.5
450	30	6,482	-21.9		273	35.4
400	30	7,331	-28.0		277	39.6
350	30	8,275	-35.0		279	40.8
300	30	9,332	-42.9		278	46.6
250	30	10,538	-50.8		282	47.8
200	30	11,966	-57.4		284	45.3
175	30	12,805	-58.8			
150	29	13,767	-60.8			
125	27	14,888	-62.1			
100	25	16,263	-63.0			
80	22	17,636	-63.3			
60	21	19,414	-60.2			
50	21	20,556	-58.1			
40	18	21,967	-55.8			
30	10	23,815	-53.5			
20						

MC GRATH, ALASKA
(997 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	2.5	54	315	1.0
1,000	30	75			297	1.7
950	30	485	- .3	52	48	1.4
900	30	917	- 3.6	56	124	4.7
850	30	1,366	- 6.6	61	145	6.8
800	30	1,837	- 9.0	60	152	6.8
750	30	2,341	-12.0	60	169	6.4
700	30	2,859	-15.0	55	176	6.0
650	30	3,421	-18.6	53	179	8.4
600	30	4,007	-22.3	52	178	5.6
550	29	4,650	-26.1	49	175	7.6
500	29	5,329	-30.2	45	174	3.9
450	29	6,079	-35.0		12	.6
400	29	6,884	-40.2		273	6.4
350	29	7,784	-45.7		240	6.6
300	29	8,797	-50.5			
250	29	9,979	-51.7			
200	29	11,428	-49.9			
175	29	12,302	-48.7			
150	29	13,315	-47.9			
125	29	14,518	-47.2			
100	29	15,995	-46.7			
80	27	17,460	-46.6			
60	27	19,364	-47.1			
50	25	20,570	-47.7			
40	23	22,031	-48.1			
30	19	23,918	-48.6			
20	8	26,611	-47.9			

MEDFORD, ORE.
(968 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	401	13.6	54	323	5.4
1,000	30	123				
950	30	561	14.0	49	322	6.8
900	30	1,010	10.7	52	327	7.4
850	30	1,484	6.9	59	313	5.8
800	30	1,979	3.1	65	297	3.9
750	30	2,504	- .2	58	306	3.9
700	30	3,048	- 3.4	54	296	3.1
650	30	3,636	- 6.9	48	311	4.9
600	29	4,252	-10.3	40	321	6.6
550	29	4,923	-14.5	38	323	7.8
500	29	5,633	-19.3	33	320	11.8
450	29	6,417	-25.1		308	9.1
400	29	7,252	-31.3		335	9.5
350	29	8,183	-38.6		358	6.2
300	29	9,224	-46.5		314	13.4
250	28	10,413	-54.6		285	13.8
200	26	11,810	-58.6		242	3.7
175	26	12,651	-57.6		257	9.5
150	25	13,626	-56.2		269	10.5
125	25	14,781	-57.3		257	6.4
100	25	16,189	-57.9		255	9.7
80	25	17,597	-57.7		298	6.2
60	24	19,419	-56.6			
50	22	20,581	-55.8			
40	20	22,004	-55.2			
30	18	23,841	-54.6			
20						

MIAMI, FLA.
(1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	22.2	74	131	3.7
1,000	30	143	21.6	71	129	5.2
950	30	587	18.6	68	120	4.3
900	30	1,049	16.2	55	175	2.1
850	30	1,533	13.6	48	245	2.1
800	30	2,041	11.6	37	283	3.3
750	30	2,582	8.7	34	278	7.2
700	30	3,146	5.8	33	275	11.3
650	30	3,754	2.3	32	274	11.3
600	30	4,390	- 1.6	33	280	15.9
550	30	5,078	- 5.9	34	284	21.0
500	30	5,818	-10.5	34	284	27.0
450	30	6,628	-16.1	31	290	26.4
400	30	7,497	-22.5	33	292	30.9
350	30	8,463	-29.7	32	292	32.1
300	30	9,543	-37.8		293	37.7
250	30	10,774	-47.1		303	45.3
200	30	12,217	-57.5		314	48.4
175	30	13,051	-61.9		304	43.9
150	28	13,993	-66.8			
125	22	15,083	-69.2			
100	18	16,402	-70.9			
80	14	17,724	-71.7			
60	11	19,441	-66.9			
50	11	20,553	-62.2			
40	10	21,949	-58.0			
30	9	23,782	-54.2			
20						

MIDLAND, TEXAS
(913 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	871	18.0	35	177	2.7
1,000	30	80				
950	30	527				
900	30	994	18.5	33	171	5.1
850	30	1,482	15.5	32	198	7.4
800	30	1,993	12.3	30	232	8.9
750	30	2,535	8.6	31	245	12.6
700	30	3,096	4.4	34	255	15.2
650	30	3,696	- .1	34	259	20.6
600	30	4,330	- 4.9	34	259	25.3
550	30	5,006	-10.0	30	259	28.2
500	30	5,734	-15.5		260	32.4
450	30	6,526	-21.4		266	38.5
400	30	7,378	-27.6		266	42.2
350	30	8,324	-34.2		265	46.2
300	30	9,385	-41.8		268	57.5
250	30	10,597	-50.1		268	66.6
200	30	12,030	-56.7			
175	28	12,871	-59.1			
150	28	13,831	-61.6			
125	26	14,954	-64.3			
100	25	16,309	-66.8			
80	25	17,662	-64.9			
60	23	19,424	-61.5			
50	23	20,558	-59.5			
40	20	21,967	-56.4			
30	15	23,818	-53.9			
20						

NANTUCKET, MASS.
(1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	14	4.5	88	271	2.5
1,000	29	101			269	4.7
950	29	522	5.5	63	288	8.4
900	29	961	3.4	63	300	11.8
850	29	1,422	.3	63	297	13.8
800	29	1,907	- 1.9	59	290	14.8
750	29	2,421	- 4.1	51	284	16.9
700	29	2,960	- 7.1	47	279	20.4
650	28	3,539	-10.4	47	282	20.6
600	28	4,146	-14.0	44	283	23.9
550	28	4,805	-18.1	42	279	25.3
500	28	5,507	-22.6	42	275	28.0
450	28	6,277	-28.1	41	275	30.1
400	28	7,107	-33.8		258	32.6
350	28	8,029	-40.3			
300	28	9,065	-46.2			
250	28	10,259	-52.0			
200	28	11,696	-53.5			
175	28	12,552	-54.4			
150	28	13,535	-55.8			
125	25	14,691	-55.4			
100	24	16,112	-56.7			
80	24	17,525	-56.9			
60	23	19,350	-56.2			
50	21	20,511	-55.4			
40	20	21,934	-55.0			
30	19	23,777	-54.7			
20	12	26,374	-51.8			

NASHVILLE, TENN.
(994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	177	14.1	63	244	1.4
1,000	30	121				
950	30	556	13.1	50	252	6.8
900	30	1,008	10.0	53	264	10.7
850	30	1,481	6.8	56	265	13.6
800	30	1,976	4.1	52	273	17.7
750	30	2,506	1.4	50	278	20.0
700	30	3,051	- 1.6	51	282	23.3
650	30	3,642	- 5.2	47	281	25.6
600	29	4,258	- 9.2	44	286	26.6
550	29	4,928	-13.2	43	286	31.1
500	29	5,645	-17.9	41	290	32.6
450	29	6,432	-23.5		286	33.8
400	29	7,275	-29.6		287	36.7
350	29	8,213	-36.6		288	32.4
300	29	9,263	-44.2			
250	29	10,463	-52.0			
200	29	11,886	-57.9			
175	28	12,731	-58.1			
150	28	13,698	-59.6			
125	27	14,830	-60.8			
100	26	16,207	-62.1			
80	25	17,583	-61.6			
60	21	19,368	-59.1			
50	20	20,517	-56.9			
40	20	21,935	-55.1			
30	18	23,776	-53.9			
20	9	26,427	-50.7			

NOME, ALASKA
(1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	- 5.3	81	74	6.4
1,000	30	89			90	7.0
950	30	492	- 6.8	69	111	7.6
900	30	911	- 7.8	65	134	7.0
850	30	1,354	- 9.1	60	132	5.8
800	30	1,821	-11.2	58	144	4.7
750	30	2,320	-13.5	53	157	5.6
700	30	2,836	-16.4	51	170	6.8
650	30	3,399	-19.6	51	184	6.2
600	30	3,980	-22.8	49	184	6.4
550	30	4,618	-26.5	45	184	8.4
500	30	5,296	-30.6	42	206	8.4
450	30	6,043	-35.3		190	10.1
400	30	6,848	-40.5		199	7.2
350	30	7,746	-46.2		219	4.1
300	29	8,745	-50.6		207	7.0
250	28	9,920	-50.6		178	5.2
200	28	11,378	-48.9		168	4.7
175	28	12,257	-47.5		162	6.8
150	28	13,276	-46.6		163	5.8
125	28	14,487	-45.8		147	7.8
100	28	15,972	-45.8		140	7.8
80	27	17,450	-45.7		154	9.5
60	25	19,361	-46.6		137	9.3
50	24	20,572	-47.2		126	9.5
40	22	22,041	-48.0		118	13.2
30	20	23,938	-49.2		118	12.0
20	12	26,590	-48.7			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

NORFOLK, VA. (101[illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	12.2	71	223	3.7
1,000	30	117	12.3	65	225	7.8
950	30	548	10.8	57	219	14.8
900	30	995	8.0	55	264	19.0
850	30	1,464	4.7	57	277	20.0
800	30	1,956	1.8	55	282	19.4
750	30	2,482	- 1.0	51	278	22.5
700	30	3,022	- 3.9	51	278	24.1
650	30	3,608	- 7.0	49	276	28.4
600	30	4,224	-10.2	42	274	30.9
550	29	4,891	-14.1	36	274	34.8
500	29	5,604	-19.0	35	275	38.7
450	29	6,388	-24.8		275	42.0
400	28	7,218	-31.1		280	41.2
350	28	8,149	-38.5		279	43.1
300	27	9,188	-46.3		281	48.2
250	27	10,378	-52.9		277	56.3
200	27	11,803	-56.3		278	61.3
175	27	12,649	-56.9		278	56.3
150	25	13,621	-58.0		277	51.5
125	25	14,766	-59.3		275	42.9
100	20	16,169	-60.2		280	28.0
80	17	17,565	-60.7		271	19.4
60	14	19,378	-58.4		269	8.7
50	12	20,523	-56.5		317	.8
40	11	21,940	-56.0		77	2.9
30	6	23,764	-55.8			
20						

NORTH PLATTE, NEBR. (915 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	848	5.8	61	51	3.7
1,000	30	110				
950	30	541				
900	30	984	6.6	51	52	4.3
850	30	1,451	4.9	46	8	3.3
800	30	1,945	3.0	46	313	6.8
750	30	2,472	.6	42	301	12.0
700	30	3,017	- 2.4	40	297	15.5
650	30	3,605	- 5.7	42	289	16.5
600	30	4,224	-10.0	45	284	18.5
550	30	4,886	-14.4	44	284	19.2
500	30	5,604	-19.6	40	288	21.0
450	30	6,381	-25.6	39	285	23.7
400	30	7,220	-32.5	38	281	24.9
350	30	8,145	-40.0		282	27.8
300	30	9,179	-47.8		282	28.7
250	29	10,358	-55.1		271	33.2
200	29	11,769	-57.5		273	35.4
175	28	12,615	-56.9		268	38.5
150	28	13,592	-55.9		274	35.7
125	28	14,750	-56.8		275	25.4
100	27	16,158	-57.7			
80	25	17,565	-57.8			
60	25	19,379	-57.3			
50	22	20,537	-56.1			
40	20	21,963	-54.9			
30	14	23,809	-53.6			
20						

OAKLAND, CALIF. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	12.3	72	[illegible]	6.8
1,000	30	127	11.6	70	273	7.2
950	30	559	11.0	61	278	7.4
900	30	1,006	9.6	53	282	5.4
850	30	1,478	7.4	49	301	3.5
800	30	1,974	4.4	47	309	2.1
750	30	2,506	1.4	40	323	2.5
700	30	3,049	- 2.1	41	326	4.1
650	30	3,638	- 5.9	35	334	4.9
600	30	4,256	-10.1	35	329	7.4
550	30	4,918	-14.7	31	329	9.9
500	30	5,635	-19.8		326	12.6
450	30	6,415	-25.8		323	14.8
400	30	7,250	-32.1		321	17.3
350	30	8,180	-38.6		321	20.8
300	30	9,222	-45.8		317	22.3
250	30	10,415	-52.9		312	25.1
200	28	11,839	-58.5		298	26.6
175	28	12,679	-58.2		293	26.2
150	28	13,650	-57.8		288	25.3
125	28	14,797	-59.0		287	22.0
100	26	16,192	-60.6		285	15.9
80	25	17,585	-60.4		293	10.9
60	24	19,384	-58.6		310	3.9
50	22	20,529	-57.7		24	2.1
40	19	21,942	-56.3		58	6.8
30	16	23,770	-54.6		49	6.2
20	6	26,332	-53.9			

OKLAHOMA CITY, OKLA. (967 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	391	14.2	55	86	1.9
1,000	30	103				
950	30	540	15.6	46	58	3.3
900	30	997	13.2	47	87	2.9
850	30	1,476	10.8	48	341	.6
800	30	1,979	8.4	44	279	8.4
750	30	2,517	5.6	38	280	15.0
700	30	3,070	2.0	34	[illegible]	21.2
650	30	3,665	- 2.1	35	277	26.2
600	30	4,293	- 6.7	36	274	25.6
550	30	4,966	-11.5	34	279	29.5
500	30	5,689	-16.8		278	33.6
450	30	6,480	-22.6		289	37.5
400	30	7,324	-28.8		281	43.1
350	30	8,265	-35.8		273	48.8
300	30	9,318	-43.5		274	53.2
250	30	10,522	-51.0		275	55.6
200	30	11,952	-57.2		269	54.2
175	30	12,792	-59.0			
150	29	13,750	-60.8			
125	28	14,878	-61.2			
100	27	16,255	-62.5			
80	27	17,632	-62.0			
60	24	19,412	-60.4			
50	22	20,556	-58.6			
40	21	21,962	-56.8			
30	17	23,792	-55.0			
20	11	26,385	-51.8			

OMAHA, NEBR. (965 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	403	8.7	48	[illegible]	2.5
1,000	30	106				
950	30	538	9.1	43	359	5.2
900	30	980	6.6	47	333	3.5
850	30	1,446	3.3	50	309	6.4
800	30	1,935	.7	50	299	10.3
750	30	2,457	- 1.2	[illegible]	301	14.8
700	30	2,999	- 4.0	38	301	18.5
650	30	3,585	- 7.0	[illegible]	298	22.1
600	29	4,197	-11.1	36	298	28.0
550	29	4,860	-15.5	35	296	29.1
500	29	5,572	-20.6		294	27.8
450	29	6,354	-26.0		291	33.6
400	29	7,186	-31.6		288	39.0
350	28	8,114	-38.7		289	43.1
300	28	9,155	-46.1		286	44.7
250	28	10,347	-53.0		282	49.1
200	28	11,771	-56.2		271	46.0
175	26	12,617	-55.5		275	44.5
150	26	13,598	-55.7		278	41.6
125	25	14,755	-55.9		283	41.0
100	24	16,169	-57.3		280	28.4
80	23	17,578	-57.0		293	18.8
60	20	19,394	-56.1		299	13.6
50	18	20,568	-54.9		307	9.5
40	12	21,983	-54.3		58	3.1
30	9	23,812	-53.8			
20						

PHOENIX, ARIZ. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	341	22.1	26	254	4.1
1,000	30	78				
950	30	526	22.5	21	260	7.0
900	30	993	18.8	22	254	9.5
850	30	1,479	14.7	25	250	8.7
800	30	1,987	10.3	29	240	7.0
750	30	2,524	5.6	34	209	5.8
700	30	3,078	.8	36	200	6.4
650	30	3,673	- 3.7	37	209	8.4
600	30	4,295	- 8.2	32	226	10.5
550	30	4,968	-12.5		241	16.7
500	30	5,685	-17.6		249	24.3
450	30	6,471	-23.3		253	24.7
400	30	7,316	-29.6		259	26.8
350	30	8,255	-36.4		271	30.5
300	30	9,307	-43.6		272	36.3
250	30	10,512	-51.1		276	38.1
200	30	11,942	-56.5		278	41.8
175	30	12,786	-57.8		275	42.5
150	30	13,755	-59.0		277	38.1
125	29	14,892	-61.6		278	34.0
100	26	16,266	-63.2		276	27.4
80	26	17,637	-63.1		278	20.0
60	22	19,410	-60.9			
50	22	20,548	-59.2			
40	20	21,956	-57.1			
30	9	23,790	-54.4			
20						

PITTSBURGH, PA. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	353	7.8	69	256	3.7
1,000	30	108				
950	30	535	7.2	64	257	6.0
900	30	975	4.5	66	262	13.4
850	30	1,438	1.6	66	261	19.2
800	30	1,924	- 1.4	68	268	20.0
750	30	2,442	- 3.8	57	268	22.7
700	30	2,978	- 6.4	50	269	24.1
650	30	3,559	- 9.9	49	275	27.8
600	30	4,167	-13.5	49	278	28.7
550	29	4,827	-17.7	43	278	32.6
500	29	5,530	-22.8	45	279	34.2
450	29	6,301	-28.3	14	280	38.5
400	29	7,129	-34.5	45	279	41.8
350	29	8,049	-41.1		277	47.6
300	29	9,079	-48.1		276	54.4
250	28	10,272	-54.9		277	58.7
200	28	11,689	-56.8		277	58.3
175	25	12,539	-56.2		280	50.9
150	25	13,516	-56.6		282	41.6
125	24	14,677	-57.2		279	33.8
100	23	16,087	-58.3		278	24.5
80	22	17,494	-57.8		283	13.4
60	21	19,310	-57.4		291	6.8
50	20	20,460	-56.6		316	2.1
40	16	21,871	-55.6		336	2.1
30	7	23,682	-55.4			
20						

PORTLAND, ME. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	20	2.8	86	259	2.1
1,000	30	102	3.9	74	270	3.5
950	30	523	2.8	64	273	4.3
900	30	955	.8	66	304	3.5
850	30	1,411	- 1.9	66	277	7.4
800	30	1,891	- 4.1	65	266	10.9
750	30	2,402	- 6.3	56	272	14.2
700	30	2,934	- 9.1	55	271	15.7
650	29	3,509	-12.4	55	266	17.1
600	29	4,110	-15.8	50	269	19.0
550	29	4,764	-19.6	48	267	23.7
500	29	5,462	-24.4	47	267	26.6
450	29	6,222	-29.9	42	269	29.1
400	29	7,051	-35.7		268	33.0
350	27	7,962	-41.9		267	35.9
300	27	8,990	-48.1		268	42.5
250	27	10,180	-50.8		266	44.9
200	25	11,601	-50.6		263	39.6
175	25	12,469	-51.3		267	34.4
150	25	13,467	-52.1		255	28.9
125	21	14,633	-52.7		257	24.3
100	21	16,067	-54.2		250	17.7
80	19	17,494	-54.9		245	9.9
60	16	19,345	-54.3		227	2.7
50	16	20,512	-54.4		167	1.9
40	12	21,952	-54.3		103	4.5
30	6	23,796	-53.8			
20						

RAPID CITY, S. DAK. (904 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	966	3.9	62	10	3.9
1,000	30	131				
950	30	554				
900	30	1,000			32	3.3
850	30	1,464	2.8	51	344	8.4
800	30	1,952	.1	55	329	8.7
750	30	2,469	- 2.4	57	316	11.7
700	30	3,011	- 5.1	53	308	13.8
650	30	3,588	- 8.2	57	307	17.5
600	30	4,207	-11.8	53	295	21.2
550	30	4,864	-16.3	48	297	23.7
500	30	5,577	-21.4	44	291	27.0
450	29	6,351	-27.2	40	292	27.8
400	29	7,179	-33.7	40	293	31.7
350	29	8,100	-41.1		289	34.2
300	29	9,129	-49.2		284	36.9
250	29	10,302	-56.5		287	37.3
200	27	11,702	-57.8		282	32.8
175	25	12,550	-55.6		281	31.5
150	23	13,530	-54.9		284	28.4
125	17	14,698	-55.1		282	26.2
100	5	16,110	-54.7			
80						
60						
50						
40						
30						
20						

ST. CLOUD, MINN. (975 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	316	2.9	65	327	4.9
1,000	30	111				
950	30	532	3.1	58	340	8.5
900	30	966	.9	56	345	8.7
850	30	1,423	- 1.5	55	332	8.7
800	30	1,904	- 3.3	50	321	11.1
750	30	2,417	- 5.9	52	317	11.8
700	30	2,951	- 8.2	52	310	12.8
650	30	3,525	-11.4	52	292	16.9
600	30	4,133	-15.0	51	289	18.8
550	30	4,787	-19.3	50	289	22.7
500	30	5,487	-24.0	49	288	26.0
450	30	6,255	-29.8	45	284	22.1
400	30	7,076	-36.0		284	26.8
350	30	7,991	-42.6		283	25.3
300	30	9,017	-49.1		284	28.0
250	30	10,199	-53.9		278	34.0
200	29	11,629	-54.2		287	29.7
175	28	12,483	-53.0		298	26.0
150	28	13,477	-53.0		292	24.9
125	28	14,651	-53.6		295	20.6
100	28	16,085	-54.3		301	13.6
80	25	17,514	-54.1		284	8.7
60	23	19,360	-54.2		290	3.9
50	21	20,531	-53.8		70	2.9
40	19	21,966	-53.3		66	4.1
30	16	23,817	-52.8		117	6.8
20	7	26,449	-50.8			

ST. PAUL IS., ALASKA (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	10	- 3.6	84	41	2.9
1,000	29	54			324	1.0
950	29	461	- 6.3	80	239	1.7
900	29	879	- 7.1	74	222	4.9
850	29	1,324	- 8.5	72	204	4.5
800	29	1,792	-10.5	68	193	7.4
750	29	2,297	-12.7	60	199	7.6
700	29	2,810	-15.5	57	203	7.8
650	29	3,376	-18.7	58	209	6.4
600	29	3,959	-22.0	55	247	5.6
550	29	4,601	-26.0	53	246	9.1
500	29	5,278	-30.4	52	253	8.0
450	29	6,034	-35.0		239	10.5
400	29	6,833	-39.9		237	11.7
350	29	7,733	-45.7		219	14.6
300	29	8,749	-49.9		233	14.8
250	29	9,935	-51.2		229	18.6
200	28	11,391	-50.4		241	18.5
175	28	12,263	-49.8		240	19.2
150	28	13,271	-49.0		246	17.3
125	28	14,469	-48.2		226	15.7
100	25	15,948	-47.9		227	11.8
80	24	17,424	-47.3		212	11.8
60	23	19,317	-47.6		180	9.7
50	22	20,514	-48.1		170	7.8
40	21	21,990	-49.1		140	8.0
30	14	23,862	-49.9			
20						

SAN ANTONIO, TEX. (985 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	243	20.5	55	115	4.5
1,000	30	109				
950	30	553	19.2	57	114	9.9
900	30	1,016	16.7	59	137	8.5
850	30	1,502	14.6	51	179	8.4
800	30	2,012	12.9	38	217	8.9
750	30	2,555	10.1	30	246	12.2
700	30	3,120	6.4	31	254	16.9
650	30	3,723	2.4	31	258	22.9
600	29	4,364	- 2.4		266	27.8
550	29	5,041	- 7.4		271	32.1
500	29	5,783	-12.6		271	40.2
450	29	6,585	-18.3		274	45.1
400	29	7,446	-24.7		267	48.4
350	29	8,404	-31.6		266	50.5
300	29	9,477	-39.2		264	53.8
250	28	10,705	-48.2			
200	27	12,144	-57.5			
175	25	12,974	-61.8			
150	25	13,920	-64.6			
125	24	15,027	-67.4			
100	20	16,360	-68.4			
80	18	17,688	-69.4			
60	14	19,420	-63.6			
50	14	20,545	-60.7			
40	12	21,932	-57.2			
30	10	23,750	-54.2			
20						

SAN JUAN, P. R. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	24.0	82		
1,000	30	146	23.5	76		
950	30	596	20.7	76		
900	30	1,059	17.8	75		
850	30	1,546	14.9	75		
800	30	2,058	12.8	63		
750	30	2,604	10.1	56		
700	30	3,169	7.1	48		
650	30	3,784	4.3	33		
600	30	4,423	1.1			
550	30	5,119	- 2.6			
500	29	5,867	- 7.3			
450	29	6,688	-13.1			
400	28	7,566	-19.9			
350	28	8,541	-27.4			
300	28	9,631	-35.7			
250	28	10,872	-45.1			
200	28	12,326	-55.8			
175	28	13,164	-61.8			
150	28	14,102	-68.2			
125	28	15,182	-72.4			
100	26	16,474	-77.1			
80	24	17,747	-77.1			
60	22	19,428	-68.8			
50	22	20,533	-63.5			
40	20	21,913	-58.2			
30	16	23,726	-54.3			
20	6	26,353	-50.0			

SANTA MARIA, CALIF. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	74	10.5	80	299	5.4
1,000	30	130	10.3	80	303	5.1
950	30	562	10.8	71	321	6.0
900	30	1,008	10.5	58	333	6.2
850	30	1,482	7.9	56	352	5.2
800	30	1,979	4.7	50	339	4.7
750	30	2,508	1.7	42	308	4.5
700	30	3,055	- 1.7	38	303	6.0
650	30	3,644	- 5.0	33	304	8.7
600	30	4,266	- 8.8	28	303	10.5
550	30	4,935	-13.5		304	13.6
500	30	5,652	-18.5		313	15.9
450	30	6,434	-23.9		319	16.1
400	30	7,278	-30.0		315	16.3
350	29	8,222	-36.6		308	19.2
300	29	9,272	-44.2		308	18.5
250	29	10,472	-52.1		290	26.8
200	29	11,898	-56.6		281	33.2
175	29	12,743	-57.3		277	35.5
150	29	13,717	-57.2		279	34.4
125	29	14,863	-59.5		281	25.8
100	29	16,253	-61.1		280	19.6
80	28	17,638	-61.1		285	12.0
60	28	19,431	-59.3		307	4.7
50	28	20,576	-57.8		46	2.7
40	25	21,991	-56.1		62	6.0
30	16	23,839	-54.1		51	8.0
20						

*** SANTA MONICA, CALIF. (1010 MB.)**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	14	38	14.6		249	4.3
1,000	14	124	14.1		248	4.7
950	14	559	14.1		276	5.6
900	14	1,013	12.4		286	3.9
850	14	1,491	10.6		278	3.1
800	14	1,994	8.0		300	2.3
750	14	2,528	4.6		308	2.9
700	14	3,081	.6		302	3.9
650	14	3,671	- 3.6		277	5.4
600	14	4,300	- 7.2		277	8.0
550	14	4,971	-11.6		277	12.8
500	14	5,697	-16.5		281	15.5
450	14	6,482	-22.4		287	21.0
400	14	7,334	-28.7		286	24.7
350	14	8,276	-35.8		285	26.2
300	14	9,329	-43.4		288	33.0
250	14	10,532	-51.7		281	38.1
200	14	11,952	-59.2		277	45.6
175	14	12,786	-60.3		270	39.2
150	12	13,748	-61.6		271	35.4
125	11	14,873	-61.5		270	34.4
100	8	16,257	-62.4			
80						
60						
50						
40						
30						
20						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

* Observations began April 17.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

S. STE. MARIE, MICH.
(986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	1.1	76	321	1.9
1,000--	30	101				
950----	30	521	1.1	57	323	2.9
900----	30	949	- .3	58	305	3.9
850----	30	1,404	- 2.7	60	306	7.2
800----	30	1,882	- 5.5	60	303	10.5
750----	30	2,391	- 7.6	61	298	11.5
700----	30	2,921	-10.3	58	292	13.8
650----	29	3,491	-13.8	53	301	15.9
600----	29	4,092	-17.6	51	303	19.8
550----	28	4,739	-21.5	46	302	23.5
500----	27	5,438	-26.1	45	304	27.0
450----	27	6,199	-31.3	43	303	29.3
400----	26	7,023	-36.8		304	32.4
350----	26	7,934	-43.1		301	36.5
300----	21	8,978	-49.0		289	48.8
250----	15	10,189	-52.7		282	51.7
200----	15	11,627	-53.0		275	49.5
175----	11	12,522	-52.1		273	51.7
150----	11	13,518	-52.5			
125----	10	14,684	-53.5			
100----	8	16,108	-53.2			
80-----	7	17,550	-54.1			
60-----	6	19,398	-53.9			
50-----	5	20,563	-54.1			
40-----						
30-----						
20-----						

SHREVEPORT, LA.
(1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	76	17.2	69	186	3.7
1,000--	30	116			187	3.3
950----	30	557	15.9	57	198	8.2
900----	30	1,011	12.7	58	207	9.7
850----	30	1,489	10.8	45	219	11.7
800----	30	1,992	9.2	35	233	12.4
750----	30	2,530	6.7	35	259	15.9
700----	30	3,088	3.2	36	258	17.9
650----	30	3,686	- .8	34	264	20.2
600----	30	4,318	- 5.4	34	264	24.7
550----	29	4,997	-10.0		268	28.9
500----	28	5,723	-15.2		268	34.0
450----	28	6,520	-20.7		267	39.0
400----	28	7,372	-26.8		267	43.9
350----	28	8,320	-33.7		264	52.8
300----	27	9,384	-41.5		263	61.0
250----	27	10,596	-50.0		263	73.8
200----	26	12,022	-58.1		264	81.0
175----	25	12,857	-61.2		263	75.4
150----	24	13,807	-63.1		267	69.3
125----	22	14,925	-64.5		269	51.9
100----	20	16,280	-66.1		267	37.1
80-----	16	17,631	-66.1		273	26.4
60-----	12	19,384	-62.2		278	8.0
50-----	10	20,513	-59.3			
40-----	8	21,926	-56.9			
30-----	8	23,759	-54.0			
20-----						

SPOKANE, WASH.
(930 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	722	11.2	48	239	1.6
1,000--	30	105				
950----	30	542				
900----	30	992	10.4	43	255	2.3
850----	30	1,464	6.5	48	268	4.3
800----	30	1,958	2.3	54	267	5.4
750----	30	2,484	- 1.4	57	265	6.6
700----	30	3,022	- 5.3	58	266	7.0
650----	30	3,604	- 9.0	51	276	8.0
600----	30	4,214	-12.8	39	279	9.5
550----	30	4,876	-17.3	36	285	10.9
500----	30	5,579	-22.3	38	287	13.2
450----	30	6,354	-27.8	37	293	14.2
400----	30	7,181	-34.1	39	294	15.0
350----	30	8,100	-41.3		304	16.3
300----	30	9,129	-48.9		306	20.4
250----	30	10,306	-55.8		304	24.3
200----	30	11,711	-58.7		300	21.8
175----	30	12,554	-56.4		298	20.4
150----	29	13,531	-55.8		297	18.5
125----	29	14,692	-55.8		296	16.7
100----	29	16,111	-55.6		299	12.4
80-----	27	17,532	-55.3		302	8.9
60-----	24	19,378	-54.0		335	3.7
50-----	22	20,551	-53.9		20	2.1
40-----	16	21,972	-53.7		83	3.7
30-----	10	23,832	-53.2		84	4.9
20-----	7	26,437	-50.2			

TAMPA, FLA.
(1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	18.6	77	280	1.0
1,000--	30	147	19.8	69	239	1.4
950----	30	591	18.3	55	246	3.5
900----	30	1,050	15.9	55	243	4.5
850----	30	1,533	13.0	52	238	6.6
800----	30	2,041	10.5	42	250	8.7
750----	30	2,584	7.7	36	264	11.7
700----	30	3,141	5.0	34	272	14.8
650----	30	3,748	1.6	35	277	18.1
600----	30	4,383	- 2.2	32	281	22.1
550----	30	5,070	- 6.1	30	283	25.8
500----	30	5,808	-11.0		281	31.1
450----	30	6,621	-16.5	35	281	36.7
400----	30	7,484	-23.0	34	280	35.4
350----	30	8,448	-30.3		290	37.3
300----	30	9,526	-38.6		297	37.9
250----	30	10,754	-47.8		297	50.9
200----	30	12,194	-57.8		306	55.0
175----	30	13,026	-62.0			
150----	28	13,973	-65.2			
125----	24	15,075	-67.5			
100----	23	16,405	-70.0			
80-----	22	17,730	-70.2			
60-----	20	19,458	-65.0			
50-----	19	20,580	-61.2			
40-----	19	21,974	-57.9			
30-----	14	23,812	-54.1			
20-----	8	26,426	-50.0			

TATOOSH ISLAND, WASH.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	31	8.0	83	246	3.5
1,000--	30	144	7.6	77	264	4.5
950----	30	567	7.5	63	275	4.9
900----	30	1,010	5.5	60	260	2.7
850----	30	1,475	2.6	59	247	3.7
800----	30	1,963	.1	45	253	5.1
750----	30	2,485	- 2.3	40	258	6.4
700----	30	3,023	- 5.0	43	262	8.7
650----	30	3,605	- 8.2	43	277	10.1
600----	30	4,220	-11.9	41	282	12.2
550----	30	4,880	-16.4	39	280	15.7
500----	30	5,591	-21.1	39	282	19.0
450----	30	6,362	-27.1	40	278	21.6
400----	30	7,197	-33.4	39	291	24.9
350----	29	8,118	-40.4		297	30.5
300----	29	9,151	-47.8		300	26.6
250----	29	10,332	-55.4		293	30.7
200----	28	11,736	-58.7		295	28.4
175----	27	12,573	-55.7		302	24.1
150----	27	13,556	-54.8		298	20.6
125----	26	14,721	-55.4		293	15.3
100----	26	16,141	-55.8		300	13.4
80-----	26	17,564	-54.8		324	8.4
60-----	23	19,403	-54.1		9	4.9
50-----	22	20,570	-53.6		39	3.7
40-----	21	22,011	-53.3		80	7.0
30-----	19	23,865	-53.1		74	10.7
20-----	9	26,485	-52.2			

TOPEKA, KANSAS
(982 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	270	12.0	52	263	1.0
1,000--	30	112				
950----	30	545	11.5	47	334	2.5
900----	30	993	8.0	51	279	3.5
850----	30	1,462	5.4	53	273	8.2
800----	30	1,955	2.9	50	278	12.2
750----	30	2,484	.6	43	285	15.7
700----	30	3,026	- 2.4	39	291	18.8
650----	30	3,614	- 5.8	35	292	21.4
600----	30	4,233	- 9.6	35	286	24.3
550----	30	4,900	-14.1	33	288	28.0
500----	30	5,615	-19.1		281	32.8
450----	30	6,401	-24.8		286	36.1
400----	30	7,235	-31.2		285	39.6
350----	30	8,167	-38.4		280	45.5
300----	30	9,209	-45.8		275	49.7
250----	30	10,402	-53.1		272	53.8
200----	30	11,822	-57.4		271	61.2
175----	30	12,665	-57.4		271	56.5
150----	30	13,637	-57.7		273	53.0
125----	29	14,789	-58.4		270	45.5
100----	29	16,187	-59.3		274	35.2
80-----	26	17,580	-59.7		281	27.2
60-----	23	19,389	-57.9		289	12.0
50-----	19	20,544	-56.5		316	6.4
40-----	16	21,956	-55.3		61	3.5
30-----	13	23,795	-54.2		101	2.7
20-----						
15-----						

TUCSON, ARIZONA
(922 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	781	20.1	23	293	5.6
1,000--	30	73				
950----	30	522				
900----	30	991	19.5	21	287	9.7
850----	30	1,478	15.4	24	269	9.7
800----	30	1,987	10.9	29	244	9.5
750----	30	2,523	6.3	33	223	10.1
700----	30	3,082	1.5	37	204	11.7
650----	30	3,675	- 3.3	37	208	13.4
600----	30	4,302	- 7.3	30	222	15.9
550----	30	4,974	-11.6		238	19.8
500----	30	5,697	-16.5		248	28.0
450----	29	6,481	-22.1		253	36.1
400----	28	7,331	-28.6		253	42.2
350----	28	8,274	-35.0		255	51.9
300----	28	9,331	-42.8		255	58.5
250----	28	10,539	-50.6		255	65.1
200----	28	11,970	-56.6		256	72.1
175----	28	12,813	-58.4		258	69.7
150----	26	13,784	-60.0		260	57.9
125----	26	14,915	-62.5		261	48.0
100----	24	16,277	-65.2		262	37.7
80-----	23	17,638	-64.3		255	25.8
60-----	21	19,402	-62.7		261	10.9
50-----	19	20,532	-60.1		282	4.1
40-----	16	21,932	-57.3		80	8.0
30-----	10	23,770	-54.7		75	4.9
20-----						
15-----						

WASHINGTON, D. C.
(1003 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	88	10.4	60	228	2.1
1,000--	30	110			206	3.7
950----	30	540	9.2	58	265	9.9
900----	30	982	6.5	59	274	15.3
850----	30	1,449	3.7	61	273	18.6
800----	30	1,938	.9	59	279	18.5
750----	30	2,459	- 1.9	55	279	21.4
700----	30	3,000	- 4.9	49	281	23.1
650----	30	3,582	- 7.9	49	282	25.1
600----	29	4,195	-11.4	48	281	27.2
550----	29	4,858	-15.7	41	281	30.1
500----	29	5,568	-20.6	41	282	32.1
450----	29	6,344	-26.0	41	285	38.9
400----	29	7,181	-31.9	44	283	43.3
350----	29	8,110	-38.8		280	47.4
300----	29	9,152	-46.2		282	50.9
250----	29	10,343	-52.9		284	53.4
200----	28	11,772	-55.3		283	50.5
175----	28	12,623	-56.4		281	48.8
150----	28	13,598	-57.0		287	44.1
125----	28	14,750	-57.5		283	35.2
100----	28	16,156	-58.5		283	28.0
80-----	27	17,563	-58.2		281	14.0
60-----	25	19,379	-56.9		276	4.5
50-----	24	20,540	-55.6		282	3.7
40-----	22	21,966	-54.8		285	1.9
30-----	20	23,813	-53.2		352	1.4
20-----	10	26,410	-50.3			
15-----	6	28,252	-48.2			

YAKUTAT, ALASKA
(1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	12	3.4	74	118	1.0
1,000--	30	117	3.3	73	130	1.6
950----	30	534	1.2	72	135	5.6
900----	30	965	- 1.4	72	155	6.2
850----	30	1,418	- 4.0	74	155	7.6
800----	30	1,894	- 7.0	69	186	5.6
750----	30	2,399	-10.0	68	205	5.8
700----	30	2,923	-12.9	62	238	7.0
650----	30	3,492	-16.2	53	239	9.3
600----	29	4,083	-19.9	49	240	11.8
550----	29	4,727	-24.0	48	240	15.2
500----	29	5,413	-28.7	45	244	18.3
450----	29	6,168	-33.6	42	256	22.0
400----	29	6,975	-39.5		256	28.7
350----	29	7,877	-45.3		272	25.1
300----	29	8,892	-50.2		268	22.3
250----	29	10,073	-52.7		275	12.0
200----	29	11,516	-51.5		264	12.6
175----	28	12,392	-50.7		270	10.9
150----	28	13,397	-49.9		273	8.0
125----	28	14,591	-48.9		251	7.8
100----	28	16,055	-49.2		328	2.9
80-----	28	17,519	-48.7		352	3.1
60-----	26	19,407	-49.1		53	4.7
50-----	25	20,601	-49.6		60	11.8
40-----	23	22,058	-50.4			
30-----	16	23,924	-50.2			
20-----						
15-----						

YUMA, ARIZONA
(998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	105	23.7	22	249	6.2
1,000--	30	82				
950----	30	527	20.4	25	252	8.2
900----	30	990	16.6	28	254	7.4
850----	30	1,473	12.6	32	251	6.2
800----	30	1,977	8.3	37	240	5.6
750----	30	2,511	4.0	39	247	5.4
700----	30	3,063	.1	37	254	6.8
650----	30	3,657	- 4.0	34	246	7.0
600----	30	4,279	- 8.0		253	10.5
550----	30	4,953	-12.4		256	16.1
500----	30	5,671	-17.6		261	22.9
450----	30	6,455	-23.6		256	23.3
400----	30	7,301	-29.5		261	29.5
350----	30	8,240	-36.0		255	35.9
300----	29	9,291	-43.2		260	43.7
250----	29	10,497	-50.8		258	49.7
200----	26	11,924	-56.8		263	54.2
175----	26	12,766	-58.2		254	53.6
150----	21	13,720	-59.2		265	48.4
125----	14	14,869	-61.2		263	37.1
100----	6	16,238	-62.9			
80-----						
60-----						
50-----						
40-----						
30-----						
20-----						
15-----						

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20 *Air Force data for December 1955

Standard pressure surface (mb.)	DENVER, COLO. (831 MB.)						RANTOUL, ILL. (995 MB.)						OGDEN, UTAH (854 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,661	- 0.7	49			31	227	- 2.7	68			30	1,450	1.7	61		
1,000--	31	151					31	182	- 5.7				30	154				
950----	31	575					31	595	- 2.7	68			30	580				
900----	31	1,018					31	1,018	- 2.8	60			30	1,021				
850----	31	1,480					31	1,471	- 3.0	57			30	1,484				
800----	31	1,969	3.1	44			31	1,950	- 3.5	55			30	1,974	1.5	59		
750----	31	2,496	.6	44			31	2,468	- 4.9	54			30	2,494	- 1.9	61		
700----	31	3,041	- 2.7	44			31	3,000	- 7.1	47			30	3,035	- 5.7	65		
650----	31	3,626	- 6.8	44			31	3,582	- 9.8	42			30	3,614	- 9.4	68		
600----	31	4,244	-11.1	43			31	4,188	-13.0	42			30	4,226	-13.1	67		
550----	31	4,908	-15.3	38			31	4,851	-17.0	42			30	4,885	-17.2	63		
500----	31	5,621	-19.8	40			31	5,555	-21.7	44			30	5,591	-21.6	58		
450----	31	6,400	-25.2	41			31	6,330	-27.2				30	6,367	-26.9	57		
400----	31	7,240	-31.2	39			31	7,161	-33.2				30	7,198	-32.4	55		
350----	31	8,172	-38.3				31	8,086	-39.9				30	8,126	-39.2			
300----	31	9,214	-46.0				31	9,123	-46.9				30	9,165	-46.1			
250----	30	10,395	-53.7				31	10,313	-52.9				30	10,358	-52.6			
200----	30	11,812	-58.1				31	11,738	-56.7				30	11,787	-55.8			
175----	30	12,649	-59.7				31	12,583	-57.5				30	12,633	-57.5			
150----	30	13,609	-61.0				31	13,554	-58.9				30	13,602	-59.2			
125----	30	14,736	-62.4				31	14,694	-60.4				29	14,738	-60.1			
100----	30	16,111	-63.1				31	16,083	-61.2				24	16,136	-60.1			
80-----	28	17,480	-63.5				25	17,475	-60.4				16	17,523	-59.6			
60-----	27	19,251	-61.8				14	19,260	-60.0				14	19,324	-58.9			
50-----	26	20,374	-60.8				9	20,422	-56.9				9	20,459	-58.4			
40-----	23	21,768	-60.0				6	21,840	-55.6				6	21,835	-57.2			
30-----	18	23,561	-59.6															
20-----	11	26,129	-55.3															

* January 1956 data for the above Air Force stations will be included in the May 1956 issue of this publication.

Note: All observations scheduled at 0300, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature and humidity data may be missing for one or more pressure surfaces of some observations. The temperature values are based on 15 or more observations at the surface or 5 observations at a standard pressure level. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by radiosondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees centigrade and relative humidity in percent.

RAWIN DATA

Average monthly resultant winds

Table 22 *Air Force Data for December 1955

Altitude (meters) m.s.l.	Denver, Colo. (1,661 m.)			Ogden, Utah (1,450 m.)			Rantoul, Ill. (227 m.)		
	No. of observations	Direction	Speed	No. of observations	Direction	Speed	No. of observations	Direction	Speed
Surface----------	31	164	4.5	31	122	3.9	31	230	1.4
500--------------	--	---	----	--	---	----	30	239	5.6
1,000------------	--	---	----	--	---	----	30	252	10.1
1,500------------	--	---	----	29	137	4.7	30	267	14.0
2,000------------	30	244	6.6	29	202	12.6	30	274	18.3
2,500------------	30	272	9.3	28	228	14.0	30	282	22.9
3,000------------	30	271	14.0	28	239	18.5	30	282	27.6
4,000------------	31	280	23.7	29	260	23.3	31	282	35.7
5,000------------	31	282	33.2	31	274	32.4	31	283	42.5
6,000------------	31	282	37.9	31	274	39.0	31	282	47.8
8,000------------	31	279	52.8	31	271	51.9	31	283	60.0
10,000-----------	31	277	66.8	31	278	70.1	31	279	72.3
12,000-----------	31	278	63.1	30	275	62.5	31	279	77.1
14,000-----------	30	282	56.5	29	273	59.1	31	279	61.8
16,000-----------	30	284	38.3	21	282	35.9	31	282	48.4
18,000-----------	28	275	29.7	16	299	19.8	19	285	40.2
20,000-----------	25	316	15.5	12	298	10.7	10	284	30.3
22,000-----------	22	300	16.7						
24,000-----------	14	280	21.0						
26,000-----------	10	291	29.1						

* January 1956 data for the above Air Force stations will be included in the May 1956 issue of this publication

These free-air resultant winds are based on rawin observations made near 0300 G.C.T.; directions in degrees from north (N = 360°, E = 90°, S = 180°, W = 270°); speeds in knots.

Note: Resultants prepared from rawins at high altitudes are biased toward lower wind speeds. Values appearing in this table should therefore be used with caution when the number of observations missing is greater than three. See note following Table 22 in the January 1950 issue of the CLIMATOLOGICAL DATA, National Summary.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. APRIL 1956

MADISON, WIS.

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Apr. 5	----	----	----	----	----	SK1.20	SK0.98	SK0.83	SK0.73
6	----	K0.59	K0.76	K0.95	----	----	----	----	----
9	K0.89	K.96	K1.12	----	----	----	----	----	----
11	SK.78	SK.88	SK1.03	SK1.21	----	----	----	----	----
13	SK.96	SK1.04	SK1.15	SK1.33	SK1.47	----	----	----	----
14	----	----	----	----	SK1.47	----	----	----	----
18	SK.84	SK.96	SK1.06	SK1.26	SK1.49	SK1.24	SK1.08	SK.98	SK.89
20	MK.90	SK1.00	SK1.11	SK1.27	SK1.44	----	----	----	----
24	SK.70	SK.81	SK.92	SK1.16	----	----	----	----	----
Averages	.85	.89	1.02	1.20	1.47	1.22	1.03	.91	.81

TABLE MOUNTAIN, CALIF.

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	5.0	4.0	3.0	2.0	*0.75	2.0	3.0	4.0	5.0
Apr. 3	----	----	----	1.40	----	----	----	----	----
4	----	----	----	1.38	----	----	----	----	----
5	0.98	1.07	1.20	1.37	----	----	----	----	----
6	----	----	----	1.42	----	----	----	----	----
7	----	----	----	1.43	----	----	----	----	----
8	----	----	----	1.38	----	----	----	----	----
15	----	----	----	1.40	----	----	----	----	----
18	----	----	----	1.30	----	----	----	----	----
20	----	----	----	1.30	----	----	----	----	----
28	----	----	----	1.39	----	----	----	----	----
29	----	----	----	1.39	----	----	----	----	----
30	----	----	----	1.38	----	----	----	----	----
Averages	.98	1.07	1.20	1.38	----	----	----	----	----

BLUE HILL, MASS

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
Apr. 2	----	----	----	1.24	----	----	----	----	----
5	----	----	----	1.12	1.35	1.15	----	----	----
6	----	----	1.07	1.20	1.25	----	----	----	----
10	----	----	1.06	1.19	1.35	1.19	0.99	0.86	0.72
12	0.76	0.87	1.04	1.20	1.34	1.17	1.03	.87	.76
13	----	----	.97	1.12	----	----	----	----	----
17	----	----	----	1.02	----	----	----	----	----
20	----	----	.92	1.09	----	----	----	----	----
21	----	----	----	1.11	----	----	----	----	----
25	----	----	----	1.11	1.32	----	----	----	----
Averages	(.76)	(.87)	1.01	1.14	1.32	1.17	(1.01)	(.86)	(.74)

WASHINGTON, D. C. (WBCO)

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Apr. 10	----	----	----	----	SK1.28	----	----	----	----
12	----	----	----	1.15	SK1.36	----	----	----	----
Averages	----	----	----	1.15	1.32	----	----	----	----

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0

Recorder Inoperable

* Extrapolated
K Smoke
MK Moderate smoke
SK Slight smoke

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	140	122	87	67	89	83	46	91	81	118	114	119	91	105	103	104	96	29	103	102	130	96	112	95
Date	22	23	24	25	26	27	28		29	30	1	2	3	4	5									
Langleys	111	51	138	116	53	144	123	105	65	115	124	137	130	116	130	116								

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	371	393	80	61	275	355	54	227	86	169	393	306	373	364	373	295	165	23	337	331	313	361	386	274
Date	22	23	24	25	26	27	28		29	30	1	2	3	4	5									
Langleys	343	43	271	379	56	367	204	238	57	129	306	295	126	354	403	239								

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	---	437	101	70	426	398	37	(245)	58	125	407	349	388	336	308	282	139	27	204	229	249	247	334	204
Date	22	23	24	25	26	27	28		29	30	1	2	3	4	5									
Langleys	313	38	226	341	43	294	305	223	61	174	318	218	183	262	322	220								

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	457	236	101	76	413	268	62	230	96	151	436	366	403	301	329	297	113	28	165	140	266	135	354	172
Date	22	23	24	25	26	27	28		29	30	1	2	3	4	5									
Langleys	373	105	198	403	50	231	301	237	62	352	430	182	218	176	402	260								

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys	132	151	135	110	101	82	105	117	125	204	94	227	92	158	177	154	209	44	202	171	184	165	137	159
Date	22	23	24	25	26	27	28		29	30	1	2	3	4	5									
Langleys	166	83	282	133	100	181	187	162	105	223	143	273	268	227	104	192								

Note: Langley is the unit used to denote one gram calorie per square centimeter.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

APRIL 1956

1956	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area
Apr. 1	381	614	117	618	352	467	352	---	---	584	483	558	414	653
Apr. 2	374	397	64	607	268	521	361	---	147	517	561	468	433	628
Apr. 3	360	672	405	273	247	411	377	---	355	139	541	77	424	---
Apr. 4	380	690	291	628	370	494	385	---	---	113	506	93	374	644
Apr. 5	368	709	280	287	514	52	402	---	---	587	511	569	535	615
Apr. 6	356	722	42	520	403	383	407	---	---	570	598	530	518	656
Apr. 7	403	718	151	595	469	686	381	---	625	108	238	82	420	648
Average	375	646	193	504	375	431	381	---	---	374	491	340	446	641
Apr. 8	423	641	149	526	551	692	407	434	621	128	608	---	321	654
Apr. 9	418	718	418	630	616	582	(428)	377	605	235	606	---	---	---
Apr. 10	316	593	511	207	495	169	284	521	544	634	450	598	---	637
Apr. 11	348	685	547	240	358	220	270	449	592	570	176	546	---	614
Apr. 12	347	727	139	555	350	613	379	533	622	641	581	640	---	629
Apr. 13	399	724	70	664	521	650	(480)	429	566	569	414	546	---	549
Apr. 14	250	668	465	672	117	449	444	453	635	521	591	506	---	---
Average	357	679	328	499	430	482	(385)	457	598	471	489	567	---	617
Apr. 15	425	717	564	576	240	160	440	629	376	230	604	251	---	640
Apr. 16	444	676	190	697	580	699	371	514	468	46	276	75	---	588
Apr. 17	378	509	35	699	663	713	396	592	668	376	602	387	---	470
Apr. 18	275	643	460	714	643	712	522	641	493	404	614	369	---	590
Apr. 19	459	623	234	714	616	688	462	518	640	463	646	447	166	448
Apr. 20	424	690	304	693	568	705	(301)	604	586	453	644	398	84	632
Apr. 21	463	746	538	717	376	694	366	639	512	667	633	601	102	485
Average	410	658	332	687	527	625	(408)	591	535	377	574	361	---	550
Apr. 22	370	771	234	572	610	248	371	637	675	616	517	590	293	613
Apr. 23	321	604	567	676	602	683	522	469	493	95	457	102	162	---
Apr. 24	519	601	636	88	526	393	501	412	400	461	474	462	617	---
Apr. 25	527	755	626	163	673	626	466	356	510	685	457	649	692	---
Apr. 26	562	758	593	383	399	643	425	310	536	104	103	100	293	629
Apr. 27	564	654	177	708	336	558	345	529	390	530	543	487	---	621
Apr. 28	581	746	474	669	334	509	380	316	474	529	452	490	---	619
Average	492	698	472	465	497	523	430	433	497	431	429	412	412	621
Apr. 29	581	786	592	489	682	594	503	282	337	110	704	71	---	615
Apr. 30	574	686	551	658	723	544	426	188	352	382	612	442	---	609
May 1	549	724	683	678	394	435	447	338	104	672	621	649	629	595
May 2	587	789	688	674	632	420	361	362	278	459	---	457	462	504
May 3	555	751	606	508	330	263	418	494	641	336	522	349	716	577
May 4	256	576	679	223	343	440	505	501	312	534	251	499	686	579
May 5	(560)	731	610	218	468	501	490	377	103	727	538	712	650	619
Average	(523)	721	630	493	510	457	450	363	304	460	541	454	629	585

1956	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.	Dodge City, Kans.	* E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.	Gainesville, Fla.
Apr. 1	567	563	486	315	573	539	609	540	665	507	211	88	420	661
Apr. 2	598	433	222	142	551	505	553	515	480	465	225	284	630	593
Apr. 3	225	408	237	555	590	575	121	419	700	669	305	634	655	599
Apr. 4	106	341	312	526	567	650	240	301	691	667	285	(619)	583	592
Apr. 5	402	234	672	563	590	660	606	566	707	650	227	204	585	480
Apr. 6	574	394	348	443	599	665	566	611	700	673	372	624	589	575
Apr. 7	632	478	150	593	583	669	117	413	667	632	---	637	602	462
Average	444	407	347	448	579	609	401	481	659	609	271	(441)	580	567
Apr. 8	463	662	212	613	594	506	146	524	703	(696)	418	501	618	670
Apr. 9	311	621	722	125	565	557	199	308	691	691	---	510	554	444
Apr. 10	397	210	489	64	373	722	614	635	622	523	306	625	307	86
Apr. 11	291	134	668	636	54	---	571	640	712	470	391	668	158	528
Apr. 12	---	672	675	548	293	(651)	638	592	(714)	365	413	636	323	745
Apr. 13	637	513	721	627	95	660	583	567	533	447	427	605	278	710
Apr. 14	416	628	670	593	128	543	586	609	718	535	468	488	163	697
Average	419	491	594	458	300	(607)	477	553	(670)	(532)	404	576	343	554
Apr. 15	513	461	144	436	200	698	402	626	730	---	422	634	492	573
Apr. 16	42	615	284	233	597	701	130	113	677	668	471	686	475	602
Apr. 17	390	697	380	699	639	289	619	132	374	358	345	498	637	768
Apr. 18	369	702	72	700	625	716	606	578	677	354	275	200	649	802
Apr. 19	172	688	630	689	611	680	349	516	553	610	364	359	645	783
Apr. 20	453	684	587	687	597	703	587	560	411	723	503	684	643	749
Apr. 21	481	698	325	669	457	711	649	614	699	664	513	261	549	758
Average	346	649	346	588	532	643	478	448	589	563	413	475	584	719
Apr. 22	137	(531)	405	329	626	505	611	705	696	564	512	655	651	528
Apr. 23	372	663	672	142	544	559	102	434	720	536	516	519	568	695
Apr. 24	505	412	494	661	511	348	263	446	638	280	519	608	591	241
Apr. 25	702	400	481	100	297	668	658	661	743	572	454	650	547	83
Apr. 26	500	561	303	569	206	650	109	766	753	612	527	(688)	173	517
Apr. 27	463	618	329	574	508	679	510	680	740	215	540	612	525	553
Apr. 28	56	461	308	213	640	242	441	535	762	570	551	217	701	655
Average	391	(521)	428	370	476	521	385	604	722	478	517	(564)	537	467
Apr. 29	522	490	311	170	659	706	159	268	709	583	557	(402)	688	519
Apr. 30	400	513	283	481	667	419	471	303	687	514	524	391	686	535
May 1	726	285	739	410	612	162	584	516	784	766	431	121	663	---
May 2	716	443	162	450	573	636	471	528	751	691	186	201	652	---
May 3	60	400	778	628	345	---	364	744	761	596	309	650	663	---
May 4	302	408	362	525	622	160	576	779	692	452	491	641	418	---
May 5	585	184	505	646	378	669	636	512	734	542	550	(702)	(527)	---
Average	473	389	449	473	551	459	466	522	731	592	436	(444)	(614)	---

1956	Glasgow, Mont.	Grandby, Colo.	Grand Junction,Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.
Apr. 1	102	521	369	180	520	545	693	431	557	643	332	---
Apr. 2	221	223	289	602	234	531	558	82	737	147	---	---
Apr. 3	545	389	421	586	444	406	554	331	756	173	261	---
Apr. 4	273	604	719	499	449	443	450	334	729	277	---	---
Apr. 5	284	526	521	352	308	40	337	569	727	593	324	---
Apr. 6	560	704	723	569	62	359	191	475	742	507	589	---
Apr. 7	524	669	738	178	517	713	575	312	745	52	591	---
Average	358	519	540	424	362	434	480	362	713	342	420	---
Apr. 8	498	412	512	545	525	628	(643)	142	740	85	286	---
Apr. 9	559	690	749	615	625	138	739	292	676	669	142	---
Apr. 10	451	683	648	213	430	186	606	95	749	676	671	---
Apr. 11	603	405	371	618	68	633	280	551	636	638	690	---
Apr. 12	515	617	621	643	641	678	376	509	147	637	649	---
Apr. 13	556	597	695	631	536	543	---	639	786	302	648	---
Apr. 14	575	226	365	632	474	720	717	387	744	629	396	571
Average	537	519	566	557	471	504	(560)	374	640	519	497	---
Apr. 15	611	643	716	646	178	216	650	410	727	218	536	667
Apr. 16	639	339	693	444	315	674	256	338	594	177	691	380
Apr. 17	641	447	337	659	515	739	764	319	720	287	---	268
Apr. 18	633	558	496	674	489	728	737	256	491	263	562	692
Apr. 19	637	733	---	---	613	747	710	596	704	293	672	707
Apr. 20	631	743	---	649	646	726	(360)	673	782	319	614	686
Apr. 21	322	596	---	449	685	714	766	624	670	358	338	668
Average	588	580	561	587	491	649	(606)	459	670	274	569	581
Apr. 22	619	526	670	99	410	291	639	222	788	504	159	393
Apr. 23	673	294	401	475	700	694	753	451	760	263	230	200
Apr. 24	512	338	322	332	408	351	503	675	780	494	357	527
Apr. 25	437	456	558	561	564	619	664	101	784	649	424	591
Apr. 26	411	475	414	381	577	683	625	343	727	63	551	441
Apr. 27	258	397	352	265	467	627	700	521	820	257	393	404
Apr. 28	(347)	310	399	253	452	591	768	266	821	304	599	447
Average	(465)	411	445	338	511	551	665	368	783	362	388	429
Apr. 29	256	370	495	314	531	604	732	221	817	234	549	499
Apr. 30	399	662	537	259	401	567	613	132	809	187	575	669
May 1	306	648	738	334	230	626	(242)	554	780	701	---	718
May 2	275	500	679	296	108	518	638	---	771	185	---	476
May 3	---	443	566	404	301	296	403	659	711	594	517	552
May 4	---	409	554	107	473	430	545	583	838	95	421	557
May 5	179	399	658	551	589	405	610	637	827	638	604	634
Average	283	490	604	323	376	492	(540)	465	793	376	533	586

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

* East Lansing, omitted from proper sequence, will be found in last column.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.- Continued

APRIL 1956

1956	Las Vegas, Nev.	Lemont, Ill.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.
Apr. 1------	335	447	109	595	423	365	333	669	321	419	593	606
Apr. 2------	587	239	205	575	524	257	328	628	443	168	498	251
Apr. 3------	690	331	200	588	560	356	547	597	661	201	107	176
Apr. 4------	679	214	564	639	627	333	424	624	649	616	184	104
Apr. 5------	673	577	193	605	597	569	589	636	429	374	610	611
Apr. 6------	690	562	565	584	629	451	547	636	605	230	550	425
Apr. 7------	694	212	631	491	618	194	585	565	662	537	124	50
Average-------	621	369	353	583	568	361	479	622	539	364	381	318
Apr. 8------	687	56	591	382	421	115	575	671	668	658	84	151
Apr. 9------	700	496	64	271	370	606	---	151	611	487	(274)	644
Apr. 10------	680	300	38	400	249	560	165	87	659	104	653	609
Apr. 11------	593	596	449	351	280	597	439	589	650	507	573	398
Apr. 12------	342	337	568	123	89	413	481	694	634	511	671	624
Apr. 13------	630	674	552	182	187	620	540	648	557	601	(594)	446
Apr. 14------	687	569	258	545	385	613	333	518	623	496	671	629
Average-------	617	433	360	322	283	503	422	480	629	481	(503)	500
Apr. 15------	721	399	195	470	482	202	194	656	481	104	611	168
Apr. 16------	535	249	659	370	319	318	596	499	698	386	84	414
Apr. 17------	716	208	560	342	157	232	593	639	366	685	652	405
Apr. 18------	613	672	657	277	131	673	618	671	168	613	651	411
Apr. 19------	713	619	578	646	623	671	597	666	96	611	448	324
Apr. 20------	713	708	669	659	648	656	518	593	462	700	628	141
Apr. 21------	717	598	637	575	522	472	483	661	322	688	694	616
Average-------	675	493	565	477	412	461	514	626	370	541	538	354
Apr. 22------	728	262	642	496	631	363	516	582	698	397	658	618
Apr. 23------	706	157	363	131	221	318	637	498	702	691	115	208
Apr. 24------	624	709	443	482	411	672	349	605	688	445	299	309
Apr. 25------	599	110	518	492	524	86	299	395	702	598	703	607
Apr. 26------	745	385	605	439	292	355	431	417	---	627	93	66
Apr. 27------	694	349	471	641	515	155	268	565	---	648	576	491
Apr. 28------	754	169	319	644	493	130	684	583	---	597	362	398
Average-------	693	306	480	475	441	297	455	521	698	572	401	385
Apr. 29------	757	105	113	522	489	77	629	475	680	284	163	566
Apr. 30------	749	477	97	337	263	666	654	557	177	68	504	696
May 1------	744	629	71	599	368	364	641	667	---	402	690	621
May 2------	720	354	158	310	576	346	315	475	711	226	488	383
May 3------	576	586	580	291	458	166	256	596	---	312	414	350
May 4------	764	680	648	382	277	614	369	537	---	626	542	506
May 5------	756	73	580	638	665	43	465	521	---	629	745	643
Average-------	724	415	321	440	442	325	476	547	---	364	507	538

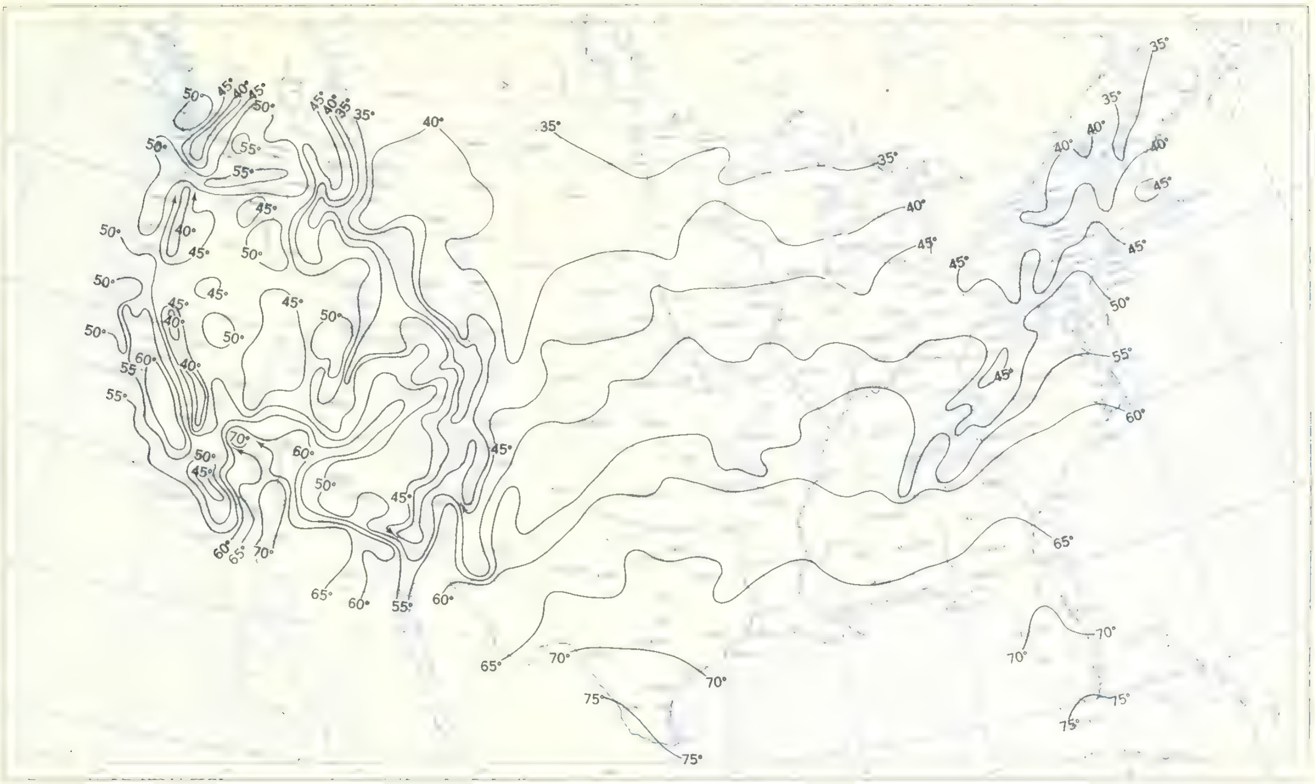
1956	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Rapid City, S. Dak.	Richland, Wash.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.
Apr. 1------	551	308	619	415	608	(215)	458	408	393	213	(530)	543
Apr. 2------	---	270	311	401	603	(61)	427	566	274	299	635	223
Apr. 3------	284	655	122	602	174	(444)	457	589	389	585	659	113
Apr. 4------	661	649	150	652	74	(568)	489	672	566	473	665	(76)
Apr. 5------	301	326	601	666	618	(223)	491	666	512	454	632	484
Apr. 6------	608	577	590	668	630	(593)	442	653	122	592	664	466
Apr. 7------	534	660	395	655	404	(635)	424	644	318	541	665	79
Average-------	490	492	398	580	445	(391)	455	600	368	451	(636)	(283)
Apr. 8------	715	568	414	651	127	(266)	545	537	305	180	581	579
Apr. 9------	651	89	552	681	399	(665)	541	461	606	384	283	578
Apr. 10------	264	355	483	646	661	(632)	503	214	625	689	475	654
Apr. 11------	268	647	618	650	574	(208)	414	261	419	676	132	652
Apr. 12------	590	606	604	693	678	(654)	544	178	641	650	453	249
Apr. 13------	674	605	269	596	601	(651)	556	369	521	574	697	(659)
Apr. 14------	451	542	530	530	468	678	559	302	429	436	348	103
Average-------	516	488	496	635	501	(536)	523	332	506	512	424	(496)
Apr. 15------	23	609	57	695	273	683	472	629	386	693	643	84
Apr. 16------	459	669	---	412	52	664	599	419	257	713	693	242
Apr. 17------	656	462	332	609	338	715	567	181	523	633	660	239
Apr. 18------	665	685	219	693	561	707	571	178	628	541	559	617
Apr. 19------	717	531	294	558	364	712	515	673	650	170	697	590
Apr. 20------	763	682	412	666	571	654	571	692	579	252	690	675
Apr. 21------	755	667	362	652	466	566	496	652	610	127	548	583
Average-------	577	615	279	612	375	672	542	489	519	447	641	433
Apr. 22------	311	632	283	688	448	668	548	698	335	423	692	323
Apr. 23------	761	481	355	685	88	662	562	568	466	91	162	642
Apr. 24------	456	297	478	634	615	484	581	661	637	547	639	586
Apr. 25------	655	642	648	693	702	663	561	605	233	553	535	374
Apr. 26------	617	683	333	676	195	323	499	334	190	621	299	427
Apr. 27------	687	666	382	725	538	120	577	398	139	181	633	78
Apr. 28------	655	259	249	727	305	438	529	691	341	449	(732)	538
Average-------	592	523	390	690	413	480	551	565	335	409	(527)	424
Apr. 29------	530	728	139	741	429	796	657	652	527	547	739	161
Apr. 30------	375	483	665	659	608	452	622	425	379	404	288	706
May 1------	469	266	(680)	733	728	413	---	554	479	251	638	735
May 2------	227	186	341	730	553	615	---	653	231	323	326	169
May 3------	155	605	190	671	192	292	---	505	221	671	680	391
May 4------	653	567	223	726	369	164	---	615	642	678	598	765
May 5------	645	709	531	737	693	377	---	639	328	684	692	728
Average-------	436	506	(396)	714	510	444	---	578	401	508	566	522

1956	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash.	Seattle, Wash. (U. of W.)	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island, Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba	E. Lansing, Mich.
Apr. 1------	637	504	568	297	227	398	497	357	627	515	671	622	696	586	213	365
Apr. 2------	352	315	289	229	222	557	191	249	612	56	432	378	711	330	282	259
Apr. 3------	108	81	117	180	139	470	169	613	594	100	647	120	(715)	221	503	259
Apr. 4------	145	49	350	429	70	446	412	616	559	309	679	---	556	409	610	53
Apr. 5------	643	492	591	449	433	466	621	467	563	534	690	650	709	601	402	524
Apr. 6------	502	453	281	347	332	522	307	513	611	493	683	501	610	137	301	518
Apr. 7------	48	177	45	289	265	313	25	583	277	16	680	---	(684)	70	627	151
Average-------	348	296	320	317	241	453	317	485	549	289	640	454	(669)	336	420	304
Apr. 8------	155	128	161	461	397	484	197	427	492	448	680	143	---	356	324	242
Apr. 9------	432	483	629	581	559	585	646	56	265	622	667	517	667	617	633	501
Apr. 10------	656	368	600	481	469	562	652	277	48	561	673	---	511	582	512	531
Apr. 11------	432	517	264	644	375	513	507	626	399	610	727	---	674	157	436	636
Apr. 12------	709	545	621	642	479	557	661	573	696	544	714	685	666	642	657	482
Apr. 13------	559	268	497	529	515	577	641	609	660	228	713	---	635	497	602	621
Apr. 14------	679	462	575	132	74	600	632	559	690	415	452	666	---	550	555	296
Average-------	518	396	478	496	410	554	562	447	464	490	661	503	631	486	531	473
Apr. 15------	171	162	128	510	298	---	190	564	569	180	723	---	684	137	509	346
Apr. 16------	133	210	325	449	540	316	252	652	295	208	481	---	672	311	307	216
Apr. 17------	530	270	459	596	576	352	372	497	689	206	606	(438)	718	352	686	277
Apr. 18------	619	294	405	575	581	595	359	671	702	208	645	571	699	336	(572)	191
Apr. 19------	369	349	411	566	537	557	524	570	689	399	588	---	687	492	616	507
Apr. 20------	304	365	259	507	496	568	524	660	740	327	696	---	669	435	(583)	689
Apr. 21------	672	440	658	391	414	569	554	604	754	186	671	---	507	679	284	369
Average-------	400	298	378	513	491	493	396	603	634	245	630	---	662	392	(508)	371
Apr. 22------	621	508	363	513	577	505	524	443	426	269	679	---	327	454	302	345
Apr. 23------	228	234	348	581	492	451	401	268	717	251	664	---	(648)	630	705	584
Apr. 24------	295	389	141	534	499	267	233	367	367	611	575	(342)	601	83	599	489
Apr. 25------	750	546	658	591	613	546	676	525	323	486	723	722	680	643	690	208
Apr. 26------	58	59	262	574	604	421	121	629	619	313	709	---	656	471	428	331
Apr. 27------	624	352	509	350	306	580	301	627	720	79	693	613	632	544	709	232
Apr. 28------	475	342	608	526	559	487	529	240	481	174	757	---	701	650	703	48
Average-------	436	347	413	524	521	465	399	444	522	312	686	---	(607)	496	591	320
Apr. 29------	467	133	525	396	408	531	431	662	676	29	762	---	525	648	631	74
Apr. 30------	712	381	634	640	668	531	273	505	566	546	637	660	657	599	687	474
May 1------	708	565	665	231	192	394	708	---	597	626	752	704	609	621	551	661
May 2------	463	283	257	397	356	380	117	228	588	90	756	---	715	110	311	286
May 3------	393	368	313	303	311	372	448	628	555	627	721	412	710	278	385	593
May 4------	429	233	498	157	168	156	411	605	646	299	757	484	251	488	730	598
May 5------	688	569	675	419	465	552	544	660	587	552	757	669	496	704	690	272
Average-------	551	362	510	364	367	417	419	548	602	396	735	586	566	493	569	423

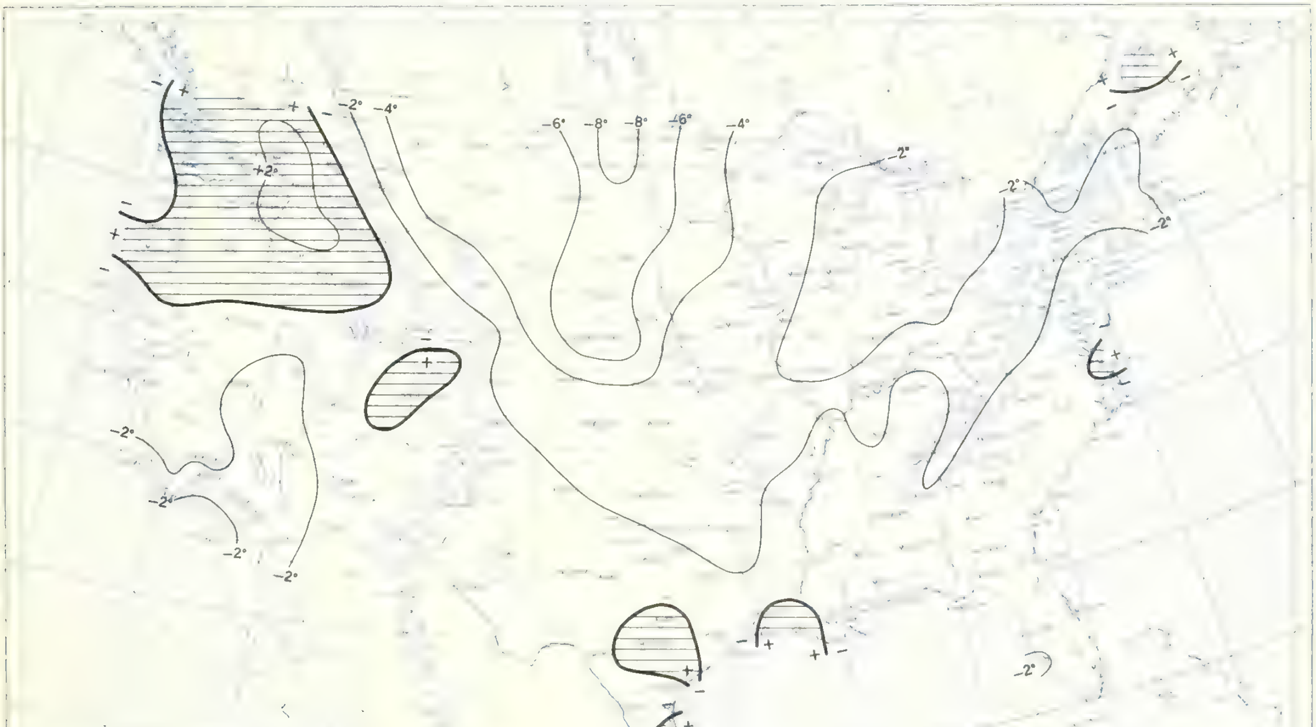
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

NWRC, Asheville, N. C. --- 7/13/56 --- 1850

Chart I. A. Average Temperature (°F.) at Surface, April 1956.



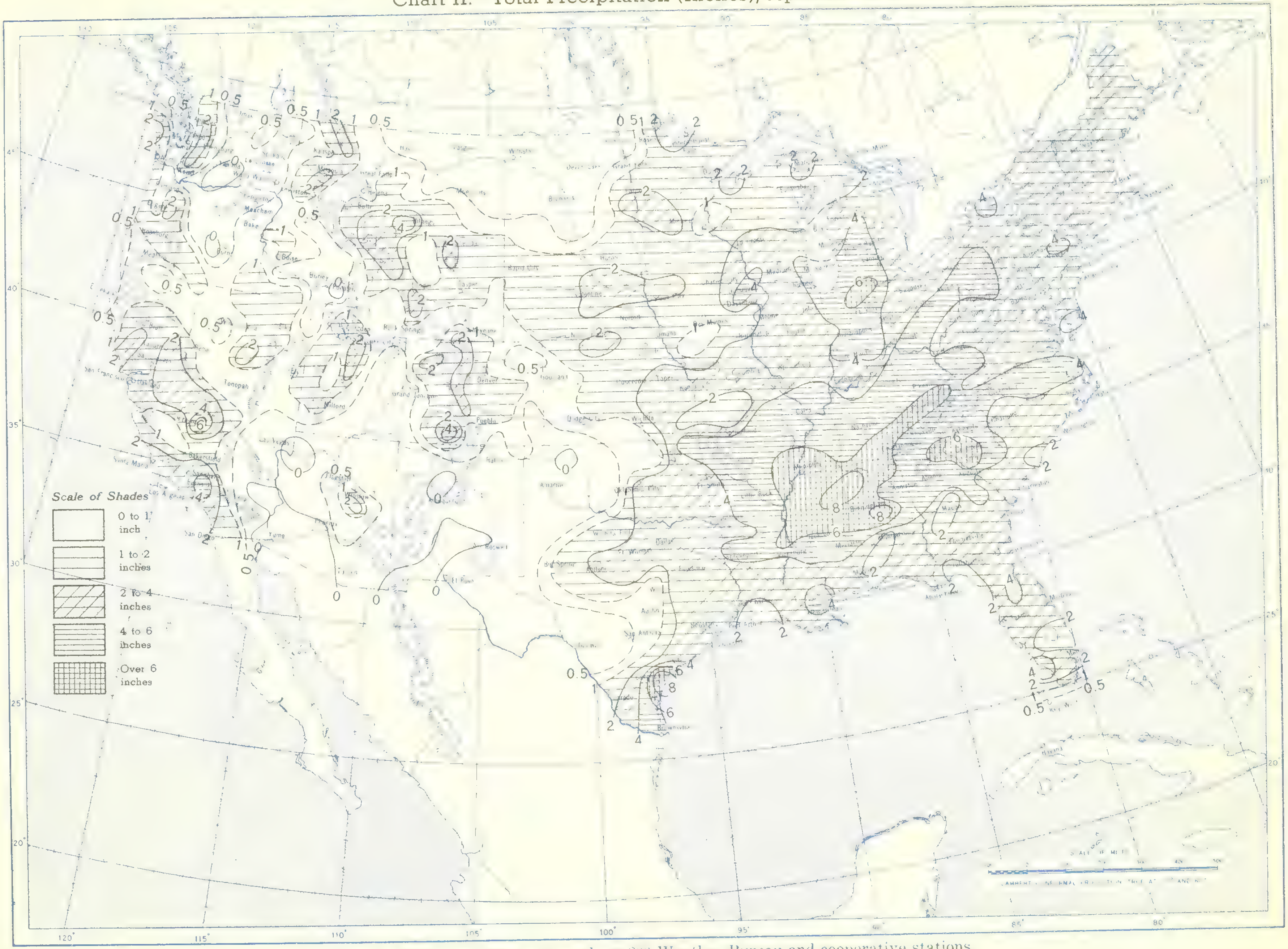
B. Departure of Average Temperature from Normal (°F.), April 1956.



A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

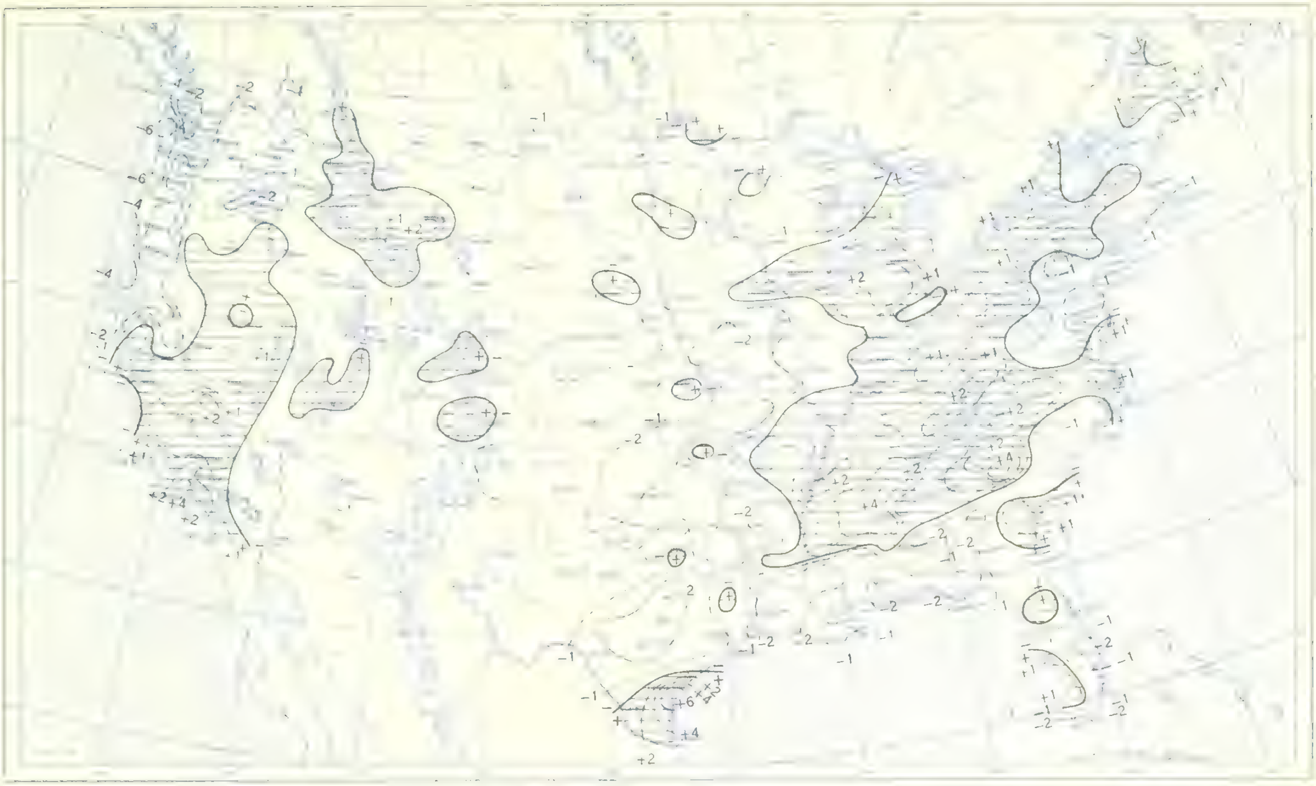
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), April 1956.

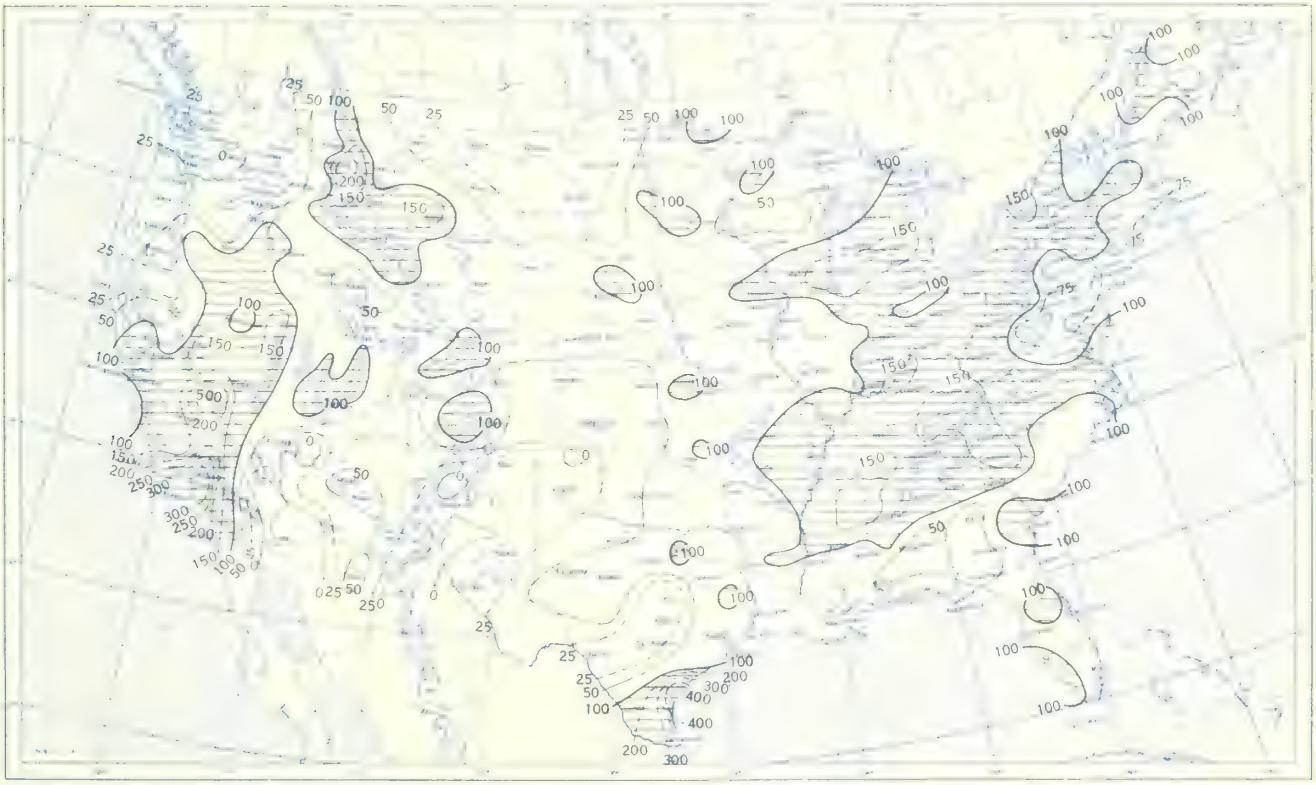


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), April 1956.

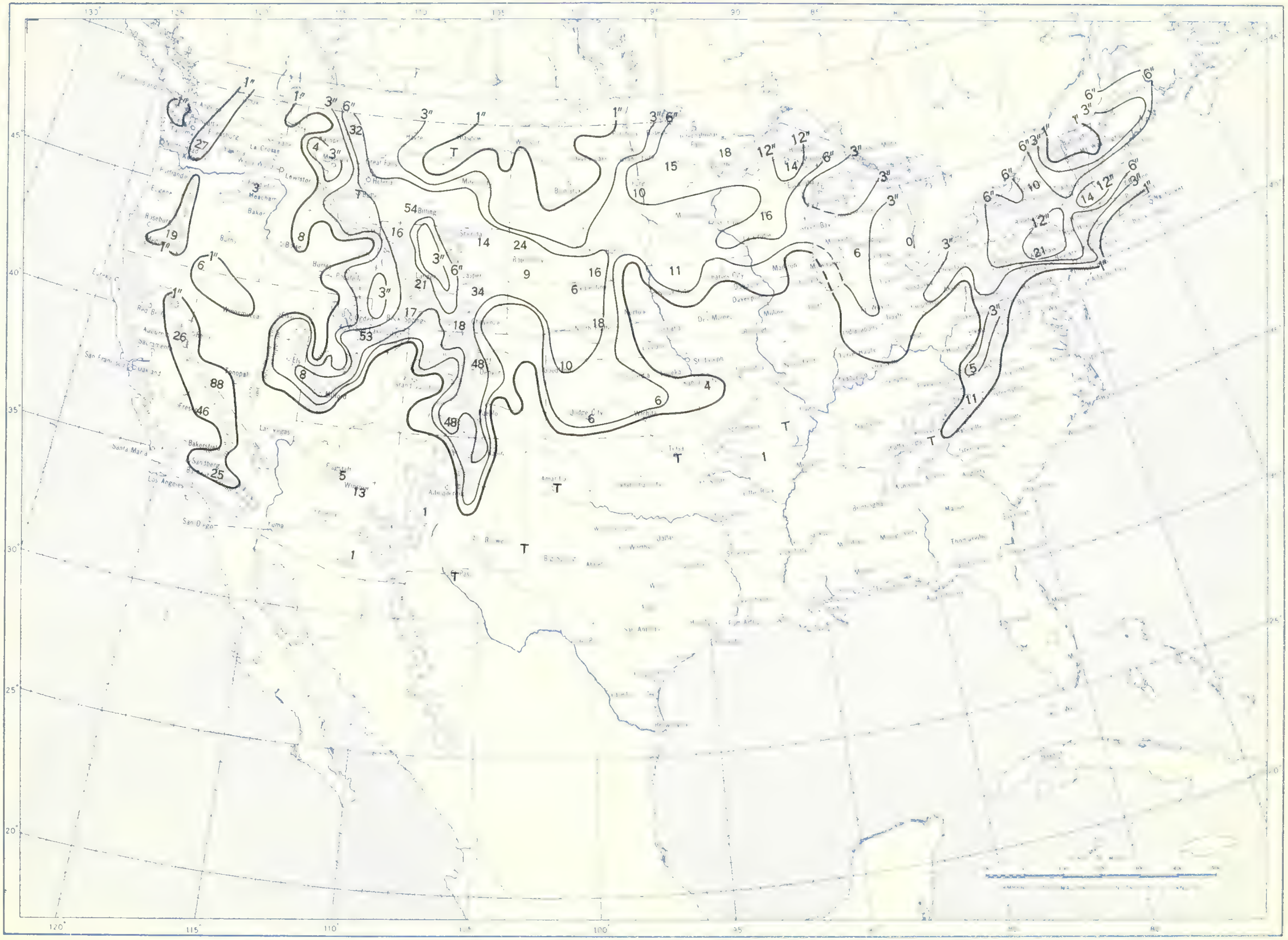


B. Percentage of Normal Precipitation, April 1956.



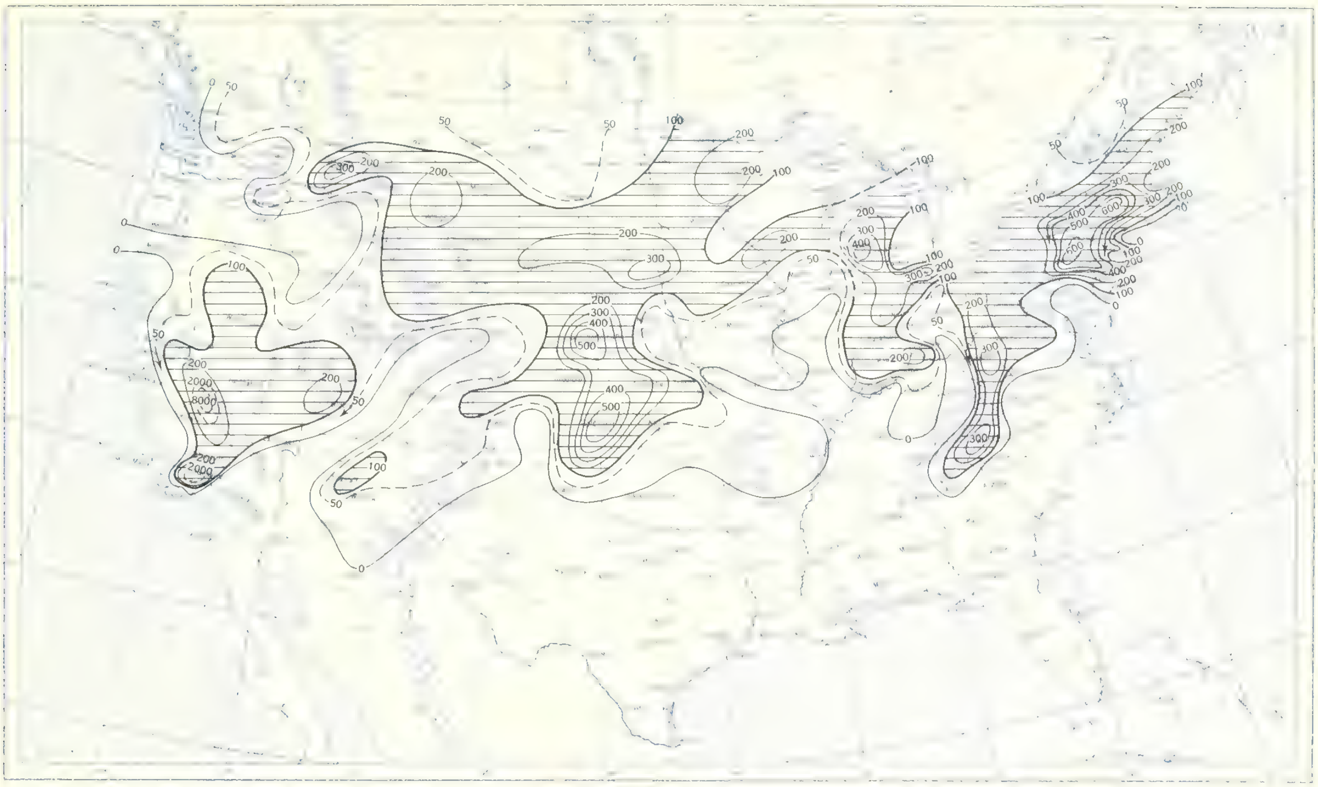
Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart IV. Total Snowfall (Inches), April 1956.

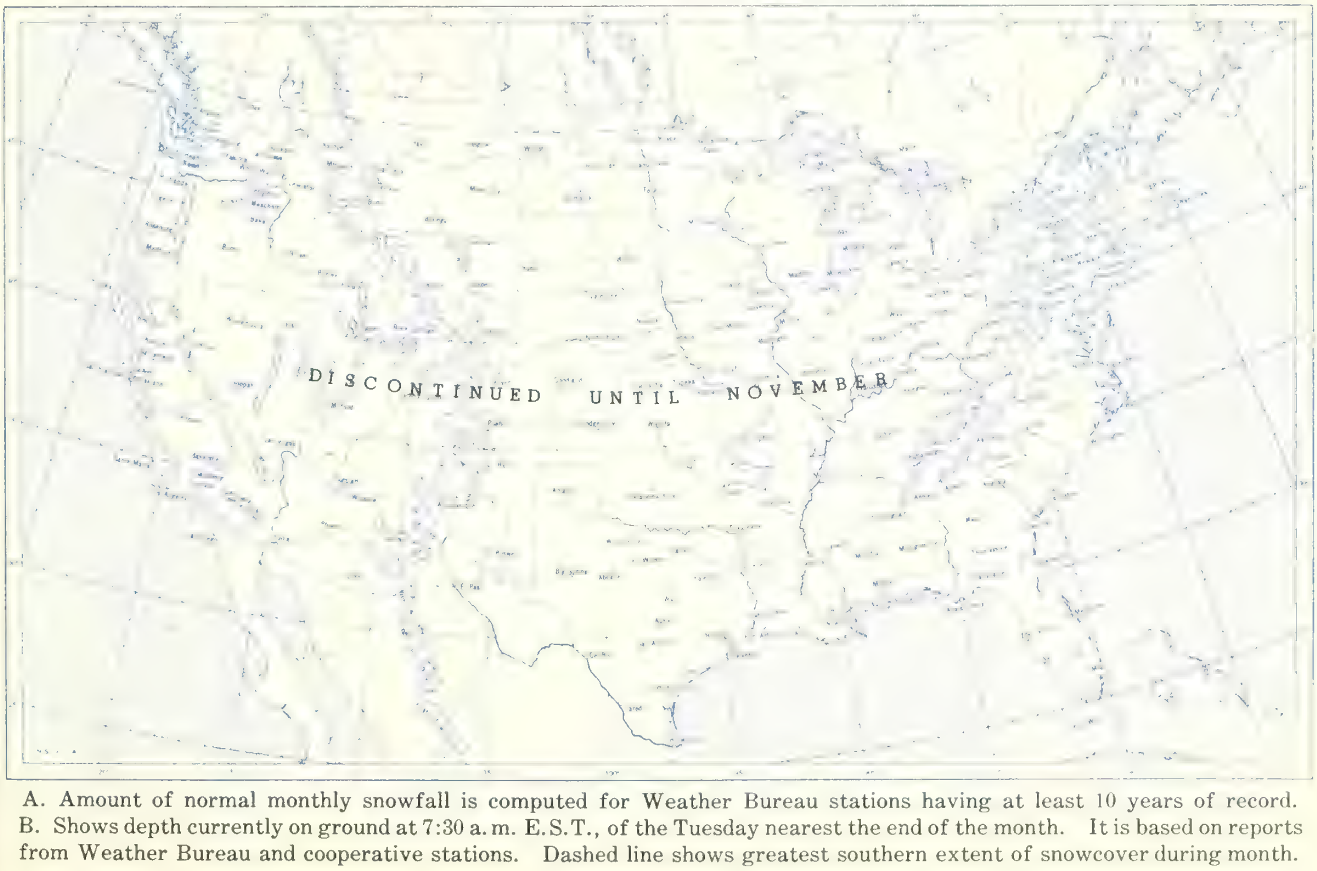


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Normal Snowfall, April 1956.

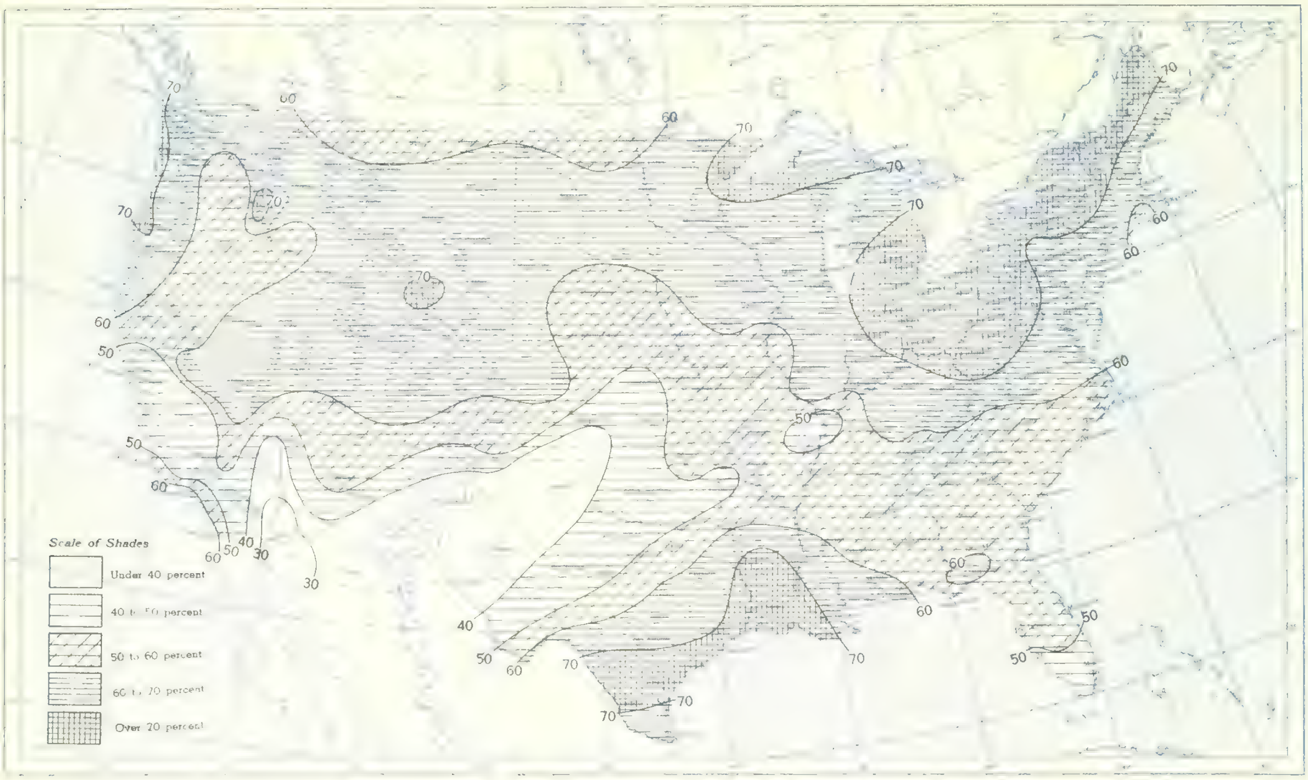


B. Depth of Snow on Ground (Inches). 7:30 a. m. E. S. T., April 30, 1956.

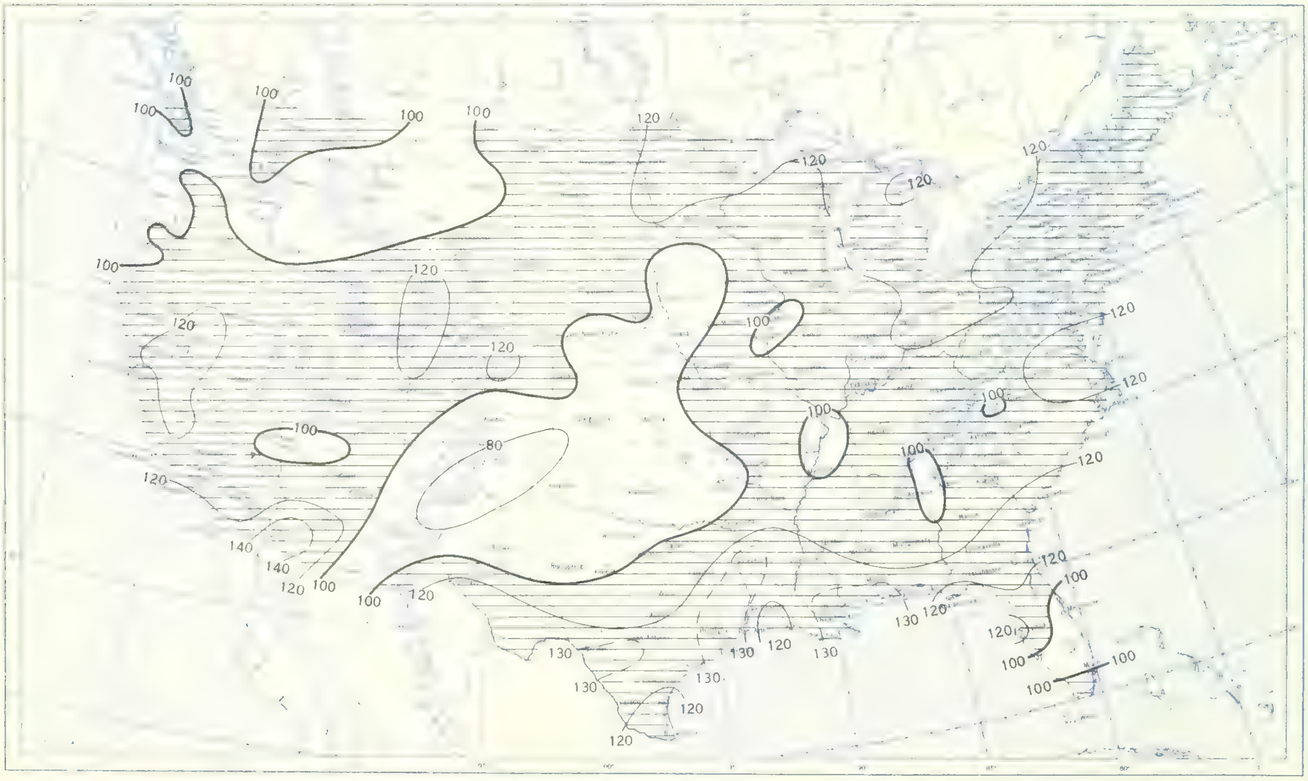


A. Amount of normal monthly snowfall is computed for Weather Bureau stations having at least 10 years of record. B. Shows depth currently on ground at 7:30 a. m. E. S. T., of the Tuesday nearest the end of the month. It is based on reports from Weather Bureau and cooperative stations. Dashed line shows greatest southern extent of snowcover during month.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, April 1956.

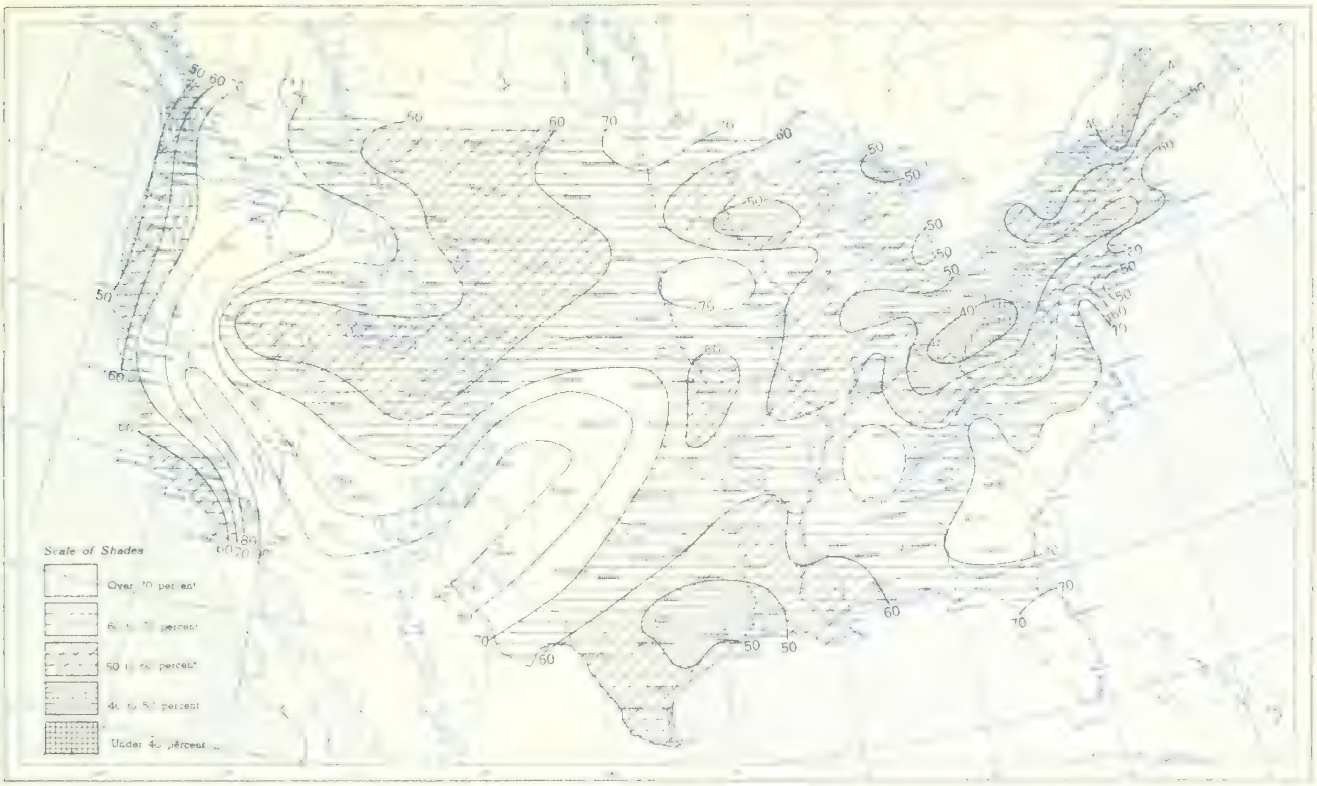


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, April 1956.

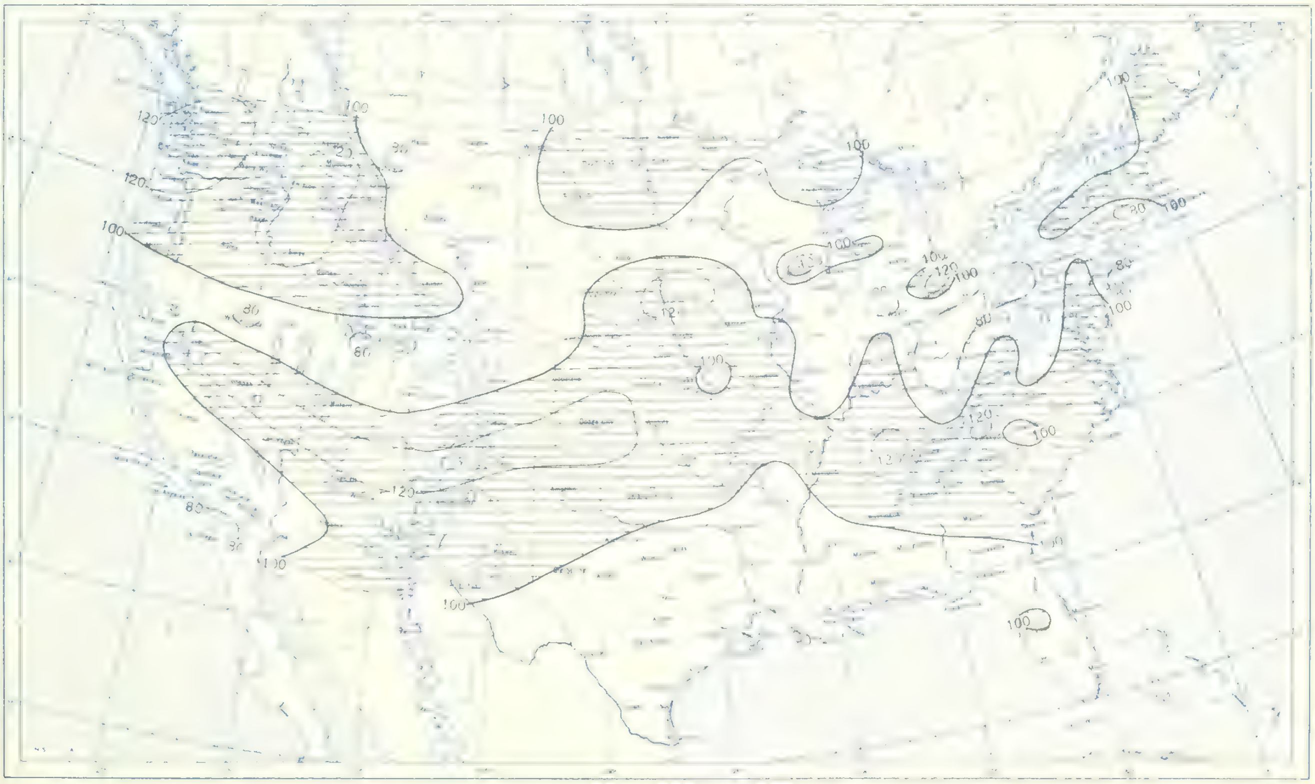


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, April 1956.



B. Percentage of Normal Sunshine, April 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, April 1956. Inset: Percentage of Mean Daily Solar Radiation, April 1956. (Mean based on period 1951-55.)

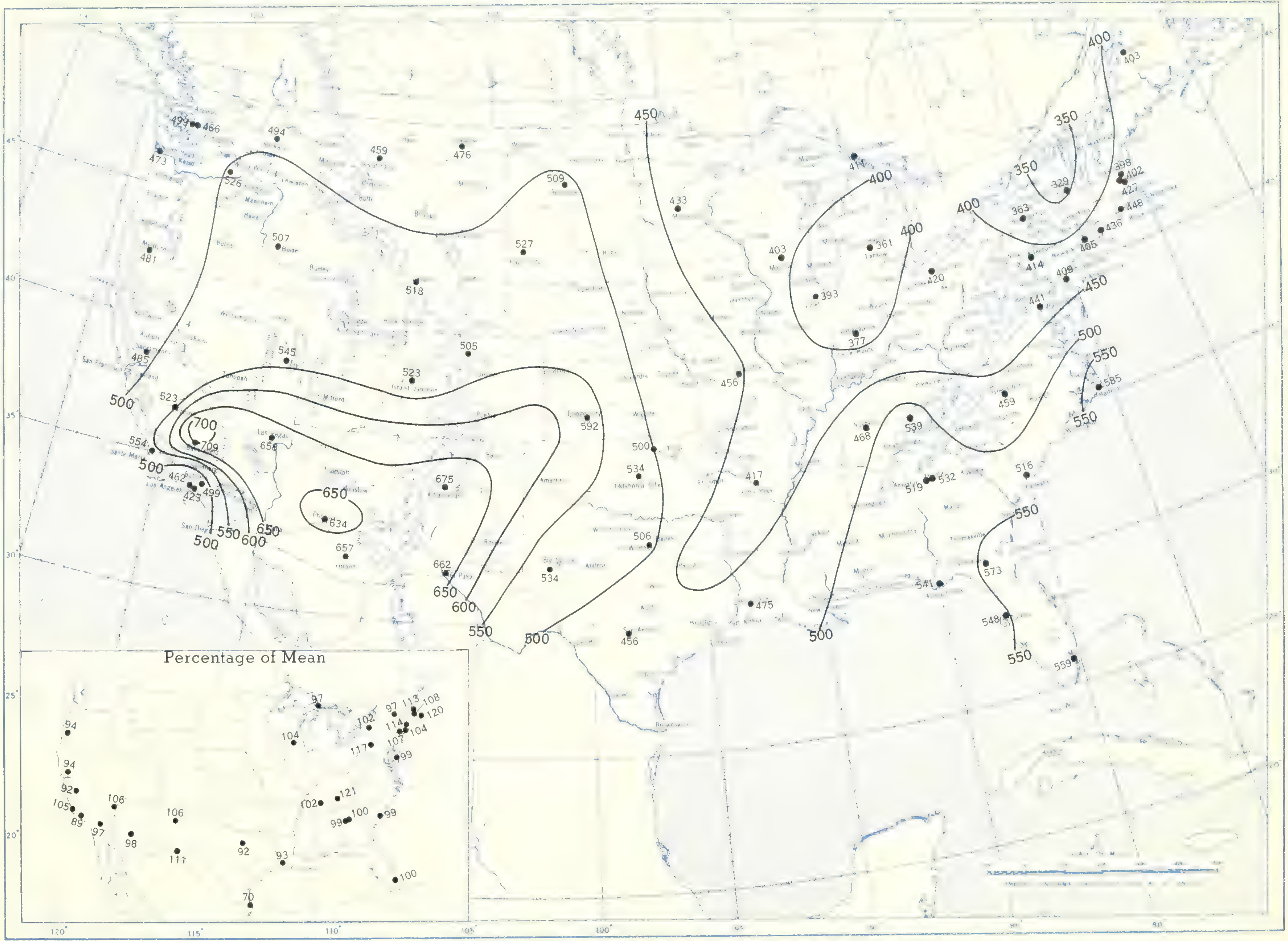
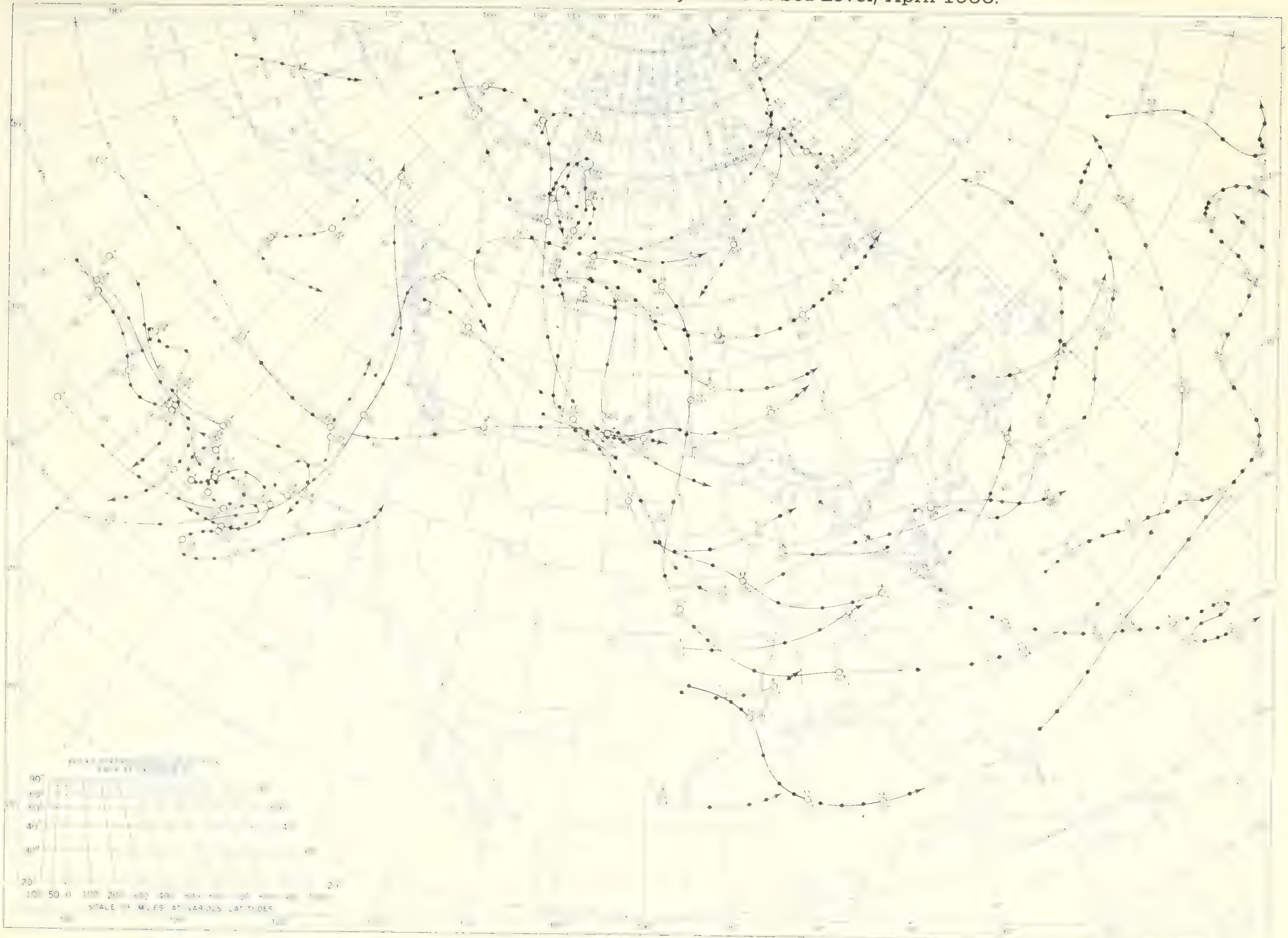


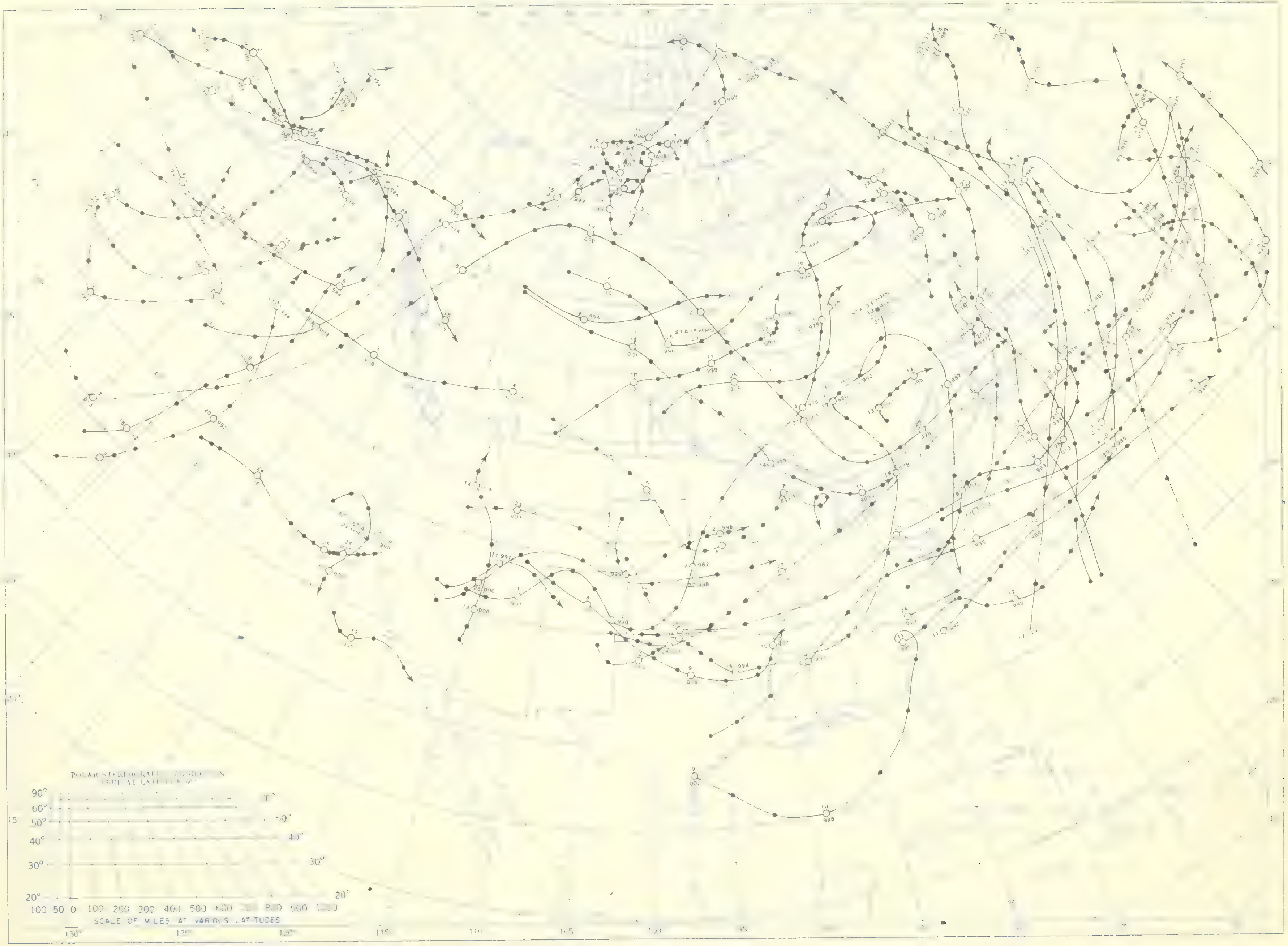
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$). Basic data for isolines shown on chart. Further estimates are obtained from supplementary data for which limits of accuracy are wider than for those data shown.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, April 1956.



Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

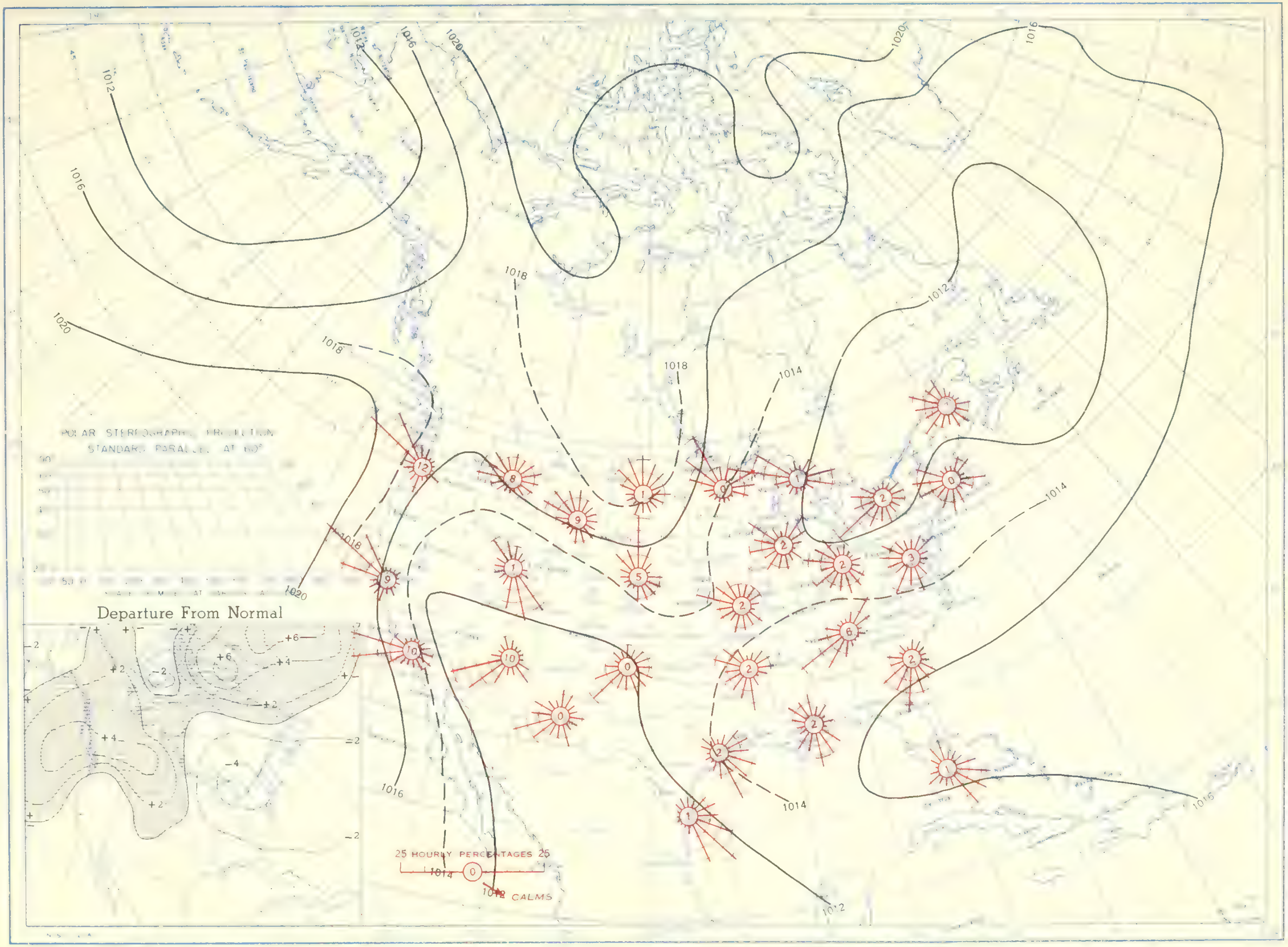
Chart X. Tracks of Centers of Cyclones at Sea Level, April 1956.



Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

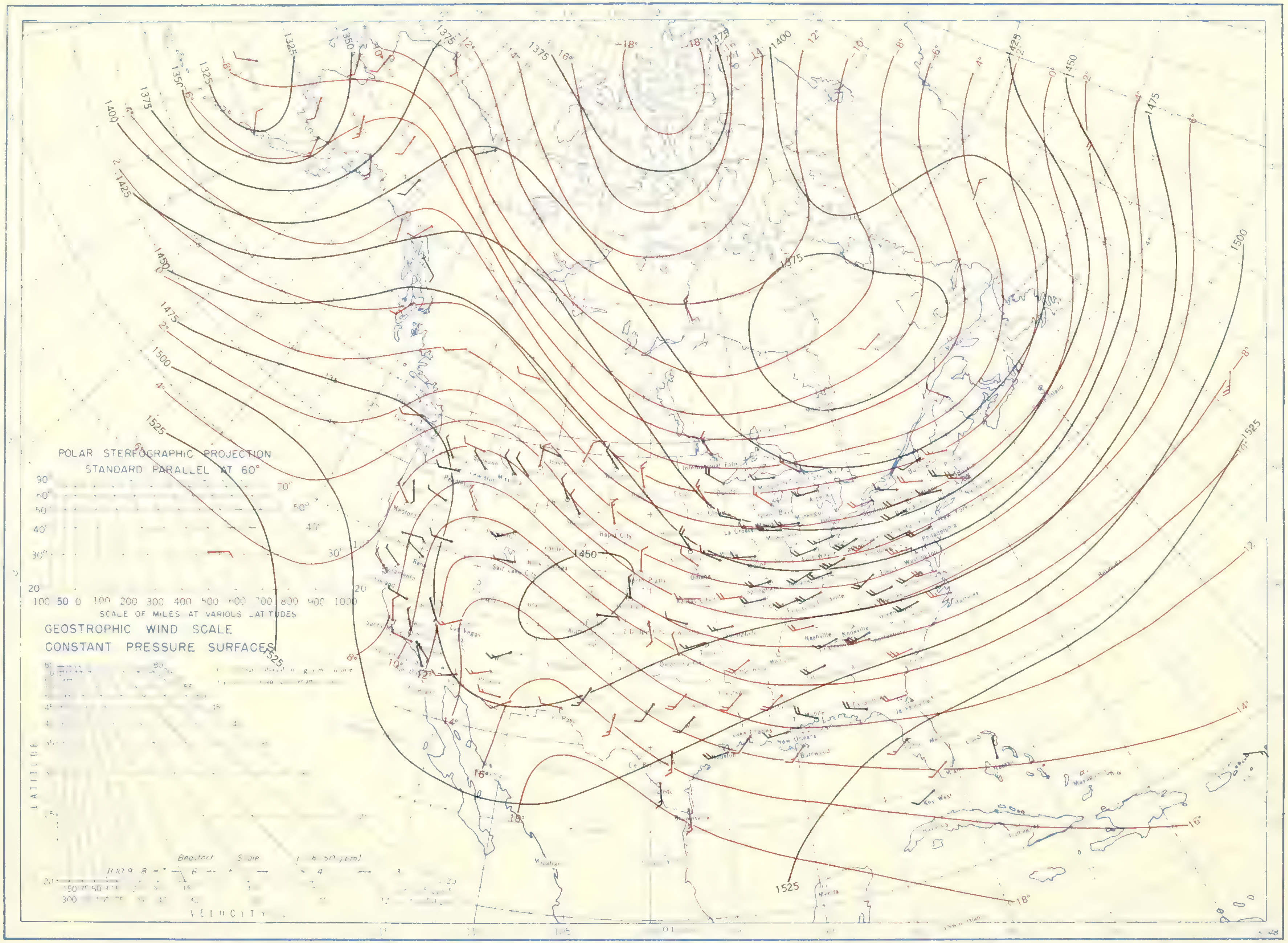
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, April 1956. Inset: Departure of Average Pressure (mb.) from Normal, April 1956.



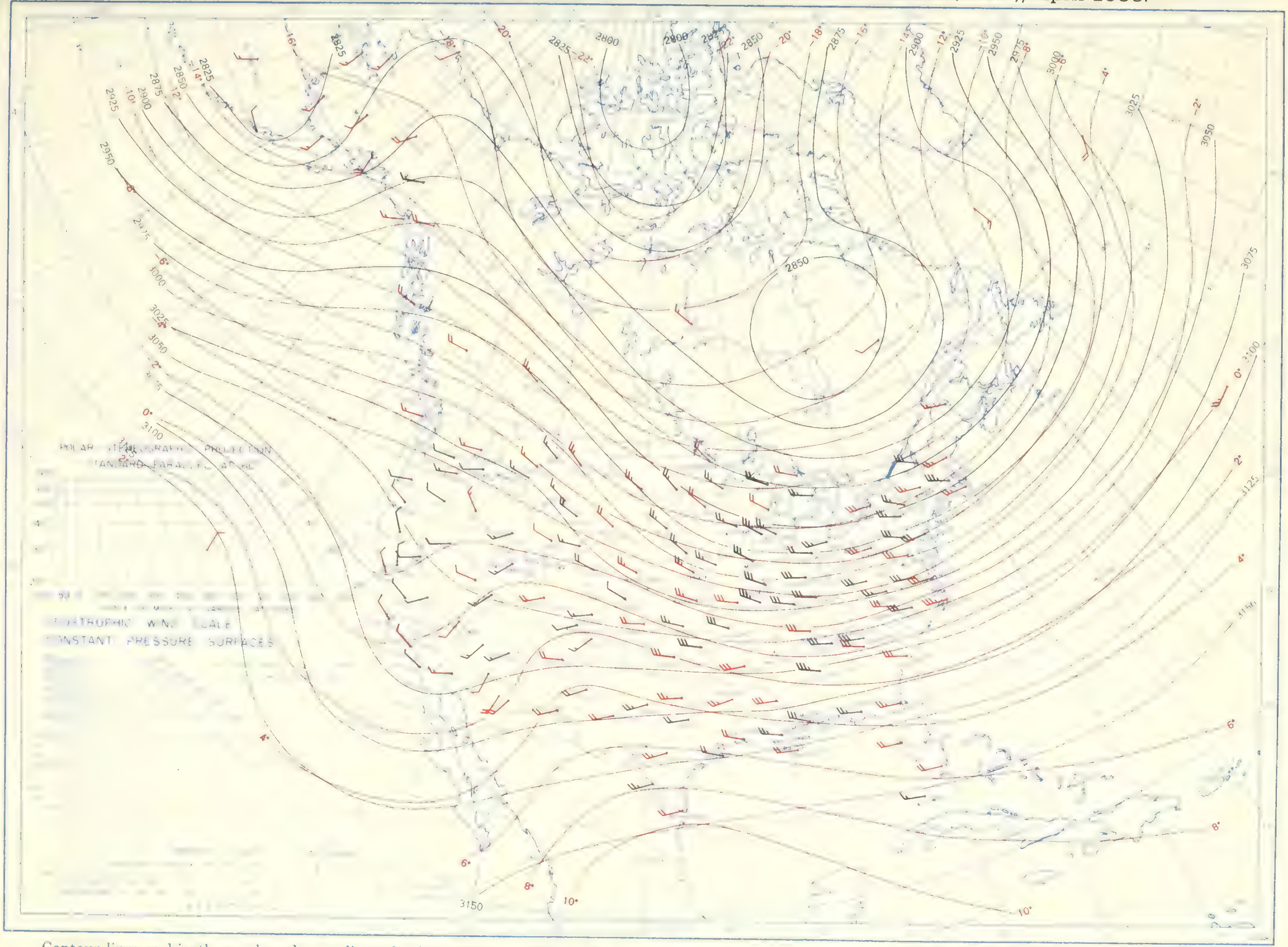
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 850-mb. Pressure Surface, Average Temperature in °C. at 850 mb., and Resultant Winds at 1500 Meters (m.s.l.), April 1956.



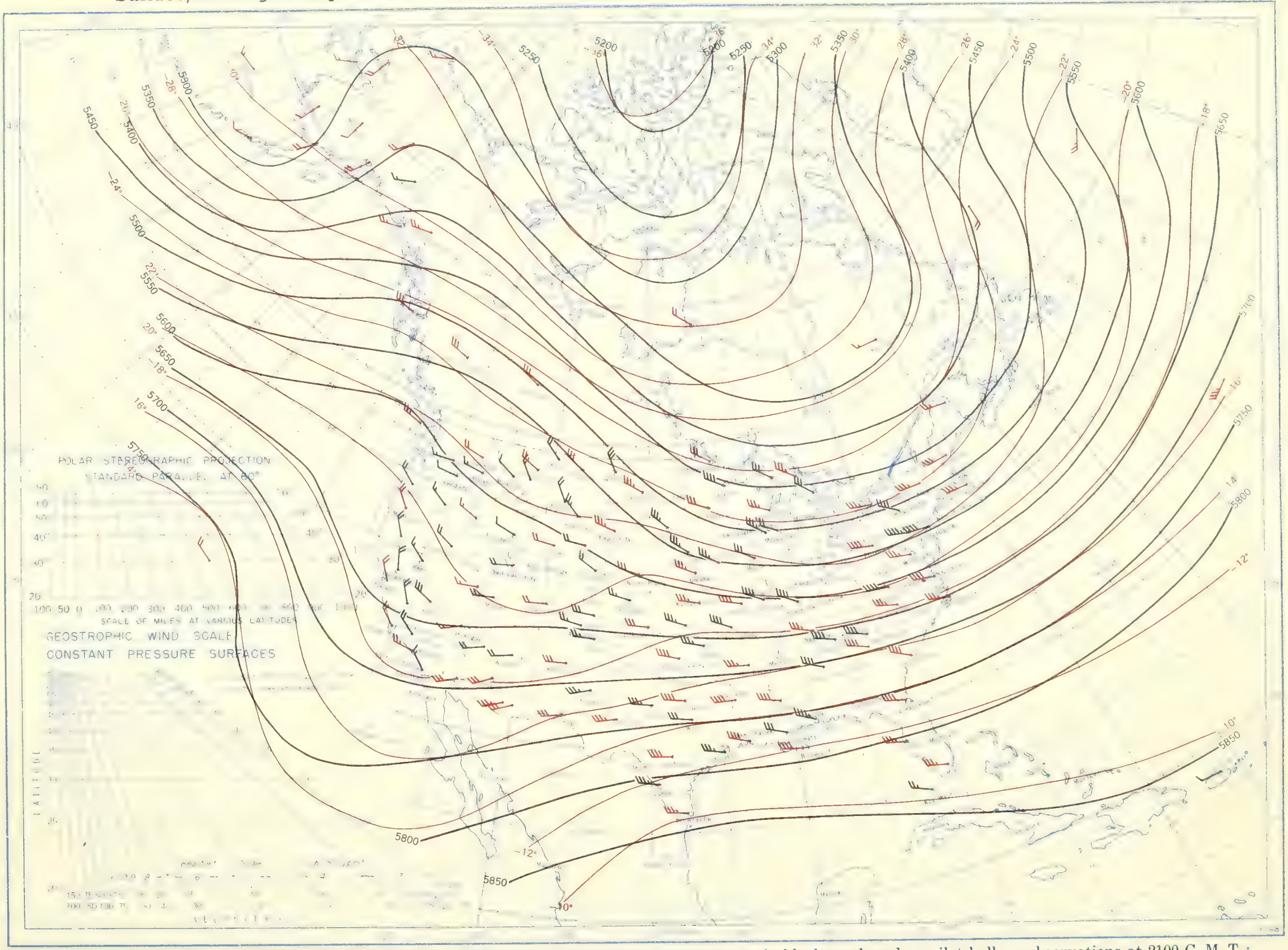
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Surface, Average Temperature in °C. at 700 mb., and Resultant Winds at 3000 Meters (m.s.l.), April 1956.



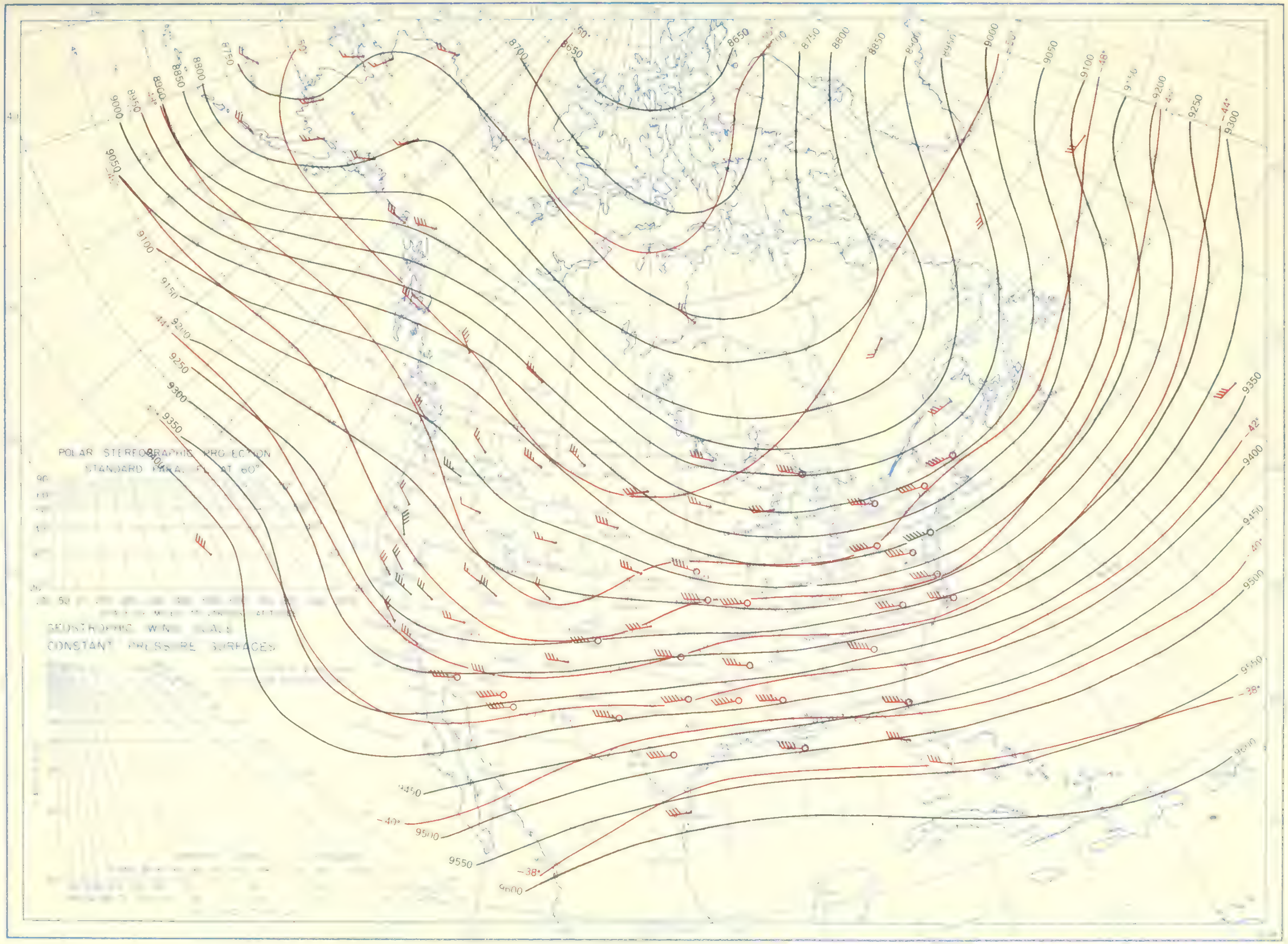
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIV. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 500-mb. Pressure Surface, Average Temperature in °C. at 500 mb., and Resultant Winds at 5000 Meters (m.s.l.), April 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.;

Surface, Average Temperature in °C. at 300 mb., and Resultant Winds at 10,000 Meters (m.s.l.), April 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

U. S. DEPARTMENT OF COMMERCE
SINCLAIR WEEKS, Secretary
WEATHER BUREAU
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MAY 1956
Volume 7 No. 5

ASHEVILLE: 1956

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CHARTS I-XV

NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 5 MAY 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

Contrasting weather conditions in different parts of the country featured the weather of May 1956. While the central Great Plains was experiencing one of the warmest Mays on record, winter doggedly held on in the Northeast where late-season snows and freezes retarded vegetative growth and agricultural activities by as much as 3 weeks. The freeze on the 25th damaged crops severely in New England and to a lesser extent in nearby states. In large areas of the central and lower Great Plains the winter and spring drought was greatly relieved by rains during the last 10 days. Drought continued, however, in local areas of this region and in the Far Southwest. During the latter half of the month, above normal temperatures in the Northwest caused rapid snowmelt which resulted in local overflows along many streams. Severe storms brought death and destruction to Michigan and Ohio on the 12th.

TEMPERATURE.--Temperatures for the month averaged slightly below normal in California and Nevada and up to 4° below north of a line joining Hatteras, N. C., and Havre, Mont. In the remainder of the Country the month was relatively warm with the center of greatest departures of 6° or more located in the central Great Plains.

Persistent below-normal temperatures in the Northeast dropped below freezing and set new records for so late in the season on the 8th, 9th, 17th, and 25th. On the 9th Albany, N. Y., and Providence, R. I., reported late season lows of 27° and 29° respectively. A record low of 28° occurred at Green Bay, Wis., on the 16th, and 31° at Syracuse, N. Y., and 35° at Wilmington, Del., on the 17th. On the 24th and 25th most stations in New England and many others in the remainder of the Northeast as well as in the Great Lakes region reported late season lows. Heavy frost was deposited at Burlington, Vt., on the 25th, the latest on record, and the month was the coldest May there since 1917. Freeze damage in the Northeast on the 24th and 25th was estimated at $10,000,000 in New England, one-half of which occurred in Massachusetts. The apple crop was believed to have sustained a 75 to 90 percent loss, and the first strawberry crop was completely wiped out. Early truck also suffered heavy losses. Temperatures responsible for these losses ranged in the 20's in the interior lowlands. New Jersey estimated its losses in the hundreds of thousands. Additional freeze damage, less extensive and of unestimated amount, was reported from New York State, Michigan, Pennsylvania, Maryland, and Delaware.

The hot weather in the Great Plains and Rocky Mountains set several new records. Among stations with long-term records reporting their hottest May were Wichita Falls, 76.6°, Fort Worth, 77.7°, El Paso, 75.7°, Dallas 78.3°, all in Texas; Wichita, 70.1° and Dodge City, 70.0°, both in Kansas. Also several individual stations reported temperatures as high as or higher than they had ever before recorded in May. Among these were Salt Lake City, Utah, 93° on the 31st; Salem, Oreg., 95° on the 17th; Albuquerque, N. Mex., 97° on 31st; and Grand Junction, Colo., 95° on 31st. Minnesota reported that ice in all northern Lakes melted during the second week.

PRECIPITATION.--The most serious rainfall deficiencies for May occurred in the western portions of the central and lower Great Plains and the Far Southwest. In most of this large area rainfall was less than 50 percent of normal with monthly totals diminishing from less than an inch in western Nebraska and Kansas to no rain at all along the Mexican Border. Similar deficiencies in both the preceding months of March and April had virtually exhausted soil moisture reserves, and the combination of heat and lack of moisture during the first two decades of May in the Great Plains and during the entire month in the Far Southwest further deteriorated the small grain and pasture outlook.

Moderate to heavy rains fell over nearly all the central and lower Great Plains area during the last decade. These rains were particularly heavy in Oklahoma and northwestern Texas where they contributed to monthly totals which ranged up to 12.05 inches in Vinson, Okla., and 11.33 at Stephenville, Tex. The 12.05 inches in Oklahoma was the Nation's greatest total for the month.

Precipitation was also less than 50 percent of normal in northern and western Washington, and by the end of May, which was preceded by a dry April, rain was badly needed in western portions and in the eastern wheat belt.

Northwestern Florida and southern portions of Alabama and Georgia were parts of still another area which received less than 50 percent of normal precipitation in both April and May. The situation was not serious here, although rain was badly needed locally at the end of the month.

In the remainder of the Country precipitation generally ranged from 1 to over 4 inches, and was ample for agricultural purposes except in scattered local areas. Some individual stations reported unusually heavy amounts for May. Akron, Ohio, measured 9.60 inches for its wettest May in 70 years; Wilmington, N. C., 9.12 for its wettest May on record; and Red Bluff, Calif., had 4.04 inches, also a new record.

Snow fell in the northern Rockies on the 4th and 5th (Cutbank, Mont., reported 2 inches on the ground on the latter date) and from the upper Mississippi to New England on the 6th. Snowfall in central and northeastern Wisconsin on the 6th ranged up to 9 inches at Wausau, and glaze damaged trees in the southern portion of the State. Harrisburg, Pa., observed a trace of snow on the 16th, its latest snowfall on record.

DESTRUCTIVE STORMS.--The worst outbreak of severe storms occurred in Michigan and Ohio on the 12th. More than 20 funnel clouds were observed in lower Michigan and severe thunderstorms with suspected tornadic activity extended into Northern Ohio. In the Cleveland, Ohio, area 7 persons were killed, a hundred or more injured, and property damage was estimated at $8,000,000. Additional damage of $750,000 occurred at Ravenna, Ohio. Destruction was as great or greater in Michigan, with the severest tornado in that State striking in the Flint area. On the 13th damage estimated at $1,000,000 occurred in southwestern Pennsylvania as a result of severe thunderstorm activity (also suspected tornado) and local flooding. Hail caused $600,000 crop damage in Columbus County, N. C., on the 20th, $210,000 in Polk County, Nebr., on the 12th, and $100,000 in Jeff Davis and Appling Counties, Ga., on the 24th.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

MAY 195

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Geneva	99	23+	Heflin	34	17	Falls City Blk Pond Twr.	7.41	Fort Morgan	0.45
Arizona	3 Stations	111	17	Alpine	14	15	Big Lake	1.08	92 Stations	.00
Arkansas	Subiaco	98	18	Gravette	40	1	Gravette	11.63	Shriley	.55
California	Cow Creek	114	21	White Mountain 2	0	13	Pit River PH 5	7.05	17 Stations	.00
Colorado	Holly	102	20	Westcliffe	8	15	Wetmore 2S	5.28	Durango	.02
Connecticut	Hartford Brainerd Fld.	93	31	2 Stations	22	9	North Branford	4.13	New Hartford	1.02
Delaware	Bridgeville 1NW	96	14	Georgetown 5SW	30	9	Bridgeville 1NW	3.11	Newark College Farm	1.83
Florida	2 Stations	100	24	Jasper 9ESE	42	17	Raiford State Prison	9.45	Tavernier	.33
Georgia	Swainsboro	101	31	Blairsville Exp. Sta.	32	17	Adel	9.52	Macon WB AP	.32
Idaho	Grand View	97	31	Obsidian 4NNE	16	14	Cottonwood	4.98	Ririe 12ESE	.48
Illinois	2 Stations	96	22	Freeport	29	8	LeRoy	10.85	Warsaw	.81
Indiana	Vincennes	97	30	Wabash	29	1	Whitestown	11.13	Petersburg 61 Bridge	1.91
Iowa	2 Stations	98	12+	Chariton 3E	28	16	Delaware 2W	8.12	Keosauqua No. 2	.84
Kansas	3 Stations	104	18+	4 Stations	34	1+	Toronto	8.14	Cawker City	.42
Kentucky	Barbourville	95	13+	3 Stations	33	25	Hartford 6NW	7.66	Bardstown SJ Prep Sch.	1.45
Louisiana	4 Stations	96	19+	Converse	45	16	Franklin	10.68	De Ridder 3SW	.91
Maine	do	85	31	Millinocket Dam	18	7	Woodland	4.85	Orono	1.50
Maryland	3 Stations	96	13+	Bittinger 2NW	24	17	Oakland 1SE	7.78	Ocean City	1.24
Massachusetts	2 Stations	93	31	2 Stations	20	9	Edgartown	3.57	Lake Cochituate	.73
Michigan	Dowagiac	92	23	Kenton U. S. Forest	11	7	Millington 3SW	7.95	Onaway Black L Forest	1.37
Minnesota	Morris W C School	92	28	Cass Lake For. Exp. Sta.	16	1	Fort Ripley	6.69	Mahoning Mine	1.33
Mississippi	5 Stations	98	22+	State Line	41	17	Clinton Exp. Station	6.54	Biloxi City	.47
Missouri	2 Stations	99	21	Princeton	30	16	Houston	11.87	Canton L & D 20	1.00
Montana	Miles City	96	18	Loweth	11	3	Nye 5NE	4.78	Heart Butte	.42
Nebraska	3 Stations	100	12+	Nenzel 20S	23	2	Crete	6.02	Ravenna	.41
Nevada	Overton	105	18	Contact	12	13	Jarbidge	3.74	6 Stations	.00
New Hampshire	2 Stations	90	31	Grafton	15	9	Mount Washington	7.75	Surry Mountain Dam	1.10
New Jersey	do	93	31	Layton 3NW	22	9	Milton	4.12	Deepwater	1.26
New Mexico	do	104	12	Gavilan	10	15	Amistad	3.90	29 Stations	.00
New York	New York Laurel Hill	93	13	Indian Lake 2SW	15	9	Hinckley	8.36	Hudson	.92
North Carolina	10 Stations	97	13+	2 Stations	28	9+	Willard 1N	9.57	Sparta	.84
North Dakota	Watford City 14S	93	21	3 Stations	18	1+	Gackle	6.21	Ambrose	.65
Ohio	3 Stations	94	13+	do	26	5+	Marysville	9.88	Sidney 2	2.28
Oklahoma	Blackwell	104	18	2 Stations	37	15	Vinson	12.05	Regnier	.66
Oregon	The Dalles	101	18	Crater Lake NP Hq.	17	11+	Little River	5.91	2 Stations	.54
Pennsylvania	Phoenixville 1E	95	31	Bradford 4W Res.	18	25	Titusville Water Works	9.10	Le Roy	1.29
Rhode Island	2 Stations	89	29+	Kingston	25	9	Block Island WB AP	2.72	Providence WB AP	1.43
South Carolina	Tilghman Forest Nurs.	101	23	Union 7SW	36	9	Conway	7.97	Sumter	.76
South Dakota	2 Stations	92	27+	Deerfield 5NW	18	14	Gettysburg	5.24	Ralph	.90
Tennessee	3 Stations	94	22+	Mountain City 2	31	17	Memphis Sub. Sta.	7.38	Leapwood	1.05
Texas	Presidio	111	12	3 Stations	39	11+	Stephenville 3NE	11.33	5 Stations	.00
Utah	4 Stations	100	17+	Silver Lake Brighton	12	13	Richmond	4.58	2 Stations	.03
Vermont	Vernon	88	23	Chelsea	16	9	Mount Mansfield	5.83	Vernon	1.30
Virginia	2 Stations	98	14	4 Stations	27	9+	Swords Creek	5.86	Somerset	.57
Washington	Darrington RS	100	30	2 Stations	18	3+	Anatone	6.20	Malott	.00
West Virginia	4 Stations	93	12+	Berkley Springs	20	17	Bayard	9.49	Mathias	1.43
Wisconsin	Lake Geneva	94	22	2 Stations	17	1+	Ripon 5NE	6.56	Townsend	1.31
Wyoming	Worland	92	27	Kendall	11	14	Parkman 5WNW	5.85	Wamsutter 1N	.29
Puerto Rico	5 Stations	93	21+	Garzas Dam	56	5+	Rio Blanco 1800 Ft.	16.96	Mona Island	.76

+ And also on a later date or dates.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

Table 2

MAY 1956

State and station	Elevation (ground)	Pressure: Station ø	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover tenths sunrise to sunset	Possible sunshine
	Ft	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	994.6	1019.7	85	62	73.4	3.9	94	22	43	17	6	0	60	68	2.38	-1.36	0.72	8	7	0.0	0	8.1	S	34	NW	31	5	15	11	6.1	70
Mobile	211	1010.9	1018.9	87	67	76.5	3.1	93	22+	52	17	10	0	64	75	4.23	.41	1.77	7	9	.0	0	8.8	S		-	-	10	11	10	5.5	
Montgomery	198	1012.0	1019.3	87	63	74.9	2.4	95	23	48	17	13	0	63	70	1.31	2.16	.89	7	4	.0	0	6.1	E	26	W	31	6	15	10	5.8	63
ARIZONA																																
Flagstaff	6993	--	---	70	33	51.7	1.7	81	17+	25	14+	0	17	-	--	.17	-.36	.17	2	1	.0	0	-		.			18	9	1	3.2	
Phoenix	1114	971.2	1009.6	92	62	76.9	1.4	104	17	53	13+	20	0	37	25	T	-.17	T	0	1	.0	0	5.9	W	*23	SSE	25	21	6	1	2.6	93
Prescott	5014	845.9	1012.9	79	46	62.5	1.6	90	17	35	14+	1	0	-	--	T	-.30	T	0	1	.0	0	11.6	SSW	56	S	21	19	7	5	3.0	91
Tucson	2558	923.1	1009.5	93	59	75.8	2.7	102	17	47	15	24	0	26	17	T	-.21	T	0	1	.0	0	7.5	WSW	28	E	16	23	5	3	2.5	98
Winslow	4880	850.0	1009.7	83	46	64.8	2.8	96	31	35	15	4	0	19	22	.20	-.12	.20	2	3	.0	0	10.9	SW	*10	WSW	12	18	9	1	3.5	
Yuma	199	1004.7	1009.8	96	62	79.2	-1.2	109	16	54	1	27	0	34	24	.00	-.02	.00	0	0	.0	0	8.9	WNW	28	NW	9+	23	5	3	1.9	93
ARKANSAS																																
Fort Smith	458	999.3	1015.7	85	63	73.8	4.2	96	19	52	16	10	0	62	71	3.44	-1.62	1.21	6	5	.0	0	8.0	E	43	NE	31	13	9	9	4.8	71
Little Rock	257	1004.1	1016.9	84	64	74.0	4.2	92	19+	53	1	9	0	63	71	3.21	-1.64	2.67	5	4	.0	0	10.1	S	27	E	1	9	11	8	5.1	65
Texarkana	361	- ----	- ----	86	65	75.4	3.5	93	19	53	1	6	0	--	-	3.03	-2.10	2.16	5	4	.0	0	-	---	-	-	--	--	-			--
CALIFORNIA																																
Bakersfield	489	995.9	1013.9	84	57	70.3	.1	98	16	47	12+	9	0	47	48	.40	.05	.28	4	0	.0	0	7.6	NW	*21	WNW	4+	17	8	6	3.4	
Bishop	4108	871.7	1011.2	79	44	61.3	-1.3	92	21+	31	10	3	1	--	--	.34	.14	.14	4	6	.0	0	--	-	-	---		15	11	5	4.1	-
Blue Canyon	5280	838.8	1014.6	59	43	50.9	-1.3	75	21	30	12	0	6	-	-	6.11	3.63	2.31	11	4	13.2	4		--			-	10	9	12	5.6	
Burbank	699	988.8	1014.8	73	54	63.6	.4	96	16	48	31	2	0	48	64	.95	.68	.95	2	0	.0	0	4.1	S	*23	NNW	12	10	8	13	5.6	
Eureka (U)	43	1015.6	1018.0	58	48	53.2	.3	77	16	44	11+	0	0	--		1.58	-.24	.54	8	0	.0	0	7.2		32	N	27	6	7	18	7.0	45
Fresno	331	1002.0	1013.8	80	53	66.9	-2.0	93	22	43	12	3	0	48	55	.81	.53	.41	7	1	.0	0	6.8	NW	22	SW	8+	15	8	8	3.8	79
Los Angeles (U)	312	------	-- ---	73	56	64.4	-.4	99	16	52	8+	2	0	49	62	.46	.20	.46	2	0	.0	0	6.1	--	26	W	12	9	12	10	5.5	54
Los Angeles	99	1011.2	1014.9	71	56	63.0	.9	97	16	51	12	2	0	52	73	.56	.26	.56	2	0	.0	0	8.0	W	%33	N	12	11	7	13	5.6	--
Mt. Shasta (R)	3544	892.0	1015.7	67	40	53.7	.2	84	22	32	11	0	1	--	-	2.69	1.02	1.43	7	6	T	0	- --	---	-	---	-	12	10	9	5.1	
Oakland	3	1015.9	1016.1	68	51	59.2	.8	94	16	45	13+	1	0	48	71	.92	.31	.46	5	0	.0	0	10.0	WNW	*31	SW	5	12	9	10	5.1	
Red Bluff	341	1001.7	1014.3	79	54	66.4	1.6	94	16	41	11	7	0	47	54	4.04	2.98	1.78	7	5	.0	0	9.8	SSE	40	N	4	13	10	8	4.2	80
Sacramento	17	1013.2	1014.3	79	51	64.7	.7	96	16	45	11	5	0	47	60	.86	.32	.68	6	3	.0	0	10.0	SW	34	SW	26	11	10	7	4.1	81
Sandberg (R)	4517	861.8	1012.9	64	47	55.2	1.5	79	16	34	12	0	0			.89	.64	.86	3	0	.0	0	15.7		46	NW	20	16	7	8	4.0	
San Diego	19	1011.9	1014.9	71	58	64.5	1.3	94	17	53	13	3	0	50	66	.10	-.16	.09	2	0	.0	0	8.8	WNW	26	SW	9	11	7	13	5.5	54
San Francisco (U)	52	------	------	64	51	57.6	.5	91	16	49	11+	1	0	-	-	.68	.09	.40	7	0	.0	0	10.0	-	32	W	26	13	10	8	4.3	69
San Francisco	8	1015.6	1016.2	67	50	58.3	1.7	93	16	44	1	1	0	49	76	.49	.09	.20	5	0	.0	0	11.2	WNW	37	WNW	26	11	10	10	5.3	
Santa Maria	238	1007.5	1016.4	68	48	57.7	.0	93	16	38	12	1	0	48	74	45	.13	.38	4	0	.0	0	7.4	WNW	*24	WNW	12	10	12	9	5.5	
COLORADO																																
Alamosa	7538	772.4	1012.8	72	35	53.3	2.5	85	31	21	2	0	11	--	-	.19	-.38	.09	4	6	T	T	-	---	-	--	--	14	9	8	4.5	-
Colorado Springs	6173	811.0	1013.1	72	45	58.7	3.3	85	18	33	14	0	0	34	49	88	1.18	.34	7	6	T	0	12.7	SSE	*43	SW	26	11	6	14	5.7	--
Denver	5292	837.1	1012.1	74	48	60.9	4.6	85	8	34	13+	0	0	35	47	2.36	.16	1.22	8	6	T	0	11.6	S	36	NW	10	8	7	16	6.1	69
Grand Junction	4849	857.8	1011.2	78	51	64.5	2.4	95	31	38	15	1	0	26	28	.26	-.42	.15	5	5	.0	0	11.0	ESE	49	S	9	10	10	11	5.4	71
Pueblo	4639	856.1	1012.4	78	49	63.5	4.3	90	18+	34	15	2	0	35	45	.52	1.21	.18	8	6	.0	0	9.3	W	43	N	22	11	9	11	5.2	80
CONNECTICUT																																
Bridgeport	7	1018.2	------	65	46	55.3	-1.9	88	13	37	8+	0	0	-		2.38	1.22	1.05	16	5	.0	0	-	-		-	--	5	12	14	6.6	-
Hartford	169	1011.9	1017.7	67	42	54.5	-5.2	92	31	28	9	1	1	41	65	1.83	-1.83	.58	15	2	.0	0	12.4	SSW	38	W	16	5	12	14	6.9	54
Middletown (U)	133	-----	------	67	41	53.9		91	31	27	9	1	4	-	--	2.57	-	.70	17	3	T	T	11.6	-	%48	NNW	4	-	--			-
New Haven	6	1017.8	1018.3	63	45	53.6	3.1	86	13	32	9	0	1	-		3.41	.46	1.05	16	6	.0	0	7.3	-	24	E	14	1	14	13	6.7	60
DELAWARE																																
Wilmington	73	1015.5	1018.8	72	48	59.9	-2.9	93	14	35	17	2	0	47	66	2.12	-1.69	.64	14	9	.0	0	9.7	S		-		7	14	10	6.0	-
DISTRICT OF COLUMBIA																																
Washington (U)	72	------	------	75	53	64.0	1.2	94	13+	40	17	3	0	--	-	2.22	-1.69	.91	10	4	.0	0	7.5		31	NW	16+	-	-		--	--
Wash. Nat'l. AP	14	1014.3	1018.7	74	53	63.6	1.1	93	13+	40	17	3	0	48	62	2.17	-1.81	.98	8	4	.0	0	10.9	S	46	N	30	9	10	12	6.3	66
FLORIDA																																
Apalachicola (U)	13	1017.6	-----	83	70	76.2	1.8	91	21	59	17	1	0	-	-	.69	2.14	.62	6	3	.0	0	7.9	- -	26	SE	25+	18	6	7	4.0	75
Daytona Beach	31	1017.9	1019.5	85	65	75.4	1.0	95	15+	50	18	5	0	66	73	2.48	.79	1.40	10	7	.0	0	10.6	ENE	*27	ENE	9	10	9	12	5.3	-
Fort Myers	15	1017.6	------	89	67	78.4	1.5	92	21+	63	23	17	0	--	-	4.76	.47	1.59	11	10	.0	0	8.1	---	*35	NE	1	13	13	5	4.5	-
Jacksonville (U)	24	1018.8	1019.8	88	67	77.4	2.5	96	23	58	17+	10	0	65	71	3.98	.55	1.56	9	7	.0	0	9.9	ESE	36	NE	8	15	7	9	4.9	69
Key West (U)	9	1015.9	-----	89	75	81.9	2.1	91	19	70	9+	2	0	-	-	2.42	-.40	1.17	10	3	.0	0	8.7	---	20	N	9	5	23	3	4.9	78
Lakeland (U)	214	------	------	88	69	78.3	1.8	95	24	61	19	11	0		-	5.08	.49	1.76	12	12	.0	0	7.0			-	--	7	16	8	5.3	74
Miami (U)	8	------	------	83	73	78.0	.9	90	16	67	9	1	0	-		1.68	2.59	.48	8	3	.0	0	---		33	S	25	11	13	7	4.9	76
Miami	8	1016.5	1017.7	86	72	79.3	1.3	94	16	67	17+	3	0	69	73	5.44	-.11	1.63	10	4	.0	0	11.6	ENE	28	N	8	6	19	6	5.2	
Miami Beach	9	-----	------	83	76	79.0	.6	89	16	70	27	0	0	-		1.64	2.29	.45	10	-	.0	0	---	--	--	---		6	23	2		
Orlando	106	1015.2	1019.5	89	67	77.8	1.3	97	24	57	18	15	0	66	73	3.70	-.32	1.41	7	5	.0	0	9.1	E	40	S	6	9	12	10	5.2	
Pensacola (U)	13	1016.7	------	82	70	75.9	2.1	89	21	56	17	0	0	-	--	3.05	1.31	1.69	6	6	.0	0	-	---	33	NW	5			-		64
Tallahassee	64	1016.5	1019.0	87	65	75.8	1.6	94	21+	51	17	12	0	63	72	5.71	1.95	3.60	7	9	.0	0	5.8	E	-		-	9	13	9	5.5	
Tampa	19	1017.5	1018.9	89	68	78.5	2.0	93	24+	59	19	13	0	67	72	2.15	1.14	1.89	6	8	.0	0	9.8	ENE	*30	ENE	9	11	10	10	5.2	83
West Palm Beach	15	1016.9	1017.9	86	72	79.1	2.0	92	16	65	24	4	0	70	75	3.39	1.67	1.23	11	6	.0	0	12.5	ENE	*35	NNE	26	4	19	8	5.8	
GEORGIA																																
Athens	798	990.7	1019.6	83	59	70.9	.5	93	22+	43	17	6	0	59	70	.82	3.01	.44	4	4	.0	0	9.6	W	*30	NW	16	11	10	10	5.3	
Atlanta	975	978.9	1019.9	83	62	72.4	2.4	92	22	46	17	7	0	59	66	2.60	-1.22	1.38	9	3	.0	0	10.9	WSW	38	NW	2	11	10	10	5.5	67
Augusta	143	1012.6	1019.1	86	60	73.3	.4	97	23+	44	17	11	0	61	71	.76	2.52	.21	8	6	.0	0	7.0	SE	*32	NW	1	7	13	11	6.0	
Columbus	385	1005.5	------	86	61	73.4	1.4	94	22+	42	17	12	0		--	.78	-2.30	.48	6	3	.0	0		-	--	-		9	11	11	5.6	
Macon	356	1005.9	1019.2	88	63	75.2	1.6	98	23	45	17	16	0	60	62	.32	-2.90	.20	6	3	.0	0	9.3	ESE	28	S	3	11	12	8	5.1	68
Rome	637	996.5	-- ---	84	58	71.0	1.8	95	29	39	17	9	0	-	-	2.90	-1.17	1.30	7	7	.0	0		-	--	- -		8	12	11	5.9	
Savannah	48	1017.2	1019.5	85	64	74.2	1.3	97	23	53	17	7	0	64	74	4.30	1.39	1.53	8	5	.0	0	8.9	SSE	26	NE	8	11	9	11	5.3	68
Thomasville (U)	283	------	------	88	65	76.8	2.6	96	23+	52	17	16	0	--	-	4.63	1.01	2.46	8	7	.0	0	-	---	-	-	-		-		-	--
IDAHO																																
Boise	2842	918.4	1013.6	72	47	59.5	1.4	90	31	31	12	1	2	44	61	2.18	1.09	.57	11	5	T	0	8.2	WNW	47	W	26	9	7	15	6.1	78
Idaho Falls 46W (R)	4933	847.6	1013.5	70	40	55.2	2.6	87	31	24	1	0	5	-	-	1.63	.61	.62	9	4	T	T	8.8	--	a31	WSW	10		-	-	--	--
Idaho Falls 42NW (R)	4790	------	----	72	40	56.2	4.2	91	31	26	1	1	5	-	-	.85	-.19	.40	10				10.7	-	a43	S	11		-		-	
Lewiston	1413	963.4	1014.7	72	48	60.1	1.2	89	17+	33	13	0	0	--	--	3.37	1.95	.98	12	2	.0	0		-	--	-		11	2	18	6.5	-
Pocatello	4444	861.5	1013.4	70	44	57.0	1.7	89	31	30	1	0	1	39	56	1.06	.15	.36	13	6	T	0	11.4	SW	44	SW	4	8	6	17	6.4	70
ILLINOIS																																
Cairo (U)	314	1004.7	- ----	81	61	70.9	2.1	93	21+	45	1	5	0	-	-	4.95	.86	1.80	12	1	.0	0	9.6		33	SW	13	10	9	12	5.6	66
Chicago	610	993.6	1016.4	71	50	60.5	1.3	92	12+	39	16+	2	0	46	63	3.06	-.60	1.16	11	5	.0	0	10.2	SW	37	NW	17	8	9	14	6.2	59
Moline	589	993.9	1016.1	75	51	62.6	1.7	94	12	38	3+	3	0	48	63	2.27	1.17	.87	9	9	.0	0	14.0	WNW	40	W	12+	9	8	14	6.1	61
Peoria	654	993.9	1016.2	76	53	64.3	3.3	92	12	39	16	1	0	50	59	5.20	1.26	3.62	8	5	.0	0	13.4		56	SW	28	8	11	12	6.1	63
Springfield	589	993.6	1016.6	76	54	65.0	3.0	92	12	37	8	3	0	52	63	3.56	-.63	1.50	10	10	.0	0	14.7	SSW	40	SW	9	6	10	15	6.2	74
INDIANA																																
Evansville	383	1002.4	1018.0	78	56	66.9	1.4	90	22+	39	1	2	0	55	66	3.38	-.52	.96	7	4	0	0	10.9	SSW	34	SW	13	11	9	11	5.5	69
Fort Wayne	801	985.8	1017.0	71	48	59.5	.5	87	13+	35	1	0	0	49	69	6.49	3.05	2.08	18	10	0	0	13.6	SW	38	NW	17+	6	10	15	6.5	58
Indianapolis	793	988.2	1018.0	73	52	62.5	1.1	88	13	38	1	0	0	50	65	4.91	1.06	1.65	15	8	0	0	14.4	SW	42	W	30	5	13	13	6.3	65
South Bend	768	988.5	1016.7	69	47	58.0	-.4	89	22	35	7+	0	0	51	71	4.73	.89	1.34	17	9	.0	0	12.4	SSW	*35	NW	22	7	9	15	6.5	

See footnotes at end of table.

State and station	Pressure			Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
	Elevation ground	Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In.	In.			In.	In	M. p h		M p. h.			0–3	4–7	8–10	0–10	%
IOWA																																
Burlington	694	990.9	1016.5	77	52	64.7	2.8	94	12	34	16	3	0	49	61	2.42	-1.40	1.02	9	12	0.0	0	11.6	SSW	49	NW	15	5	15	11	6.2	7
Des Moines	948	984.1	1015.4	75	52	63.1	2.2	94	12	36	4	3	0	48	63	1.71	-1.89	.64	9	8	.0	0	13.7	S	58	SW	11	5	8	18	7.0	6
Dubuque	1065	990.2	1015.8	69	48	58.2	.3	89	22	34	8	0	0	47	66	3.66	.19	.75	12	10	.0	0	----	---	--	---	--	5	11	15	7.0	--
Sioux City	1094	973.2	1014.4	75	51	63.0	2.6	92	21	35	4	3	0	46	58	1.99	1.35	.90	9	7	.0	0	15.0	S	80	W	10	5	11	15	6.9	6
Waterloo	870	----	---	72	48	59.9	.4	90	22	34	4+	1	0	-		3.23	-.31	.82	11	11	.0	0	14.6	---	--	---	--	--	--	--	---	-
KANSAS																																
Concordia (U)	1375	964.1	- -	80	56	68.0	4.8	99	12	41	4	7	0	-	58	99	-2.62	.59	5	4	.0	0	9.5	---	38	N	10	7	8	16	6.7	5
Dodge City	2594	925.8	1012.4	82	55	68.5	5.5	99	22	41	1	11	0	47	57	1.44	-1.47	.44	7	6	.0	0	17.4	S	51	SW	12	7	11	13	6.3	6
Goodland	3645	887.2	1012.8	78	48	62.6	4.5	96	12	36	1+	5	0	40	55	.98	-1.71	.93	4	7	.0	0	13.1	SSE	*35	WSW	10	7	10	14	6.4	--
Topeka	879	979.3	1014.7	81	57	69.3	5.5	97	21	41	4	8	0	53	62	2.36	-1.96	.97	12	10	.0	0	14.3	S	46	S	13	4	11	16	6.9	5
Wichita	1321	965.1	1013.4	82	58	70.1	5.2	99	18	46	16	9	0	54	61	1.40	-2.39	.38	11	10	.0	0	16.3	S	43	S	10	7	10	14	6.5	6
KENTUCKY																																
Lexington	979	982.9	1018.7	76	54	64.6	2.0	89	13	37	8	0	0	53	68	3.70	.14	1.19	11	7	.0	0	11.6	SSW	--	---	--	6	12	13	6.3	-
Louisville	474	998.7	1018.0	76	55	65.7	.4	87	12+	41	1	0	0	55	69	3.98	.05	1.23	11	5	.0	0	10.0	SW	34	SW	11	10	7	14	5.8	5
LOUISIANA																																
Baton Rouge	64	1015.2	1018.2	87	67	76.9	3.3	96	19	53	17	9	0	66	75	2.70	2.22	.79	11	6	.0	0	8.2	ESE	--	---	--	8	11	12	6.0	--
Lake Charles	12	1015.6	1017.2	87	69	77.6	3.1	92	20	60	17	6	0	67	76	5.25	.52	2.32	9	3	.0	0	6.9	S	*21	SE	10+	7	13	11	5.6	--
New Orleans (U)	9	1016.3	---- -	86	71	78.5	2.4	94	22	64	17	8	0		-	7.19	1.76	2.79	12	7	.0	0	6.0	---	27	S	26	10	13	8	5.0	6
New Orleans	3	1015.9	1017.9	86	68	77.1	2.5	93	22	57	17	5	0	68	76	2.37	-3.17	1.21	8	6	.0	0	6.7	SSE	*23	W	2	11	10	10	5.2	--
Shreveport	252	1007.5	1016.6	86	66	76.2	2.4	92	18+	56	16	9	0	64	72	3.85	-.70	2.43	7	4	.0	0	7.6	S	--	---	--	9	14	8	5.5	7
MAINE																																
Caribou	624	991.6	1015.2	54	34	43.7	-4.8	71	22	23	7+	0	15	31	62	2.42	-.72	1.00	16	2	T	T	13.0	WNW	*30	WNW	1+	4	12	15	6.9	--
Portland	61	1013.3	1017.3	60	37	48.2	-4.1	84	31	23	9	0	9	38	67	3.06	-.30	1.67	12	3	T	T	11.1	S	35	S	9+	10	6	15	6.3	6
MARYLAND																																
Baltimore (U)	14	-- --	- -	74	54	64.1	-1.2	94	13+	41	17	3	0	--	-	1.84	-2.17	.73	11	--	.0	0	----	---	--	---	--	--	--	--	---	--
Baltimore	146	1014.3	1019.3	73	49	61.3	-1.6	95	14	33	17	3	0	48	64	2.38	-1.63	.68	10	8	.0	0	10.9	SW	39	NW	16	7	11	13	6.2	5
Frederick	294	-- ---	-- --	73	46	59.3	-4.6	92	14+	28	17	3	1	--	-	2.51	-1.09	1.28	10	2	.0	0	----	---	--	---	--	--	--	--	---	--
MASSACHUSETTS																																
Blue Hill Obs. (R)	629	994.0	1017.6	64	42	52.0	-3.1	90	31	29	8	1	1	--	62	2.11	-1.39	.43	16	3	.0	0	15.9	SSW	45	SSW	27	6	9	16	6.6	5
Boston	15	1012.5	1017.1	66	45	55.4	-2.4	93	31	34	8	1	0	39	58	1.85	-1.06	.54	16	1	.0	0	17.2	SSW	*46	SSW	9+	5	11	15	6.9	6
Nantucket	43	1018.2	1018.8	55	42	48.7	-3.6	76	13	34	18	0	0	42	78	3.46	.55	1.16	13	5	.0	0	14.0	SW	40	S	27	5	10	16	6.8	5
Pittsfield	1153	969.8	- --	63	38	50.4	-3.9	82	31	25	9+	0	9	--	--	3.27	-.49	.58	18	5	.0	0	----	---	--	---	--	--	--	--	---	--
MICHIGAN																																
Alpena (U)	587	993.9	------	59	40	49.4	-1.5	87	22	30	7+	0	5	-	--	1.46	-1.17	.41	13	4	T	T	11.3	---	37	NW	14	8	11	12	6.2	5
Detroit	619	990.5	1017.5	66	46	56.0	-1.8	87	30	34	8	0	0	45	68	6.03	2.42	1.81	17	9	.0	0	10.2	S	43	SW	30	4	9	18	7.0	5
Detroit (Willow Run)	722	988.2	1016.8	68	46	56.8	-1.4	86	22+	34	8+	0	0	45	67	4.33	.89	1.02	16	11	.0	0	12.2	SW	*39	WNW	14+	5	9	17	7.0	--
East Lansing (U)	856	-----	----	68	45	56.4	-.1	86	22	33	7+	0	0	--	--	5.60	1.85	1.83	19	7	.0	0	5.8	---	21	SW	12+	--	--	--	---	5
Escanaba (U)	594	993.2	-- -	57	39	47.6	-2.2	84	22	27	7	0	5	--	--	2.56	-.04	.78	12	4	.0	0	12.0	---	38	N	15+	4	14	13	6.4	6
Flint	761	988.8	1016.9	66	43	54.3	-1.5	84	30	29	8	0	4	44	68	6.80	3.41	1.74	20	9	.0	0	10.2	S	*81	NW	12	5	10	16	7.1	--
Grand Rapids	681	991.2	1016.5	67	45	55.6	-.7	85	12+	31	8	0	4	45	69	6.49	3.04	4.10	17	7	.0	0	11.1	W	34	S	9	6	6	19	7.0	5
Marquette (U)	677	988.5	--- --	56	37	46.7	-2.9	81	11	31	6+	0	7	--	66	3.60	.96	1.40	14	2	T	T	8.8	---	34	W	12	7	9	15	6.5	6
Muskegon	627	993.2	1016.9	63	44	53.3	-1.0	81	29	31	8+	0	3	43	68	4.94	2.12	1.83	17	12	.0	0	----	---	--	---	--	5	13	13	6.2	--
Sault Ste. Marie	721	993.9	1015.7	55	34	44.4	-4.5	74	12	26	16	0	18	35	71	4.65	2.10	1.77	13	5	T	T	10.4	WNW	*30	WNW	14	7	11	13	6.3	5
MINNESOTA																																
Duluth	1409	974.3	1015.4	59	36	47.8	-1.9	77	21+	24	16	0	12	34	63	2.08	-1.09	1.00	14	3	1.8	1	15.6	NW	49	W	11	3	15	13	6.7	5
Intern'l Falls	1179	973.6	1015.2	59	33	46.2	-4.7	78	21	21	1	0	16	33	61	2.52	-.01	.78	15	7	2.1	T	12.0	NW	--	---	--	7	11	13	6.1	--
Minneapolis	830	981.7	1015.3	68	48	58.1	-.4	85	29	33	16	0	0	42	60	2.37	-.75	.48	13	4	.0	0	13.6	SE	42	E	10	8	8	15	6.5	4
Rochester	1017	978.0	1015.1	68	46	57.0	.2	86	12	29	16	0	1	45	67	5.13	1.75	2.05	14	8	.0	1	10.9	SE	--	---	--	6	9	16	6.5	--
St. Cloud	1034	976.6	1014.7	67	43	54.9	-.3	82	26	28	4	0	4	42	64	2.69	-.41	.94	13	7	.0	0	9.1	NW	--	---	--	6	11	14	6.4	-
MISSISSIPPI																																
Jackson	305	1006.3	1018.2	86	64	74.7	2.4	91	19+	51	17	7	0	65	75	3.58	-.51	.99	11	10	.0	0	6.6	SSE	29	SE	26	8	10	13	5.8	6
Meridian	294	1005.0	- - - -	87	63	75.3	3.8	95	22	45	17	10	0	-	--	1.35	-2.64	.45	7	6	.0	0	----	---	--	---	--	10	11	10	5.6	--
Vicksburg (U)	234	1008.9	--	85	67	75.6	2.7	91	20	57	17	7	0	-	-	4.09	-.13	1.53	8	3	.0	0	7.4	---	26	SE	28	11	7	13	5.2	7
MISSOURI																																
Columbia	778	987.5	1016.0	78	57	67.4	3.8	93	12+	39	1	3	0	55	67	5.20	.36	2.40	13	12	.0	0	11.2	SSW	41	SE	18	5	12	14	6.8	7
Kansas City	741	981.0	1015.3	80	60	69.7	4.2	97	21	43	1	5	0	54	60	4.36	-.05	1.75	14	10	.0	0	13.7	S	56	W	22	4	13	14	6.8	4
St. Joseph	809	-- ---	------	79	57	67.8	3.3	96	21	41	1	4	0	--	-	3.78	-.29	1.45	10	12	.0	0	13.8	---	*35	SSW	12	4	10	17	7.0	--
St. Louis (U)	465	996.6	-- - -	78	59	68.5	2.3	91	12	41	1	3	0	-	-	4.68	.58	1.28	13	10	.0	0	13.9	---	44	S	30	7	12	12	5.8	6
St. Louis	552	996.6	1016.8	78	57	67.8	2.4	92	12	40	1	5	0	54	64	4.84	.82	1.39	12	10	.0	0	12.0	SSW	--	---	--	6	11	14	6.5	--
Springfield	1265	968.8	1016.0	78	58	68.0	4.4	88	6+	44	3	0	0	58	73	5.80	.78	2.76	10	10	.0	0	15.1	S	52	NE	30	5	12	14	6.1	6
MONTANA																																
Billings	3568	891.0	1014.6	68	46	56.9	.9	87	23	28	3	0	4	43	65	2.47	.67	.53	14	4	6.7	4	11.7	NE	38	NW	27	5	8	18	7.2	4
Butte	5530	829.7	1016.4	61	37	48.9	2.0	80	31	25	3	0	9	36	--	1.17	-.63	.43	13	6	2.5	2	8.2	SSE	*25	NW	12+	4	8	19	7.5	--
Glasgow (U)	2277	940.4	1015.2	67	43	55.1	-.4	86	21	23	3	0	4	37	56	2.29	.74	.82	7	3	5.2	2	11.5	ESE	*42	WNW	16	7	6	18	6.9	--
Great Falls	3664	888.6	1015.3	65	44	54.3	.5	87	31	26	3	0	6	36	57	1.33	-.60	.47	11	3	8.1	2	11.5	WSW	40	SW	11	5	7	19	7.3	5
Havre	2488	926.5	1015.6	68	44	56.0	.3	88	19+	25	3	0	5	37	56	1.57	.09	.61	12	2	2.5	2	7.9	---	32	W	11	6	7	18	6.8	5
Helena	3893	873.7	1015.3	66	43	54.2	1.9	88	31	28	2+	0	5	39	62	1.28	-.32	.45	14	6	3.3	1	8.9	W	47	S	23	3	11	17	7.4	5
Kalispell	2965	------	-	67	42	54.4	2.0	87	31	28	2	0	4	--	-	1.44	-.19	.57	11	6	2.2	1	----	---	--	---	--	8	7	16	6.2	--
Miles City	2629	930.9	1014.9	70	46	58.0	.9	89	23	30	3	0	3	41	--	2.43	.72	1.19	14	3	T	0	11.3	NW	*29	WNW	21	4	8	19	7.3	--
Missoula	3200	901.8	1015.9	68	43	55.7	2.1	92	31	32	6	1	1	39	58	.66	-.98	.27	10	2	T	0	7.6	W	33	SW	26	5	8	18	7.0	5
NEBRASKA																																
Grand Island	1841	948.2	1013.9	73	51	62.2	1.1	89	28	34	2	0	0	50	68	2.43	-1.44	.82	8	6	.0	0	15.9	SSE	--	---	--	5	9	17	7.1	--
Lincoln (U)	1166	---	--	76	55	65.7	3.2	97	12	39	1	3	0	--	--	2.61	-.49	.91	9	9	.0	0	11.5	---	51	SE	10	7	9	15	6.5	5
Norfolk	1544	959.4	1014.6	73	50	61.6	2.5	89	28	33	2+	0	0	47	60	1.84	-1.79	.69	8	6	.0	0	----	---	--	---	--	4	9	18	7.0	--
North Omaha	1323	966.8	----	74	52	63.2	---	92	18	37	2+	3	0	--	-	2.11	----	.87	8	5	.0	0	----	---	--	---	--	--	--	--	---	-
North Platte	2779	915.3	1013.4	74	47	60.2	1.3	89	18	31	14	0	1	45	64	1.20	-1.47	.84	7	3	T	0	11.3	N	47	N	12	3	10	18	7.3	6
Omaha	978	974.9	1014.4	76	55	65.5	2.8	94	18	39	4	3	0	49	59	1.31	-1.44	.46	8	4	.0	0	13.6	SSE	38	S	10	5	10	16	6.8	5
Scottsbluff	3950	878.4	1014.5	73	46	59.3	3.1	88	8	33	14	0	0	42	60	2.75	.11	1.14	8	5	.0	0	11.8	ESE	--	---	--	4	9	18	7.0	--
Valentine (U)	2587	922.5	-- ---	71	45	57.8	.4	86	21	27	2	0	3	-	-	1.18	-1.48	.68	7	6	.0	1	12.2	---	42	SW	24	6	8	17	6.9	6
NEVADA																																
Elko	5075	844.6	1014.9	68	39	53.4	.4	83	22+	25	14	0	6	38	63	1.74	.79	.55	12	4	T	0	5.3	WSW	*23	NW	8	8	6	17	6.6	-
Ely	6257	808.3	1014.6	67	34	50.5	-1.2	80	17+	22	13	0	12	31	55	1.61	.43	.56	11	5	6.2	4	11.4	---	40	S	8+	8	10	13	5.8	6
Las Vegas	2162	944.8	1008.9	89	59	74.3	.2	102	23	49	10	16	0	23	18	T	-.16	T	0	1	.0	0	13.6	SW	*46	NE	21	21	6	4	2.9	9
Reno	4397	861.2	1014.7	70	40	54.9	-.4	87	22	28	8+	0	3	35	52	.75	.27	.31	6	3	T	0	7.0	WNW	43	S	30	7	12	12	6.0	8
Winnemucca	4299	866.9	1013.8	70	40	55.1	-.8	89	22	25	14	0	6	39	58	1.57	.73	.61	13	3	T	0	8.0	SW	52	E	25	6	9	16	6.7	7
NEW HAMPSHIRE																																
Concord	339	1006.0	1017.0	65	37	50.8	-4.0	86	22+	22	9	0	12	38	63	1.75	-1.29	1.22	9	0	.0	0	6.8	NNW	29	N	7	5	11	15	6.6	5
Mt. Washington	6262	803.9	- - -	35	19	27.2	-8.1	53	31	-1	8	0	27	--	--	7.75	2.43	2.39	18	0	31.1	11	39.6	W	%89	W	10	2	12	17	7.7	4

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation								Wind				No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p h		M p h			0–3	4–7	8–10	0–10	%
NEW JERSEY																																
Atlantic City (U)	8	1017.0	------	62	50	56.0	-3.1	88	13	41	17	0	0	--	-	2.26	0.62	0.55	13	1	0.0	0	17.4	-	42	SW	27	7	14	10	5.6	64
Newark	11	1017.3	1018.5	69	49	58.9	-2.2	92	13+	38	8+	2	0	43	59	2.16	1.28	.68	14	5	T	T	11.0	SSW	*27	NW	4	7	13	11	6.0	
Trenton (U)	56	1011.3	1018.2	70	48	59.1	-2.7	90	31	39	9+	1	0	--	-	1.93	-.55	1.38	15	9	.0	0	10.4	-	34	NW	1	9	14	8	5.4	67
NEW MEXICO																																
Albuquerque	5310	847.6	1009.6	85	54	69.6	1.3	97	31	41	15	10	0	23	21	.18	-.69	.13	3	3	.0	0	9.8	S	46	SE	31	17	10	4	3.4	90
Clayton	4969	845.6	1011.8	81	49	64.8	4.9	92	12+	37	15	1	0	--	-	2.87	.28	2.27	8	4	.0	0	-- -	- -	-	-	--	15	5	11	4.4	--
Raton	6379	805.3	1011.1	79	43	60.6	1.9	88	9+	29	15	0	1	--	--	1.18	-.99	.65	5	7	T	0	- --		-	-	--	12	9	10	4.7	--
Roswell	3612	891.6	1010.5	90	53	71.5	3.4	98	12+	41	11	21	0	35	33	.40	.88	.35	4	4	.0	0	11.3	-	50	SW	21	17	10	4	3.1	
NEW YORK																																
Albany	277	1013.4	1017.2	66	41	53.5	-4.0	84	22+	27	9	0	6	41	63	3.08	.28	1.44	18	3	.0	0	9.6	S	38	NW	16	6	4	21	7.3	62
Binghamton	1601	957.9	1017.4	62	40	50.9	-4.0	82	22	25	17	0	8	39	66	3.13	-.74	.92	15	4	T	0	12.1	NW	42	NW	16	4	3	24	8.0	53
Buffalo	693	989.7	1017.8	63	43	53.1	-2.3	79	11+	29	8	0	3	43	70	4.61	2.14	1.02	17	6	T	0	13.1	SW	52	SW	11	1	8	19	7.2	58
New York (U)	10	1017.2	---	66	48	57.2	-3.6	88	13	36	8	0	0	--	--	2.20	-1.31	.80	16	3	.0	0	14.9	-	48	NW	4	6	15	10	5.7	43
New York	19	1016.8	1018.7	68	50	58.9	-2.4	91	31	38	8	1	0	44	61	2.59	-.74	.82	16	4	.0	0	13.7	S	43	NW	4+	7	14	10	6.0	-
Rochester	543	998.1	1017.4	63	42	52.4	-4.0	82	22	29	17	0	6	42	69	3.83	1.19	1.20	17	5	T	0	12.7	SSW	58	SW	14	5	11	15	6.9	57
Schenectady	217	------	------	67	44	55.4	-2.7	86	22	32	8+	0	2	--		3.23	.25	1.55	11	--	.0	0	---	---		-	--	14	14	3	4.0	
Syracuse	424	996.0	1018.1	65	42	53.4	-4.3	86	14	28	8	0	1	41	63	3.03	.13	.85	16	6	T	T	9.5	WNW	43	NW	14	6	6	19	7.0	58
NORTH CAROLINA																																
Asheville (U)	2203	------	----	77	55	65.7	2.3	89	14	40	17	0	0	--	--	1.65	-1.38	.76	10	5	.0	0	7.9	-	33	NW	23	8	10	13	6.0	62
Charlotte	727	992.1	1020.0	81	59	70.0	1.7	95	14	41	9	5	0	58	70	3.98	1.00	1.51	9	6	.0	0	9.1	SSW	38	N	23	7	9	15	6.5	59
Greensboro	891	988.4	1020.3	79	55	66.7	.4	93	14	35	9	4	0	55	68	4.18	.54	3.04	8	5	.0	0	9.4	SW	26	NE	7+	7	10	14	6.5	73
Hatteras (R)	4	1019.3	1020.0	73	60	66.4	1.8	85	14	48	8	0	0	59	79	2.04	1.89	.76	6	5	.0	0	15.2	S	15	N	8	8	8	15	6.2	70
Raleigh	433	1006.0	1019.8	80	55	67.5	.2	93	14	32	9	4	1	56	68	1.88	-1.52	.87	6	5	.0	0	9.8	SW	*25	NE	22	9	9	13	5.8	77
Wilmington	30	1018.7	--- --	80	59	69.7	.3	91	14	42	9	3	0	--	--	9.12	5.69	2.49	10	6	.0	0	12.2	---	41	SE	20	9	12	10	5.6	70
Winston-Salem	967	984.8	1019.9	78	56	67.4	.7	93	14	38	9	4	0	55	67	1.93	2.00	.83	8	7	.0	0	9.1	WSW	*28	NE	8	7	8	16	6.5	--
NORTH DAKOTA																																
Bismarck	1650	954.6	1015.2	66	43	54.9	.1	88	21	24	4	0	2	40	63	3.83	1.89	1.10	14	5	T	T	13.2	E	52	NW	30	9	7	15	6.3	54
Devils Lake (U)	1471	961.7	----	63	41	51.7	-1.3	85	21	29	1	0	5	--	--	1.56	-.57	.55	10	2	.4	T	9.4	--	29	NW	14	8	8	15	6.4	63
Fargo	895	981.0	1015.5	65	41	53.3	-1.7	83	21	28	1	0	4	39	62	1.63	-.54	.89	11	2	.0	0	15.8	N	54	NW	16	7	9	15	6.8	52
Williston (U)	1877	947.5	1015.2	65	44	54.1	.5	88	21	26	3	0	4	39	59	1.86	.20	.49	9	1	T	0	8.2	---	35	W	11	5	11	15	6.8	57
OHIO																																
Akron	1210	980.3	1018.7	68	45	56.2	-2.3	82	13+	30	24	0	4	46	70	9.60	5.85	2.70	15	8	T	0	11.3	SW	--	--	-	5	8	18	6.9	--
Cincinnati Obs.	761	------	------	75	54	64.1	.5	89	13	37	8	0	0		-	5.71	2.17	2.56	11	6	.0	0	6.7	---	27	W	17	-	--	--	---	54
Cincinnati	869	986.0	1018.0	74	53	63.3	.8	87	13	38	1+	0	0	51	66	7.04	3.59	3.71	11	6	.0	0	11.7	SW	*29	SSW	9	3	13	15	6.9	--
Cleveland	787	989.7	1017.9	68	48	57.8	-1.3	86	30	35	25	0	0	47	69	5.49	2.76	1.76	14	9	T	0	14.3	S	57	NW	12	3	10	18	7.1	54
Columbus (U)	724	------	- --	72	52	61.8	.4	88	13	38	1+	0	0	--	--	5.06	1.83	1.42	14	9	.0	0	----	---	-	---	--	--	--	-	--	--
Columbus	815	988.2	1018.3	73	50	61.3	.5	88	13	35	8	0	0	49	66	4.85	.88	1.50	12	9	.0	0	10.1	SSW	42	NW	17	4	12	15	6.7	57
Dayton	1002	981.6	1018.0	71	51	61.2	.2	87	13	35	1+	0	0	50	68	4.02	.48	1.51	13	7	.0	0	11.8	SSW	42	W	22	4	12	15	7.3	57
Sandusky (U)	603	995.4	---	68	49	58.5	-.8	88	13	39	1+	0	0		--	4.79	1.47	1.75	15	10	.0	0	8.6	-	46	NW	22	9	10	12	5.8	70
Toledo	676	991.9	1017.5	69	47	57.8	--	88	13	31	8	0	1	45	70	4.73	---	1.89	17	8	.0	0	12.0	SSW	40	SW	11	5	11	15	6.8	64
Youngstown	1178	975.6	1018.5	67	44	55.5	2.8	86	13	30	1+	0	7	45	71	5.79	1.70	1.50	17	8	.1	T	11.5	SSW	*40	WSW	30	6	7	18	6.9	--
OKLAHOMA																																
Oklahoma City	1280	970.9	1013.8	83	62	72.6	4.6	95	18	50	3	8	0	58	67	5.07	.82	1.74	7	6	.0	0	14.7	SSE	50	SW	13	10	9	12	5.5	70
Tulsa	672	990.2	1014.5	83	63	72.9	4.7	94	20	47	3	8	0	61	68	5.13	.36	3.14	9	6	.0	0	11.3	S	32	S	10	9	9	13	6.0	57
OREGON																																
Astoria	■	1017.3	1018.1	62	46	53.9	.4	82	17	37	13	0	0	47	79	1.43	-2.10	.35	13	1	.0	0	7.0	WNW		---	-	4	11	16	7.1	--
Burns (U)	4140	872.7	1014.8	68	42	54.9	.8	86	22	29	13	0	3	38	57	1.29	.51	.46	15	5	T	0	--				-	6	8	17	6.9	--
Eugene	361	1004.1	1017.8	68	45	56.6	.2	87	17	36	1	0	0		--	2.17	.18	.84	11	1	.0	0	7.1	--	--	---	--	9	4	18	6.5	
Meacham	4050	------	------	61	40	50.3	2.3	81	17+	26	13	0	7		--	5.68	3.31	1.03	19	8	4.0	T	---	---	-	---	-	7	6	18	6.7	--
Medford	1312	968.8	1016.4	73	46	59.1	.4	90	16+	36	1	3	0	46	68	4.18	2.96	1.67	14	5	.0	0	5.2	WNW	*25	SE	18	14	3	14	5.6	--
Pendleton	1492	961.7	1015.0	73	50	61.2	1.4	93	18	39	12+	3	0	45	59	2.82	1.85	1.14	12	5	.0	0	8.9	SE	*35	WNW	30	10	5	16	6.2	--
Portland	21	1011.5	1017.0	70	48	59.1	1.5	89	17	36	13	0	0	48	71	2.50	.74	.67	11	2	.0	0	7.4	WNW	40	SW	30	7	6	18	6.6	55
Roseburg	505	998.3	1016.9	70	44	57.2	.4	95	17	34	1	2	0	-	--	3.00	1.27	.83	12	4	.0	0	4.0	---	18	N	27	10	5	16	6.3	50
Salem	195	1009.8	1017.1	72	45	58.6	1.4	95	17	35	13	1	0	47	70	1.61	-.32	.46	11	1	.0	0	6.9	S	--		-	9	3	19	6.6	-
Sexton Summit (R)	3836	------	------	62	43	52.1	1.6	81	17+	29	11	0	5	-	--	2.82	.87	.55	13	6	2.9	T	-	---	-	-	--	12	4	15	5.8	--
PENNSYLVANIA																																
Allentown	376	1004.7	1019.0	69	45	56.8	3.7	87	13+	31	9	0	2	45	66	3.83	-.14	1.65	19	9	.0	0	11.4	WSW	-	--		6	14	11	6.0	--
Harrisburg	335	1004.8	1018.7	71	48	59.7	-2.7	89	31	34	17	0	0	43	58	2.43	-1.27	.62	14	7	T	0	8.3	WSW	44	SW	31	4	14	13	6.4	71
Philadelphia (U)	26	------	------	70	51	60.9	2.8	88	14+	43	9+	0	0	--	--	2.97	-.61	1.01	11	-	.0	0	-	---	-	---	-	--		-	---	--
Philadelphia	10	1014.2	1018.6	72	50	60.9	-2.2	92	14	37	17	2	0	45	60	3.84	.26	2.09	11	8	.0	0	11.1	SW	47	NE	6	6	14	11	6.2	61
Pittsburgh (U)	749	------	------	72	50	61.0	-1.6	87	14	37	5+	0	0	--	--	6.08	2.59	1.66	14	--	.0	0	-	-	-	---	-	--	--	--	---	39
Pittsburgh	1151	987.7	1018.4	69	48	58.5	1.3	85	14	32	17+	0	2	46	65	5.90	2.13	1.65	13	4	.0	0	12.4	WSW	*40	NW	6	3	10	18	7.0	47
Reading (U)	266	1006.3	1018.3	71	49	60.1	-2.4	90	14+	37	17	2	0	-	--	2.95	-.74	.99	16	6	.0	0	11.3	---	45	NE	6	6	13	12	6.3	61
Scranton	940	984.1	1018.7	67	43	54.7	1.2	85	14+	30	8+	0	4	41	60	2.25	-1.86	.71	13	6	.0	0	10.4	WSW	40	NW	11	4	9	18	7.1	49
Shippingport (U)	736	------	- --	70	45	57.2	---	85	14	30	25	0	6	--	--	7.01	- -	1.27	14	6	.0	0	2.7	---	%51	W	30	-	-	--	---	--
Williamsport	527	999.1	---	70	44	56.9	-3.3	89	14	31	17+	0	2	-	-	3.33	-.98	.70	15		.0	0	---	-	-			5	10	16	6.9	--
RHODE ISLAND																																
Block Island	110	1013.9	1018.2	57	43	49.8	-4.4	75	13	34	9	0	0	--	--	2.72	.24	1.01	12	3	.0	0		-	--	--		6	12	13	6.3	
Providence	55	1011.7	1017.8	64	43	53.4	-3.4	89	31	29	9	0	1	40	63	1.43	-1.59	.49	15	3	.0	0	13.1	SSW	*42	SSW	27	6	12	13	6.3	59
SOUTH CAROLINA																																
Charleston (U)	9	--- -	------	82	67	74.4	1.5	97	23	51	9	4	0	-	--	1.61	1.75	.69	5	5	.0	0	10.3		33	NE	8	14	9	8	4.7	76
Charleston	41	1018.6	1020.3	84	63	73.0	1.6	96	23	48	9	4	0	63	76	4.62	.86	1.79	9	5	.0	0	11.0	S	-	-		8	13	10	5.9	--
Columbia	217	1010.9	1019.2	85	62	73.7	2.0	97	23	44	9	11	0	61	69	1.92	1.31	.89	6	7	.0	0	8.4	SW	23	NE	8	7	11	10	5.7	81
Florence	146	1014.1	------	83	60	71.9	.6	98	14	41	9	7	0	-	-	2.30	1.48	.77	8	4	.0	0	--	--	-	-	-	6	16	9	6.0	--
Greenville	1018	981.7	1019.2	80	60	69.9	1.4	93	14	45	9+	6	0	55	64	3.88	.49	1.80	9	5	.0	0	10.9	WSW	31	E	8	7	10	14	6.4	71
Spartanburg	801	-----	---- -	79	60	69.8	1.0	93	14+	44	9	6	0	-	-	4.80	1.35	2.21	8	6	.0	0	9.2	---	*29	NW	16	-		-	---	--
SOUTH DAKOTA																																
Huron	1282	967.5	1014.6	71	47	58.6	.6	89	27	29	4	0	2	45	64	1.25	-1.00	.39	7	1	T	0	13.3	NNE	50	NW	10	5	9	17	6.6	60
Rapid City	3165	901.1	1014.8	68	45	56.8	2.1	84	8+	29	3	0	3	42	62	2.09	-.96	.71	12	5	T	T	10.9	NNW	40	N	1	3	12	16	7.4	44
Sioux Falls	1420	963.1	1014.5	72	48	60.1	2.0	90	27+	28	4	2	1	42	57	1.31	2.07	.69	6	3	.0	T	12.9	SSE	*37	NW	16	6	11	14	6.5	--
TENNESSEE																																
Bristol	1519	965.3	------	79	55	66.8	2.6	88	13	40	17	0	0	--	--	3.18	-.26	1.03	11	6	.0	0	- -	-	--	---	-	5	13	13	6.4	-
Chattanooga	670	991.9	1019.3	83	59	70.8	3.1	93	22	42	17	7	0	59	72	3.01	-1.15	1.00	9	7	.0	0	6.8	S	37	W	7	8	11	12	5.8	65
Knoxville	950	984.4	1019.6	81	59	69.9	2.5	91	22	44	17	1	0	57	68	3.27	-.31	1.28	11	4	.0	0	8.2	WSW	43	NW	23	8	9	14	6.3	63
Memphis (U)	271	------	------	81	65	73.1	2.6	88	29+	53	1	0	0	-	--	6.38	2.73	4.08	11		.0	0	---	---	--	---	--	-	--	--	--	--
Memphis	263	1003.6	1018.1	83	64	73.2	3.1	91	23	53	1	2	0	62	71	3.41	-.51	1.51	8	7	.0	0	11.0	S	32	E	15	8	11	12	5.7	65
Nashville	577	999.0	1018.9	81	59	70.2	2.0	93	22	47	17	3	0	59	71	2.87	-.91	1.24	10	8	.0	0	8.2	S	41	W	31	10	8	13	5.7	71
Oak Ridge (R)	905	986.5	------	80	58	69.1	2.5	91	22	42	17	1	0		--	4.44	.26	1.68	11	7	.0	0	5.1	--	40	-	23	10	6	15	6.0	--
TEXAS																																
Abilene	1759	952.9	1012.7	89	65	76.9	5.2	96	13+	52	16	18	0	56	53	.15	3.53	.07	3	4	.0	0	15.0	SSE	47	S	13	13	12	6	4.2	79

See footnotes at end of table

CLIMATOLOGICAL DATA

Table 2—Continued

State and station	Elevation of ground	Pressure		Temperature												Precipitation							Wind					No. of days				
												No. of days							No. of days		Snow, Sleet				Fastest mile			(sunrise to sunset)				
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F	°F.	°F	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
TEXAS (Cont'd.)																																
Amarillo	3590	888.3	1011.1	85	55	70.1	6.3	96	12	41	15	13	0	43	19	1.99	-1.02	0.66	7	8	0.0	0	18.7	SSW	47	SW	10	10	13	8	5.0	80
Austin	615	[illegible]	1015.1	90	67	78.7	3.5	96	31	58	16	23	0	63	63	3.12	-1.25	2.92	6	3	.0	0	11.5	SSE	45	NE	31	11	12	8	5.0	66
Brownsville	16	1012.5	1014.8	87	70	78.8	-.1	90	15	61	18	1	0	69	76	.48	-2.88	.48	1	1	.0	0	15.2	SE	32	SE	13	11	16	4	4.7	78
Corpus Christi	[illegible]	1011.2	1015.3	85	69	77.2	-.2	89	31	60	18	0	0	70	82	3.60	.19	2.83	3	2	.0	0	11.9	SE	34	SE	2	7	13	11	5.8	86
Dallas	487	996.6	1015.0	89	68	78.3	4.6	97	19	56	16	18	0	63	64	4.12	-.85	3.29	5	3	.0	0	14.1	SSE	41	SE	29	10	11	10	5.5	66
Del Rio	1091	979.3	1012.9	94	69	81.3	3.9	99	6+	57	3	25	0	58	50	.03	-2.44	.02	2	0	.0	0	14.2	---	30	SE	28	10	12	9	5.3	61
El Paso	3920	884.5	1009.5	91	61	75.7	4.1	99	31	46	11	22	0	27	18	T	-.41	T	0	1	.0	0	12.4	SSE	36	W	14	24	5	2	2.2	94
Fort Worth	544	994.6	1014.9	88	67	77.7	4.4	96	18+	54	16	18	0	61	62	3.83	-1.09	2.75	5	3	.0	0	13.2	S	*41	NNE	31	11	14	6	5.1	--
Galveston (U)	7		- -	82	74	77.8	2.1	87	8	62	2	0	0		--	1.00	-2.20	.72	4	--	.0	0	12.3	---	55	W	2	--	--	--	---	87
Galveston	5	1016.9	1017.1	83	73	77.8	1.9	86	8+	58	2	0	0	69	77	.87	-2.62	.54	4	1	.0	0	12.9	S	-	-	--	9	15	7	5.2	--
Houston (U)	41	1011.2		87	70	78.5	2.6	92	19	61	2	7	0	-	-	2.07	-2.77	1.90	7	5	.0	0	10.8	-	30	SE	1+	7	16	8	5.3	71
Houston	50	1013.9	1016.4	87	68	77.3	2.6	92	18+	59	17	8	0	67	76	3.32	-1.59	2.88	7	4	.0	0	11.1	S	--	---	--	5	19	7	5.4	--
Laredo	500	998.3	1013.2	93	71	82.1	.9	99	13+	62	3	25	0	65	62	3.80	.62	2.96	5	3	.0	0	15.6	SE	*40	SSE	2	10	11	10	5.2	--
Lubbock	3243	902.1	1011.3	88	57	72.7	4.9	96	30	45	16	18	0	50	51	1.80	-1.56	.69	8	9	.0	0	16.6	S	*43	NNW	23	14	15	2	4.0	--
Midland	2854	921.4	1011.6	90	63	76.4	3.8	97	6	52	16	18	0	50	46	1.41	-.66	.59	5	5	.0	0	10.8	SSE	*28	NE	7	14	8	9	4.5	--
Port Arthur	16	1015.9	1017.3	87	69	77.6	3.2	93	19	62	2+	6	0	69	77	6.39	1.99	3.45	9	6	.0	0	10.6	SSE	34	N	2	9	14	8	5.1	67
San Angelo	1903	946.8	1012.9	89	65	76.9	3.3	96	6	50	16	11	0	54	51	.48	-2.48	.23	4	3	.0	0	13.5	S	*39	NE	2	13	11	7	4.4	--
San Antonio	792	990.2	1014.8	90	68	78.9	2.9	97	13	56	17	21	0	61	62	3.07	-.45	2.23	4	3	.0	0	11.4	SSE	40	NE	31	7	17	7	5.3	74
Victoria	110	1010.8	1015.5	88	68	78.2	.8	93	30+	61	19	10	0	66	68	2.50	-1.52	2.19	3	3	.0	0	12.2	--	%43	E	2	6	18	7	5.4	--
Waco	500	996.6	1015.0	90	67	78.2	3.7	95	18	53	16	21	0	63	63	4.25	.10	3.34	6	5	.0	0	14.9	S	--	-	--	10	14	7	5.1	--
Wichita Falls	1020	977.3	1013.3	89	65	76.6	6.1	97	13	54	16	18	0	59	59	7.06	3.20	2.14	9	8	.0	0	13.0	SSE	*35	SE	27	13	10	8	4.7	—
UTAH																																
Milford	5028	842.9	1012.6	76	43	59.3	2.5	90	31	30	15	1	1	--	—	.51	-.23	.25	5	4	T	0	---	---	--	--	--	8	12	11	5.5	--
Salt Lake City	4220	865.9	1012.3	71	47	60.4	1.5	93	31	33	13	1	0	42	55	2.33	.77	1.06	11	9	T	0	9.2	SSE	33	S	9	8	9	14	6.1	60
VERMONT																																
Burlington	331	1001.5	1016.6	62	38	50.0	-5.4	83	31	28	8+	0	10	36	59	4.74	1.85	2.09	13	2	.3	0	10.1	S	40	S	11	4	9	18	7.0	57
VIRGINIA																																
Lynchburg	947	985.2	- --	76	53	64.5	-.5	92	13+	36	9	4	0	--	--	2.37	-.72	.85	9	3	.0	0	9.0	---	31	NW	17	6	12	13	6.5	63
Norfolk	26	1019.0	1020.1	75	53	64.3	-1.6	97	14	36	9	4	0	54	71	2.57	-.88	1.18	8	3	.0	0	10.6	SSW	31	S	27	10	8	13	5.9	68
Richmond	162	1014.0	1019.7	78	53	65.0	-.8	94	13+	31	9	4	1	53	68	4.35	.71	1.07	13	8	.0	0	9.1	SSW	39	SW	23	7	14	10	6.0	75
Roanoke	1174	977.5	1019.5	78	54	65.7	1.0	93	14	37	17	6	0	51	62	1.58	-2.04	.45	11	2	.0	0	8.7	WSW	--	- -	--	5	12	14	6.4	--
WASHINGTON																																
Olympia	190	1009.8	1017.1	71	44	57.3	3.2	92	30	33	13	3	0	42	62	.30	-1.36	.12	3	1	.0	0	7.3	SW	*29	WSW	10	8	7	16	6.3	--
Seattle (C)	14	-	-	69	50	59.6	2.3	88	30	42	13	0	0			.68	-.93	.25	6	0	.0	0	8.6	---	28	SW	30	9	10	12	6.0	63
Seattle	14	1016.6	1017.3	--			--		-	--		-	--	45	63	--		-	--	-			7.5	NW	-	--	--	-	--	--	---	--
Seattle-Tacoma	376	1003.1	1017.8	67	46	56.8	1.7	87	30	37	13	0	0	45	67	.83	-.81	.44	5	0	.0	0	12.3	SW	*35	SW	10	7	9	15	6.5	--
Spokane	2357	946.2	1014.9	71	46	58.1	3.4	89	31	32	12+	0	2	41	56	.59	-.45	.22	7	3	.0	0	7.6	NE	29	NW	23	9	8	14	6.0	63
Stampede Pass (R)	3958	880.1	1018.6	55	39	46.8	2.3	76	18	27	11	0	8	—	.	1.84	-2.90	.70	13	1	6.2	127	---	--	--	---	--	9	6	16	6.3	--
Tatoosh (R)	101	1014.9	1018.0	56	47	51.5	.6	69	17	43	3	0	0	46	84	1.07	-2.24	.50	7	0	.0	0	11.9	W	38	S	30	7	9	15	6.6	53
Walla Walla (U)	949	979.7	1015.2	73	51	62.2	1.0	92	30	40	11	3	0	--		2.03	.77	.97	12	6	.0	0	5.6	--	24	W	30	10	4	17	6.1	61
Yakima	1061	976.0	1014.8	76	46	61.3	2.2	92	17+	32	11	4	1	41	51	.48	.01	.19	6	5	.0	0	7.5	WNW		---	--	11	9	11	5.7	—
WEST VIRGINIA																																
Charleston	950	983.0	1018.4	77⁴	52	64.4	.7	90	13	33	25	1	0	51	65	4.36	.58	1.69	14	4	.0	0	7.4	SW	*32	NW	22	4	13	14	6.9	—
Elkins	1970	- ---	----	72	45	58.2	.0	84	11	29	17	0	3	48	-	5.78	1.53	1.38	16	7	.0	0	8.0	WSW	*40	N	7	3	13	15	7.2	--
Huntington (U)	565		-- -	78	53	65.7	.0	91	13	40	17+	3	0	--		3.52	-.30	1.41	11	--	.0	0	--	---	--	--	--	--	--	--	---	--
WISCONSIN																																
Green Bay	689	993.2	1016.1	63	41	52.1	-2.3	87	22	27	8	0	4	41	70	4.66	2.13	2.73	19	10	.0	T	11.4	SW	40	W	22	6	10	15	6.5	62
La Crosse	652	990.2	1014.8	68	49	58.6	-.4	89	12	36	16	0	0	46	64	5.68	2.41	2.61	14	9	.0	T	11.9	S	*32	ESE	10	4	12	15	6.7	—
Madison (R)	857	980.7	1015.9	68	46	57.0	-.5	90	22	31	8	1	1	45	68	5.11	1.84	2.01	12	8	.0	0	11.8	WSW	47	W	12	6	12	13	6.6	69
Milwaukee	672	991.2	1016.5	64	43	53.7	-.6	90	22	35	4+	1	0	43	70	4.55	1.57	1.12	16	9	.0	0	14.8	NNE	59	W	14	4	13	14	6.7	54
WYOMING																																
Casper	5322	836.4	1012.1	69	43	55.9	2.8	82	24	29	14	0	2	37	57	1.97	-.35	.75	12	12	3.8	T	13.0	WSW	*37	W	11	6	10	15	6.4	--
Cheyenne	6131	811.7	1013.0	67	43	54.8	4.7	80	17	32	13+	0	2	35	56	2.56	.10	.85	10	8	.6	T	13.2	SSE	56	NW	10	3	14	14	6.8	55
Lander	5563	834.7	1013.4	68	43	55.3	2.9	81	19+	29	4+	0	5	36	55	3.64	1.07	1.88	9	6	11.0	4	6.9	-	50	SW	11	5	13	13	6.3	63
Sheridan	3942	883.8	1015.1	67	44	55.3	2.4	84	19+	27	3	0	2	43	68	4.94	2.30	2.04	15	8	1.8	1	8.9	NW	54	W	10	6	6	19	7.1	48
PACIFIC AREA																																
Canton Island	9	1009.1	1009.4	87	78	82.7	-1.5	89	4+	73	10	0	0	74	78	4.03	1.17	2.45	8	0	.0	0	----	---	--	---	—	9	10	12	6.0	--
Hilo	31	1016.3	1017.6	79	65	72.1	-1.0	82	28	61	6	0	0	66	83	14.45	5.45	4.20	30	1	.0	0	8.3	WSW	23	S	6	0	2	29	9.5	11
Honolulu	7	1017.3	1017.8	82	70	75.8	-.3	84	17+	67	1+	0	0	63	66	1.01	.61	.63	8	0	.0	0	12.7	ENE	34	NE	19	5	14	12	6.7	73
Koror (R)	[illegible]	1005.8	1009.5	87	75	81.3	.0	89	14+	72	29	0	0	76	86	22.78	8.63	4.48	25	2	.0	0	-- -	--	--	---	--	0	8	23	8.9	--
Lihue	117	1012.9	1018.1	81	69	75.1	1.0	84	23+	64	21	0	0	66	76	1.21	-1.30	.41	16	0	.0	0	11.7	NE	28	NE	8	1	9	21	8.2	21
Majuro	10	1009.1	1009.5	85	77	80.6	---	87	12+	73	19+	0	0	75	85	22.23	---	5.08	27	1	.0	0	-	---	--	---	--	1	5	25	8.7	--
Ponape (R)	118	1004.1	1009.7	86	74	80.1	-1.4	90	21	71	10+	1	0	76	88	23.40	3.74	4.14	30	4	.0	0	--	---	--	---	--	0	3	28	9.0	--
Truk (Moen Is.)	8	1009.8	1010.0	85	75	80.1	-.8	88	5	73	9+	0	0	76	84	17.11	4.21	2.05	28	3	.0	0		---	--	- -	--	0	5	26	9.0	--
Wake Island	11	1015.6	1015.9	81	74	79.4	.0	87	30	72	13+	0	0	72	79	1.53	-.78	.41	19	0	.0	0	19.7	ENE	--	---	--	9	10	12	6.3	--
Yap (R)	53	1007.5	1009.6	88	76	81.7	-.6	91	8+	73	30	6	0	76	84	12.17	3.02	2.03	26	1	.0	0	- -	--	--	---	—	0	0	31	10.0	--
WEST INDIES																																
San Juan, P.R. (U)	17	-	--	83	74	78.4	-.3	92	24	71	29	4	0	--		9.31	2.80	2.97	20	4	.0	0	- -	---	-	---	--	-	--	--	---	--
San Juan, P. R.	15	1013.5	---	86	72	78.6	--	90	21+	69	29	4	0	69	78	9.66	---	2.94	21	4	.0	0	10.4	--	23	NE	7+	0	20	11	7.1	51
ALASKA																																
Anchorage	92	1001.1	1009.6	51	37	44.0	-1.7	57	18+	28	4	0	2	31	60	.44	-.07	.34	7	0	.0	T	8.3	S	*25	SE	6	1	1	29	9.2	38
Annette	110	1014.9	1019.2	57	42	49.4	.4	76	19	33	2	1	0	39	73	10.92	6.43	2.50	14	0	.0	0	10.1	SSE	*35	SSE	21	6	8	17	7.0	--
Barrow	22	1015.6	1016.1	25	16	20.4	1.6	34	3	9	7	0	31	18	89	.01	-.12	.01	1	0	.1	10	13.5	NE	38	NE	10	2	4	25	8.6	--
Bethel	10	1001.4	1002.9	48	34	41.2	1.2	63	25	28	4+	0	16	34	76	.73	-.16	.22	13	0	.7	6	9.7	ESE	*25	N	20	1	5	25	8.7	--
Cold Bay	90	996.6	1000.8	43	34	38.5	-1.0	49	9	29	4	0	8	35	88	1.81	.12	.55	18	0	2.7	1	17.2	SSE	*55	ESE	25	0	2	29	9.3	--
Cordova	10	1011.2	1013.2	46	34	39.9	-3.0	52	20	27	5+	0	7	-	--	9.61	3.17	1.44	26	0	T	31	--	---	--	---	--	1	1	29	9.4	--
Fairbanks	436	989.8	1007.0	60	37	48.5	1.1	70	20	30	15	1	3	34	56	.61	-.13	.43	4	0	.0	T	7.2	N	*24	SW	23	2	12	17	7.7	--
Juneau	15	1015.9	1016.8	53	37	45.2	-1.8	69	5	25	2	0	6	36	74	4.83	1.64	1.06	21	0	.0	0	9.6	ESE	36	SE	20	4	3	24	7.9	30
King Salmon	14	1001.0	1002.7	49	34	41.3	-1.5	60	19	30	2+	0	13	34	76	1.34	.08	.51	17	0	T	T	13.1	S	*38	E	28	0	4	27	9.0	--
Kotzebue	10	1007.8	1008.4	44	29	36.7	7.1	60	27	22	17	0	23	31	81	.11	-.22	.05	4	0	T	19	10.6	[illegible]	*28	E	7	10	7	14	6.0	--
McGrath	334	993.2	1005.9	52	35	43.9	.7	65	25	28	4	0	4	33	64	1.27	.33	.53	13	1	T	7	5.9	E	*20	S	27+	0	6	25	8.7	--
Nome	13	1005.4	1006.0	44	33	38.7	5.0	62	24	25	12+	0	15	32	75	.25	-.34	.07	8	0	.3	10	10.6	NE	30	N	20	3	10	18	7.3	52
Northway	1713	946.2	1009.1	57	31	44.1	-.7	66	20	21	2	0	21	--	--	.39	-.33	.31	4	0	.0	T	---	---	--	- -	--	3	7	21	7.6	--
St. Paul Island	22	1000.3	1001.5	37	29	32.8	-2.4	41	19+	22	18	0	27	30	91	.63	-.55	.17	13	0	2.5	T	---	---	--	---	—	0	4	27	9.2	--
Yakutat	28	1014.6	1015.6	48	35	41.1	-2.2	64	19	23	1	0	7	36	80	16.20	8.28	3.38	20	0	.8	19	9.2	E	*52	SE	20	3	2	26	8.7	--

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates.

% Peak gust

a Maximum hourly average

# Number of days maximum 70° or above for Alaskan stations.

Ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.

HEATING DEGREE DAYS

Table 3

(Base 65°F.)

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	5	2859	2780
Mobile	0	1648	1612
Montgomery	0	2280	2137
ARIZONA			
Flagstaff	406	6727	7313
Phoenix (U)	0	1108	1492
Phoenix	0	1319	1698
Prescott	110	4040	4516
Tucson	0	1473	1776
Winslow	64	4171	4694
Yuma	0	965	951
ARKANSAS			
Ft. Smith	10	3470	3188
Little Rock	12	3116	2982
Texarkana	7	2607	2362
CALIFORNIA			
Bakersfield	26	2066	2115
Bishop	143	4233	4184
Blue Canyon	428	5859	5517
Burbank	91	1757	1786
Eureka (U)	356	4643	4350
Fresno	49	2582	2532
Los Angeles (U)	74	1511	1432
Los Angeles	95	1690	1959
Mt. Shasta (R)	345	5835	5739
Oakland	185	3206	3044
Red Bluff	84	2658	2546
Sacramento (U)	70	2425	2595
Sacramento	68	2603	2815
Sandberg (R)	309	4185	4187
San Diego	57	1509	1531
San Francisco (U)	235	3180	2889
San Francisco	208	3247	3257
San Jose	108	2436	2364
Santa Maria	228	3289	2782
COLORADO			
Alamosa	354	7945	8456
Colorado Springs	203	6116	6179
Denver	143	5748	6067
Grand Junction	71	5090	5773
Pueblo	98	5543	5682
CONNECTICUT			
Bridgeport	304	5852	5858
Hartford	340	6659	6108
New Haven	335	6164	5974
DELAWARE			
Wilmington	199	5273	4904
DIST. OF COLUMBIA			
Washington (U)	115	4414	4258
Washington	121	4514	4333
FLORIDA			
Apalachicola (U)	0	1304	1307
Daytona Beach	0	987	868
Fort Myers	0	418	405
Jacksonville (U)	0	1127	1113
Jacksonville	0	1284	1243
Key West (U)	0	31	77
Miami (U)	0	214	173
Miami	0	188	178
Miami Beach	0	120	123
Orlando	0	733	650
Pensacola (U)	0	1474	1435
Tallahassee	0	1633	1519
Tampa	0	658	674
West Palm Beach	0	272	248
GEORGIA			
Athens	20	3095	2800
Atlanta	9	2876	2826
Augusta	8	2653	2138
Columbus	3	2490	2396
Macon	0	2260	2049
Rome	10	3387	3138
Savannah	1	2001	1710
IDAHO			
Boise	225	5800	5798
Lewiston	205	5885	5415
Pocatello	253	6854	6840
ILLINOIS			
Cairo (U)	35	3913	3756
Chicago (U)	231	5667	
Chicago	212	6182	6252
Chicago University	247	6167	
Moline	155	6583	6319
Peoria	124	6078	6046
Springfield	120	5743	5661
INDIANA			
Evansville	73	4725	4354
Ft. Wayne	225	6344	6234
Indianapolis	162	5768	5581
South Bend	272	6606	6462
IOWA			
Burlington	125	6364	6067
Des Moines	149	6886	6401
Dubuque	242	7513	7195
Keokuk (U)	83	5632	
IOWA (Cont'd.)			
Sioux City	154	7407	6958
KANSAS			
Concordia (U)	94	5792	5303
Dodge City	87	5166	5043
Goodland	147	6207	6309
Topeka (U)	59	5253	4906
Topeka	59	5410	5194
Wichita	52	4886	4564
KENTUCKY			
Lexington	114	4850	4964
Louisville	90	4507	4434
Pikeville (U)	23	3911	
LOUISIANA			
Baton Rouge	0	1556	1595
Lake Charles	0	1342	1543
New Orleans (U)	0	2326	1175
New Orleans	0	1319	1317
Shreveport	0	2189	2117
MAINE			
Caribou	653	9637	9972
Greenville (U)	625	9357	
Portland	516	7902	7564
MARYLAND			
Baltimore (U)	115	4444	4203
Baltimore	172	5031	4782
Frederick	216	5584	4854
MASSACHUSETTS			
Blue Hill Obs. (R)	413	7076	
Boston	304	6101	5749
Nantucket	501	6198	5963
Pittsfield	460	7991	7589
MICHIGAN			
Alpena (U)	487	7988	7938
Detroit	310	6499	6344
Detroit (Willow Run)	291	6585	6414
East Lansing (U)	302	6879	
Escanaba (U)	531	8555	8491
Grand Rapids	316	7035	6996
Marquette (U)	560	8362	8340
Muskegon	366	7076	6973
S. Ste. Marie	633	9185	9251
MINNESOTA			
Duluth (U)	549	9872	9374
Duluth	526	10087	9759
Internat. Falls	578	10999	10429
Minneapolis	246	8561	7773
Rochester	278	8810	8003
St. Cloud	322	9592	8787
MISSISSIPPI			
Jackson	0	2429	2202
Meridian	1	2445	2333
Vicksburg (U)	0	2135	2000
MISSOURI			
Columbia	75	5167	5099
Kansas City	52	5022	4880
St. Joseph	77	5780	5322
St. Louis (U)	66	4640	4462
St. Louis	74	4879	4688
Springfield	62	4803	4677
MONTANA			
Billings	286	7542	6987
Glasgow	315	9779	8577
Great Falls	341	8084	7389
Havre (U)	299	9171	8088
Helena	331	8572	8053
Kalispell	327	8470	7840
Miles City	263	8463	7744
Missoula	296	8103	7697
NEBRASKA			
Grand Island	168	6947	6272
Lincoln (U)	111	6272	5833
Norfolk	173	7623	7005
North Platte	183	7166	6487
Omaha	114	6550	6128
Scottsbluff	192	6916	6760
Valentine (U)	241	7907	6992
NEVADA			
Elko	356	7254	7152
Ely	444	7368	7243
Las Vegas	8	2318	2425
Reno	309	5980	5871
Tonopah	217	5424	5722
Winnemucca	309	6335	6258
NEW HAMPSHIRE			
Concord	443	7807	7530
Mt. Washington	1166	13552	
NEW JERSEY			
Atlantic City (U)	284	5041	4717
Newark	218	5436	5241
Trenton (U)	209	5325	5057
NEW MEXICO			
Albuquerque	20	3857	4389
NEW MEXICO (Cont'd.)			
Clayton	77	4809	5114
Roswell	6	3436	3424
NEW YORK			
Albany	370	7355	6912
Binghamton	443	7787	7449
Buffalo	376	6884	6766
New York (U)	261	5320	5032
New York	214	5147	4979
Rochester	407	7197	6809
Schenectady	308	6861	
Syracuse	387	7179	6483
NORTH CAROLINA			
Asheville (U)	58	4251	4067
Asheville	69	4473	
Charlotte	28	3255	3205
Greensboro	69	4110	3810
Hatteras (R)	40	2845	2392
Raleigh	65	3742	3369
Wilmington	25	2712	2323
Winston-Salem	60	3875	3721
NORTH DAKOTA			
Bismarck	308	9976	8917
Devils Lake (U)	406	11033	9803
Fargo	361	10201	9173
Grand Forks	396	10939	
Pembina	406	10629	
Williston (U)	338	9772	8930
OHIO			
Akron	303	6567	6153
Cincinnati (U)	92	4568	4532
Cincinnati	135	5264	5172
Cleveland	265	6125	5960
Columbus	186	5618	5584
Dayton	184	5835	5558
Sandusky (U)	265	6090	5818
Toledo	271	6687	6334
Youngstown	321	6629	6119
OKLAHOMA			
Oklahoma City	14	3923	3644
Tulsa	29	3766	3584
OREGON			
Astoria	335	5411	4773
Burns (U)	319	7043	6759
Eugene	265	4944	4654
Meacham	452	7892	7561
Medford	205	4592	4478
Pendleton	181	5621	5153
Portland (U)	161	4411	4073
Portland	201	4938	4539
Roseburg	247	4585	
Salem	213	4870	4483
Sexton Summit (R)	416	6517	5947
PENNSYLVANIA			
Allentown	278	6143	5855
Harrisburg	202	5541	5244
Philadelphia (U)	163	4871	4523
Philadelphia	170	5154	4866
Pittsburgh (U)	184	5278	5035
Pittsburgh	242	5997	5869
Reading (U)	197	5310	5049
Scranton	338	6765	6012
Williamsport	280	6242	5873
RHODE ISLAND			
Block Island	464	6083	5747
Providence	365	6366	6067
SOUTH CAROLINA			
Charleston (U)	4	1886	1769
Charleston	6	2229	1973
Columbia	9	2708	2435
Florence	16	2659	2507
Greenville	29	3246	3060
Spartanburg	31	3257	3044
SOUTH DAKOTA			
Huron	232	9141	7822
Pierre	221	8662	
Rapid City	270	7604	7387
Sioux Falls	221	8680	7768
TENNESSEE			
Bristol	42	4412	4148
Chattanooga	10	3472	3384
Knoxville	14	3754	3590
Memphis	7	3255	3137
Nashville	21	3735	3513
TEXAS			
Abilene	0	2583	2657
Amarillo	24	4182	4345
Austin	0	1600	1713
Brownsville	0	455	617
Corpus Christi	0	812	1011
Dallas	0	2328	2272
Del Rio	0	1440	1407
El Paso	0	2244	2641
Ft. Worth	0	2391	2361
Galveston (U)	0	1019	1211
Galveston	0	1044	1233
Houston (U)	0	1152	1276
TEXAS (Cont'd.)			
Houston	0	1236	1388
Laredo	0	748	781
Lubbock	7	3487	3587
Midland	0	2524	
Port Arthur	0	1376	1517
San Angelo	0	2257	2107
San Antonio	0	1461	1579
Victoria	0	1091	1126
Waco	0	2040	2025
Wichita Falls	0	3048	3025
UTAH			
Milford	189	5831	6368
Salt Lake City	172	5561	5785
VERMONT			
Burlington	470	8146	7793
VIRGINIA			
Lynchburg	108	4429	4148
Norfolk	121	3720	3454
Richmond	107	4213	3955
Roanoke	87	4414	4152
WASHINGTON			
Olympia	248	11312	5318
Seattle (U)	179	4849	4331
Seattle-Tacoma	260	5660	5120
Spokane	252	7100	6706
Stampede Pass (R)	557	9651	8711
Tatoosh Island (R)	410	6031	5394
Walla Walla (U)	158	5360	4810
Yakima	154	6661	5792
WEST VIRGINIA			
Charleston	112	4779	4409
Elkins	233	6046	5720
Huntington (U)	188	4636	4068
Parkersburg (U)	144	5022	4737
WISCONSIN			
Green Bay	402	8557	8152
La Crosse	242	8124	7576
Madison (U)	269	7396	7221
Madison	281	7525	7335
Milwaukee	370	7172	7096
WYOMING			
Casper	278	7281	7492
Cheyenne	310	7169	7389
Lander	298	7825	8140
Sheridan	308	7964	7742
ALASKA			
Anchorage	644	11943	10450
Annette	477	7762	6775
Barrow	1376	20635	19061
Bethel	732	13739	12508
Cold Bay	814	10248	
Cordova	771	10673	9144
Fairbanks	505	15143	13965
Juneau	605	9894	8546
King Salmon	728		
Kotzebue	872	16050	15500
McGrath	645	15410	14107
Nome	807	14650	13510
Northway	644	16833	15194
St. Paul	992	11153	10134
Yakutat	734	9868	8889

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Conway Springs (near), Sumner County	1	5:30 a.m.							Electrical	Lightning struck home in northeastern part of town, damaging most electrical appliances and started fire in house, which was soon extinguished.
OKLAHOMA Sallisaw, Sequoyah County	1	A.m.				1	3	1	Electrical	Man severely burned when struck by lightning while shaving.
OKLAHOMA Rosedale, McClain County	1	Morning						1	Electrical	Lightning struck farm home and resulting fire completely destroyed the home and all contents.
OKLAHOMA Winding Stair, Le Flore County	1	Day						1	Electrical	Lightning struck and damaged communication network at Winding Stair Tower; antenna snapped off and wiring was melted and fused.
OKLAHOMA Texas County	1	6-7 p.m.	20				2		Hail, wind, and rain	Hail up to 1-1/2 inches in diameter did considerabl crop damage over large area of approximately 144 square miles in southern Texas County. Little damage resulted from 70-m.p.h., wind. Storm moved southeastward.
OKLAHOMA Harmon County	1	10:45-11:30 p.m.	40	*10			4	4	Hail, wind, electrical, and rain	Hailstones as large as hens' eggs and high winds caused damage to crops, buildings, roofs, windows, trees, etc. 3 cows and many calves killed by hail. Crop damage from hail heaviest near Madge and near Gould where approximately 16 square miles of crops destroyed. Heavy rain caused considerable flooding and numerous bridges washed out. Storm moved southeastward.
OKLAHOMA Jackson County	1	11:55 p.m.				1	4	4	Wind, hail, and rain	Severe thunderstorm dropped about 4 inches of rain in 30-minute period over Altus. This, along with severe winds and hail, caused damage to drive-in theater, buildings under construction, roofs, windows, trees, TV antennas, barns, and outbuildings. Considerable flooding occurred in Altus business district and school basements. 1 TV antenna built to withstand 80-m.p.h., winds toppl and milling company storage tanks built to stand winds up to 110 m.p.h., received damage. Estimate 1,000 TV antennas toppled. Hail damage to crops extensive in vicinity of Duke and Eldorado, although damaged area confined to about 8 square miles. 1 person injured when trailer house blown over. Storm moved southeastward.
	1									Minor storms also reported at Sterling, Alaska; at Duncan, Okla.; and in Branchville, S.C.
TEXAS Central portion	1-2		100	*275	4	0	6		Rain, wind, hail, and tornadoes	Flash floods. Excessive rains began afternoon of April 29. Occurred in Brown, Callahan, Coleman, Coryell, Erath, Lampasas, McLennan, Mitchell, Nolan, Taylor, Bell, Hamilton, and Bosque Countie Most flooding confined to area bounded by Dublin, Stephenville, and Hico, in Erath and Hamilton Counties, also heavy flooding in Brownwood area, Brown County, where 200 homes abandoned temporari on 2d, about 50 of which not useable for 2 or 3 days. About 75 persons rescued by boats in Valer area, Coleman County. Tornadoes reportedly sighted near Belton, McGregor, Lampasas, Hamilton, Valley Mills, Gatesville, and Rumley. Barn and house demolished at Rumley. Outbuilding destroye southwest of Gatesville. Rains ranged 2 to 14 inch causing serious headwater flooding in Brazos and Colorado Watersheds. Storm moved southeastward.
OKLAHOMA Waurika, Jefferson County	2	After midnight						1	Electrical	Lightning struck equipment company causing fire which resulted in considerable structural damage.
MASSACHUSETTS Milton, Norfolk County	2	Afternoon	1/10		0	0	2	1	Dust devil	Dust devil borne of sea-breeze front moved from east to lift dust; lifted planks and debris into air, and threw 12-foot plank through windshield of automobile. Observers reported roar until twister quickly disappeared into calm air.
ALABAMA Reform and Gordo, Pickens County	2	4 p.m					4	1	Wind, electrical and rain	Lightning at nearby Gordo caused house to burn dow in addition to wind damage at Reform.
FLORIDA Fort Myers, Lee County	2								Rain and wind	Cloudburst, with 50-m.p.h., winds broke trees, knocked down telephone wires, and flooded streets Wind speed reached 48 m.p.h., at Weather Bureau Airport Station.
	2									Minor storms also reported at Demopolis and at Pine Grove, Ala.; and in Atlanta area, Ga.
ALABAMA Red Level (3 miles northeast of), Covington County	3	4:40 a.m.	3	80	0	2	4	1	Tornado, wind, electrical, and rain	Thunder heard to left of path. Light rain shower soon after tornado passed. Although damage occurred on a number of farms and farmstead demolished, there was only 1 eyewitness; he was 1/4 mile to right of path. Tornado moved rapidl northeastward, and as it passed him pecan tree limbs were swayed toward it by the wind. Intensi

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
ALABAMA (Cont'd)										of rain beyond tornado undetermined. Some "light drizzle" had occurred before tornado hit.
GEORGIA Lamar County	3	10:15 a.m.	9	50-400	0	2	5	1	Tornado, rain, and electrical	At Barnesville 6 homes destroyed, 59 others damaged with 19 suffering major damage. Many trees and utility lines downed. Storm moved northeastward across almost entire width of Lamar County, but skipped over part of area.
NORTH CAROLINA Greene, Lenoir, Union, and Wayne Counties	3	3-7 p.m.						4	Hail	8 square miles damaged, mostly in Greene and Union Counties. Greatest loss to tobacco in fields.
SOUTH CAROLINA Hampton County	3	5-5:30 p.m.	10	50	0	0	4	1	Tornado, wind, and rain	Tornado apparently moved northeastward from 1 mile east of Estill to Red Hill section, about 7 miles south of Varnville. At farm near Estill, all outbuildings destroyed, but house unharmed. At farm in Red Hill section, portion of roof of residence destroyed; at farm nearby, tornado severely damaged barn.
OKLAHOMA Woodward, Woodward County	3	7 p.m.	2	100			3	3	Hail, rain, and wind	Hail up to size of golf balls and up to 3 inches deep destroyed crops over 4-square mile area and damaged numerous farm buildings. Storm moved southeastward.
FLORIDA Macclenny, Baker County	3						2		Rain and electrical	4-1/2 inches of rain in less than 2 hours. Home hit by lightning, setting furniture afire. Traffic disrupted and streets flooded.
	3									Minor storms also reported in New Hanover County, N. C.
SOUTH CAROLINA Oswego area, Sumter County	4	3 p.m.				1			Electrical	Lightning struck boy riding on school bus.
ALASKA Copper Center	4-5								Flood	Flood produced by melting snow and ice gorges. No estimate of property damages available.
ALASKA Kuskokwim River Valley	4-14								Flood	Flood produced by melting snow and ice jams. No estimate of property damages available.
FLORIDA Pensacola, Escambia County	5	9:31-9:36 a.m.	3/4	50	0	1	5		Tornado	Tornado cloud observed. Storm moved slowly north-northwestward apparently from the Gulf. Storm apparently lifted and lowered along path as some buildings were not disturbed while others nearly demolished. Windows reportedly broke inward.
IOWA Central and east-central portions	5	Forenoon					4	1	Electrical	Lightning damaged homes and utility lines and destroyed farm buildings.
INDIANA Cutler (near), Carroll County	6	Afternoon			1		1	1	Electrical	Lightning killed 1 person waiting under tree for storm to end.
OKLAHOMA Clinton area, Custer County	6	7:45 p.m.	9				3	3	Hail and rain	Hail up to 1-1/2 inches in diameter fell over large area west of Clinton. Storm moved southeastward.
KANSAS Woodbine area, Dickinson County	6	10 p.m.							Electrical	Granary 1-1/4 miles northwest of Woodbine struck by lightning and burned with its contents of 300 bushels of wheat and 400 bushels of oats, and some farm machinery.
KANSAS Hope (near), Dickinson County	6	10:15-10:45 p.m.					4	3	Electrical and hail	Hail, size of marbles, damaged crops in Hope area. Lightning damage caused $7,000 loss near Acme district. Storm moved eastward.
KANSAS Fairfax district, Wyandotte County	6	11:47 p.m.							Electrical	Lightning struck 1-million gallon gas storage tank of Phillips Petroleum Company. Fire burned for more than 3 hours.
KANSAS Dunlap area, Morris County	6	Night							Hail and rain	Heavy hail damaged crops and some roofs and sidings in area northwest of Dunlap. Stones as large as marbles remained on ground next morning. Indications were that, locally, rain totalled 4 to 5 inches.
FLORIDA Tallahassee, Leon County	6								Rain and wind	Heavy rain, 3.52 inches in 24 hours, flooded streets. High winds knocked down tree limbs and transmission lines; numerous homes without telephone and electrical services.
IDAHO Fruitland (south of), Payette County	6						1		Hail	3 prune orchards south of Fruitland damaged.
	6									Minor storms also reported in Sullivan County, Ind.; at Columbia, Mo.; and near Falls City, Nebr.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
PENNSYLVANIA	6-7	6 p.m.-midnight			1	2	6		Wind, hail, electrical, and rain	Fast-moving cold front across State set off thunderstorms accompanied by high wind, hail, and much lightning. Cloudbursts occurred at many places causing flash floods, highway washouts, and several landslides. Hailstones near Blairsville and also in southeastern counties broke many windows. 60-m.p.h., winds recorded at Pittsburgh blew off several house roofs which left inside furnishings exposed to heavy rains causing additional damage. Winds of lesser intensity howled over State, felling trees, billboards, TV antennas, and miscellaneous material not tied down. Lightning struck and killed 1 man in Bucks County who was working in steel plant at the time. Damage from lightning and resulting fires caused most destruction. In Duquesne, church suffered $10,000 damage when struck by lightning with a repeat performance in Manheim causing another $8,000 damage. Barns destroyed by fire in Union County with $4,200 damage, near Carlisle $6,000 damage, and 2 barns in Berks County $35,000 damage. In Lemoyne, lightning struck warehouse where electrical appliances valued at one-half million dollars destroyed along with $250,000 structure. Numerous electrical transformers hit, blacking out many communities for several hours. Storm moved eastward.
NEW JERSEY Entire State	6-7	P.m. 6th-a.m. 7th			6		4	1	Electrical, rain, hail, and wind	Most significant damage to life and property occurred at seaside resort at Deal, where 5 persons killed by ensuing fire in house struck by lightning shortly after midnight. Several houses and a number of TV antennas struck in Trenton metropolitan area, causing minor difficulties and some property damage. Little or no wind damage apparent; maximum gusts estimated at 30 to 40 m.p.h. Several trees struck by lightning. Storm unusual for its duration rather than its high winds or severity. Storm moved south-southeastward.
NEW JERSEY Woodbine, Cape May County	7	1:15 a.m.	Short	25-50	0	0	4	1	Tornado (suspected), wind, rain, and electrical	Most damage to property appeared to be due to tornado-type winds. Two-thirds of roof of local synagogue blown off, and debris (including many 2x12-inch wooden beams) carried at least 50 yards from building. Door on west side of workshop and storage room blown in when a 2x4-inch bar snapped, resulting in blowing out of entire south wall of cinder-block building. Small frame garage blown off its original location and moved several yards eastward, resulting in little or no damage to automobile within. Storm lasted no more than 3 minutes before subsiding and giving way to rain and further lightning. Wind reported to have roared like express train, with much pounding for very short period. Little or no wind damage anywhere outside narrow, 2-block path.
KANSAS Shawnee County (southeastern portion)	7	Early a.m.					5		Rain	Heavy rain washed considerable soil away from small railroad bridge which caved in and 10 Missouri Pacific freight cars were derailed. 66,000 gallons of jet airplane fuel and 11,000 gallons of propane together with other freight burned. Several hundred feet of track and roadbed needed reconstruction.
SOUTH CAROLINA Myrtle Beach area, Horry County	7	P.m.				1	1	1	Electrical	Lightning seriously injured man standing under tree.
	7									Minor storms also reported at Wilmington, Del.; at Festus, Mo.; in Lea County, N. Mex.; and in Duplin County, N. C.
TEXAS Andrews, Cottle, and Stonewall Counties	7-8	6:35 p.m. 7th-1:45 a.m. 8th	1/4	50	0	1	4		Tornadoes, wind, rain, hail, and electrical	Tornadoes reported at Andrews at 6:35 p.m., Paducah at 1:45 a.m., and at Aspermont at 10 p.m. Most damage due to lightning and wind. 1 person cut by flying glass. Tornado damaged 3 houses at Andrews. Home unroofed, picture window broken, TV antennas twisted or broken, and trees uprooted at Aspermont. Storm moved northeastward, except at Paducah northwestward.
KANSAS Virgil area, Greenwood County	8	8-8:30 a.m.	8	*3					Hail and rain	Heavy rain of 2-1/2 inches fell in 30 minutes. Hail broke windows, some few stones as large as baseballs in area about 4 miles southwest of Virgil. Storm moved northeastward.
MAINE Belfast, Waldo County	8	2 p.m.	1	20	0	0	3	1	Dust devil, waterspout, and wind	Dust devil picked up garage, demolished it and spread debris for from 40 to 130 feet, continuing to pick up loose objects on its path southeastward to Penobscot Bay. Over Bay it appeared as small waterspout, picking up spray to estimated height of 12 to 14 feet, and dissipated after traveling 1/2 mile over water.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
WASHINGTON Adams and Franklin Counties	8	4-6 p.m.					5		Rain and hail	Heavy rain associated with thunderstorm activity caused 50-foot dam located above Connell to give way, flooding sections of town with 2 feet of water and leaving deposit of several inches of silt over lawns and streets. Hailstones, size of marbles, reported in vicinity of Lind. Highways damaged and 2 small washouts reported on Northern Pacific tracks near Lind. Flood water wrecked machine shed near Lind, causing several thousand dollars damage to machinery.
MONTANA Melstone (23 miles north of), Musselshell County	8	Evening			1	1	2	1	Electrical	Man killed and boy injured by lightning strike. 2 horses killed by same strike.
	8									Minor storms also reported at Kansas City and Nevada, Mo.
OREGON Northern half	8-9	P.m.-a.m.	300-400	*150			5	4	Rain and electrical	This storm or series of storms felt over much of the northern half from Portland to State's eastern border, but areas of severe damage scattered as is characteristic of this type of storm. Heavy rains, accompanied in many areas by quite violent lightning displays, occurred at numerous points along practically the full length of northern Oregon. Rainfall intensities varied from moderate showers to short-period torrential downpours. At Bend, new May 24-hour total set; near-record falls occurred at several stations of central and north-central Oregon. In a number of cities, including Prineville, Pendleton, La Grande, Oregon City, and several others, water rushing down from surrounding hills, sometimes in overflowing creeks but often taking a new course, carried rocks and mud into yards, basements, and even business houses and homes in low-lying areas. At La Grande, considerable depth of water seeped into new high school auditorium. In Prineville area, damage particularly severe as 5 highway bridges washed out, another damaged; scores of homes and several places of business inundated. Many roads closed for varying periods by being badly washed or covered with debris particularly in Umatilla, Union, and Crook Counties. Several alfalfa and grain fields similarly covered and some severe erosion occurred on spring-planted or summer-fallow hillside fields. Lightning briefly caused a number of power outages, but over-all damage was insignificant. Just preceding more intense period of this storm there had been considerable lighter rain so that most fields over Columbia Basin grain belt well soaked during this storm period. Spring had been very dry prior to this time and this moisture was extremely valuable to this year's grain crop, and despite locally severe damage, total worth of this storm far exceeded damage it caused. Storm moved westward.
OKLAHOMA Enid, Garfield County	9	6:30 a.m.					3	1	Wind	Wind up to 72 m.p.h., caused minor damage in Enid and severely damaged small plane at airport. Storm moved northeastward.
CALIFORNIA Alhambra, Los Angeles County	9	8:20 a.m.	1/4	10	0	1	4	1	Tornado, wind, and rain	In conjunction with low which moved eastward across southern California on the 9th causing extensive shower activity, small tornado reported. There were several newspaper interviews describing funnel cloud which dipped down to surface, uprooting trees and damaging about 20 homes in narrow strip about 3 blocks long. Confirmed reports described loud sound of tornado as similar to train coming closer and closer. Primary damage to homes was tile and other materials blown from roofs, broken windows, and downed TV antennas. There was little wind either before or after tornado struck.
MICHIGAN Van Buren and Berrien Counties	9	10:15 a.m.	1	Narrow	0	0	4	1	Tornadoes, wind, and rain	Tornado struck farm a short distance northwest of Hartford, badly damaging 3 buildings, then lifted before reaching town. According to newspaper clippings several people reported seeing funnel. Funnels aloft also reported near Coloma, a few miles west of Hartford. Storm moved southeastward.
WASHINGTON Kennewick (10 miles southwest of), Benton County	9	12:45-1 p.m.	Several	Few	0	0	1	1	Tornado, wind, rain, hail, and electrical	Tornado first observed traveling in southeasterly direction over sparsely settled section of Horse Heaven hills approximately 10 miles southwest of Kennewick. Missed all farm buildings and residences in area. Thus, no actual damage reported. Funnel came within 400 yards of Television Station KEPR transmitter located on Johnson Butte. Heavy rain, hail, and severe lightning followed funnel cloud. Heavy rain occurred in other localities of southeastern Washington during afternoon.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	9									Minor storms also reported near Shawnee, Kans.; at Belfast, Maine; and at Independence and Kansas City, Mo.
SOUTH DAKOTA Tyndall area, Bon Homme County	10	3:30 p.m.	5	100	0	2	4		Tornado, wind, rain, hail, and electrical	Storm moved north-northeastward.
NEBRASKA Juniata to Doniphan, Adams and Hall Counties	10	4-6 p.m.	18	Narrow	0	0	4	4	Tornado, hail, wind, and rain	Tornado funnel observed. Crop damage by hail. Property damage by tornado and hail. Storm moved north-northeastward.
SOUTH DAKOTA Marion, Turner County	10	5:45 p.m.	1-1/4	100	0	0	4		Tornado, wind, and rain	Tornado moved eastward.
KANSAS Beloit area, Mitchell County	10	7 p.m.			0	0			Tornado	Farmer, living 10-1/2 miles south and 2 west of Beloit, while milking heard pronounced roar behind him. He observed corn stalks and other litter being whirled high in air. Circulation ceased immediately with no damage done.
KANSAS Rice and Barton Counties	10	7-8 p.m.						1	Wind	High winds over south-central Kansas most severe in Rice and Barton Counties. In and near Lyons trees blown down and a windmill fan damaged.
NEBRASKA Arlington (near), Washington County	10	8 p.m.	Short	Narrow	0	0	3	1	Tornado (suspected), wind, rain, and hail	Struck fairgrounds, skipped over town, then struck farm on other side. Storm moved northeastward.
MINNESOTA Rushmore and Reading areas, Nobles County	10	8:25 p.m.	10	880	0	0	5	1	Tornado, wind, and rain	Approximately 12 farmsteads damaged, as were 20 homes and 8 business places. Trees uprooted and utilities disrupted. Storm moved northeastward.
KANSAS Butler and Chase Counties	10	9:40-10:15 p.m.			0	0	2	1	Tornadoes and wind	Reports indicate 2 funnel clouds observed north of Cassoday, larger one came down to ground between Wonsevu and Clements, but smaller one remained aloft and soon dissipated. Path over open pasture, and some trees broken and windmills damaged from strong side winds. Storm sounded like roar of freight train passing. Severe wind occurred over Bazaar and Cottonwood Falls Townships in central Chase County about 10:45 p.m. Storm moved northeastward.
KANSAS Saline County (southern portion)	10	10 p.m.-midnight							Wind and rain	High winds resulted in spotty damage over southern and central Saline County. Wind gusts reached 55 m.p.h., at Salina CAA Station. A number of porches and roofs damaged. Variable rain contained large amount of dirt which left most everything mud splattered.
KANSAS Concordia, Cloud County	10	Early evening							Wind	High winds in early evening damaged TV antennas, blew down powerlines, and damaged trees.
	10									Minor storms also reported near Clyde, Kans.: and at Oklahoma City and Pawhuska, Okla.
	10-11									Minor storm reported in west-central and east-central Iowa.
ALASKA Yukon River Valley	10-22								Flood	Flood produced by melting snow and ice jams. No estimate of property damages available.
COLORADO Denver, Denver County	11	Evening				2	3		Wind	Canvas tent housing lawn-furniture display at Montgomery Ward store in Denver, torn down by strong gust of wind. 2 of the 6 persons inside tent suffered minor injuries. Canvas and flying poles did slight damage to 4 cars.
INDIANA Northern tier of counties	11	Evening					4	3	Rain, wind, electrical, and hail	Heavy rain caused rivers and creeks to flood lowlands and wash out sections of county roads. Some basements flooded, damaging appliances located in basements. Strong winds blew down a few TV antennas and trees. Lightning and wind damaged utility transmission lines. Car smashed by uprooted tree.
MICHIGAN (Lower), Extreme southern portion	11	Evening	150	*50	0	0	5	1	Tornado, wind, electrical, and rain	Squall line moved eastward across extreme southern Lower Michigan, accompanied by thunderstorms and high winds. Heaviest damage occurred in northeastern outskirts of Kalamazoo where 15 homes and several other buildings damaged. Scattered wind and lightning damage occurred in most of the counties within 50 miles of Indiana and Ohio borders. Funnel sighted aloft near Ann Arbor about 8 p.m.
MICHIGAN Montcalm and Isabella Counties	12	4:05 p.m.	10		0	0	5		Tornado, wind, rain, hail, and electrical	Storm formed near Six Lakes, Montcalm County, and moved northeastward into southwestern Isabella County. 9 barns destroyed and much other farm property damaged.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MICHIGAN Ithaca (east of), Gratiot County	12	4:15 p.m.	5	800	1	1	5		Tornado, wind, rain, and electrical	Tornado formed a few miles east of Ithaca. 1 woman killed; 12 barns destroyed, and much other farm property damaged. Storm moved east-southeastward.
MICHIGAN Clinton County	12	5:02 p.m.	10		0	3	5	2	Tornado, hail, wind, rain, and electrical	Tornado funnel first reported at Hubbardston, then moved southeastward, apparently lifting or dissipating before reaching St. Johns. However, heavy hail and high winds did much damage in St. Johns area. About 30 barns destroyed and many others damaged along funnel's path.
MICHIGAN Laingsburg area, Shiawassee County	12	5:20 p.m.	2		0	0	4	1	Tornado, wind, rain, and hail	Storm developed just west of Laingsburg, and some witnesses reported seeing 2 funnels. 1 home, 2 barns, and a few other farm buildings destroyed and 15 homes damaged. Heavy hail preceded tornado. Storm moved east-southeastward.
MICHIGAN Flint area, Genesee County	12	5:25 p.m.	6	100	3	116	6	1	Tornadoes, wind, rain, and hail	Tornado hit southeastern edge of Flint and moved eastward through suburban and rural areas. 71 homes, 5 commercial buildings, and 71 other structures destroyed; 285 homes and 14 commercial buildings damaged, and television station antenna toppled. Heavy rain and hail occurred, mostly northeast of Flint. Some witnesses reported 2 or 3 funnels visible at time of storm. Other funnels seen aloft at 6:20 p.m., and 7:50 p.m., in vicinity of Flint.
MICHIGAN Wayne area, Wayne County	12	5:45 p.m.	10	20-380	0	0	4	1	Tornado and wind	Storm originated about 4 miles north-northwest of Wayne and moved southeastward. Spotty damage along path.
MICHIGAN St. Charles (southwest of), Saginaw County	12	6 p.m.	4	50-100	0	0	4	1	Tornado, wind, rain, and hail	Tornado occurred in rural area southwest of St. Charles. 1 home, 2 barns, and other farm buildings destroyed. Heavy hail in area. Storm moved southeastward.
MICHIGAN Livingston and Oakland Counties	12	6 p.m.	10	100	0	5	5	1	Tornado, wind, rain, and hail	Tornado touched down short distance north of Brighton and moved east-southeastward into southwestern Oakland County. 5 homes and several barns destroyed or badly damaged, and 5 persons suffered minor injuries. Funnel possibly same sighted aloft near Fowlerville and Howell a short time before.
MICHIGAN Detroit area, Wayne County	12	6:55 p.m.	6	30-400	0	22	5	1	Tornadoes and wind	Funnel developed in Allen Park, just southeast of Detroit, then moved through neighboring suburb of Lincoln Park. 3 homes and a church destroyed, 99 homes and 30 other buildings damaged. Funnels aloft also reported in Detroit area later in evening. Storm moved east-southeastward.
NEBRASKA Osceola (near), Polk County	12	8-9 p.m.			0	4	4	5	Tornado, hail, and rain	Path of hail 2 to 5 miles wide and 30 miles long. Tornado path short and narrow. Hailstones up to 3 inches in diameter. Crop damage by hail, property damage by tornado. Storm moved east-northeastward.
OHIO Cleveland area, Cuyahoga County	12	9:44-10:15 p.m.		*3-4	7	100	7	1	Wind, tornado (suspected), rain, hail, and electrical	Thunderstorm wind with suspected tornadic activity in some spots. There is no doubt that main part of damage in this storm caused by straight-line winds from north to northwest. However, there were isolated spots in which damage points clearly to local tornadic action. Debris carried in southeasterly direction. However, in one spot trees were found lying in due north to south direction. In this spot, an intelligent-appearing eye witness, spoke positively of having heard roaring sound, as of freight train, followed immediately by unroofing of neighbor's house, and then by almost calm for short while. Plate glass from broken windows on south side of street fell into street (upwind). This indicated explosive action due to sudden reduction in outside pressure. Storm mainly a severe thunderstorm wind, but momentarily active funnels could easily have penetrated to roof-top level without establishing firm contact with ground. Those in local areas, then, could be properly identified as poorly developed tornadoes. Plotting of points from which similar wind damage reported shows that they lay in practically straight line from western shore in Cleveland southeastward for distance of 50 miles to Columbiana, some 15 miles south of Youngstown. Throughout this distance, path seems to vary from 2 to 4 miles.
NEBRASKA Omaha, Douglas County	12	10 p.m.	3	Narrow	0	0	5	1	Tornado, wind, rain, and hail	Storm moved southeastward.
OHIO Ravenna, Portage County	12	10:40 p.m.	20	*3-5	0	Few	6	1	Wind, tornado (suspected), rain, hail, and electrical	Straight thunderstorm wind with some localized tornadic action. Hailstones up to 2-1/2 inches reported in Ravenna area. This report covers only one segment of storm which extended from lakeshore in Cleveland to Columbiana, south of

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OHIO (Cont'd)										Youngstown, a distance of about 50 miles. Damage most concentrated here due to populous area, and reporting more complete. However, nature of storm evidently same throughout its path of travel. Trees lying toward east in one area, while nearby they were all lying toward southwest. Several buildings damaged with debris in all directions, and metal roofing carried a mile or more and wrapped around trees. 1 house lifted and turned. Storm moved southeastward.
PENNSYLVANIA Southwestern portion	13	12:45 a.m.	80	30-300	0	10	6		Tornado (suspected), wind, rain, and electrical	Storms hit Aliquippa-west Mifflin-Duquesne-Windber area, respectively, however, Duquesne was by far hardest hit. It left a swath of destruction in city 12 blocks long and 2 blocks wide, which consisted of smashed windows and damaged roofs in stores, homes, 2 churches, high school building, post office, rectory, 2 funeral homes, hotel, drugstores, and bars; approximately 75 buildings heavily damaged and 200 others suffered lesser damage. Estimated damage at Aliquippa $500,000, of which $50,000 resulted at Aliquippa-Hopewell Airport when it was leveled; 14 planes demolished and 3 more badly damaged. In western Mifflin, service station, which included garage and repair facilities as well as sales office, partially demolished as result of destruction of roof; stack of tires largely disappeared, however, many recovered between west Mifflin and Duquesne; damage estimated at $25,000. At Windber, hospital and nurses home suffered smashed windows and roof partly dislodged; coal company machine shop leveled and 1 man injured when wind slammed him against a church. Area completely blacked out for a time due to downed utility poles and electric and telephone wires. Torrential rains which accompanied storm caused flash floods and several landslides, temporarily blocking some major traffic arteries. Storm moved southeastward.
MICHIGAN St. Clair County	13	1:30 a.m.	1	100	0	2	5	1	Tornado, wind, rain, and hail	Tornado moving eastward first touched down near Macomb County line, a short distance north of New Baltimore. 1 home and several barns destroyed, and several homes and other buildings damaged.
NEW YORK Olean, Cattaraugus County	13	Early a.m.					5	1	Rain	Heavy rain with 1-3/4 inches falling in 1 hour caused estimated damage of $100,000 to homes and other private property, and $50,000 damage to city streets, sewers, and drainage systems. At least 40 cellars flooded and many lawns covered with debris left by flood waters. Streets, pavements, and black topping lifted, broken, and eroded by rushing water. Driveways ripped out and several culverts badly washed.
MICHIGAN Muskegon area, Muskegon County	13	3:20 a.m.	10	*1	0	13	7	1	Tornadoes, hail, wind, and rain	Severe hailstorm with stones ranging from golf ball to baseball size and some up to 4 inches in diameter. Most damage occurred in the city of Muskegon and surrounding suburban area. About 12,000 homes sustained roof, window, and other damage, estimated to total $6,500,000, and another $1,000,000 damage done to automobiles. Several funnels aloft sighted in Muskegon area within a few hours before and after hailstorm. 1 funnel passed directly over Weather Bureau station at 5:06 a.m., at estimated height of 100 to 150 feet.
KANSAS Yates Center area, Woodson County	13	3:45-4 p.m.	5	*2			4	3	Wind, rain, and hail	Severe wind damage occurred in Owl Creek Township southeast of Yates Center in area beginning 4 miles southeast of Yates Center. 3 houses and 2 barns, numerous sheds, and trees damaged. Damage quite severe, but no actual funnel cloud observed. Observers stated vicious-looking cloud appeared to roll along ground.
KANSAS Coffeyville, Montgomery County	13	Late afternoon							Wind and hail	Violent thunderstorm with severe wind caused broken powerlines and tree limbs. Some hail also reported in city.
MISSOURI Nevada area, Vernon County	13	7 p.m.			0	0			Tornadoes (suspected), wind, hail, and electrical	2 funnel clouds reported north and northwest of Nevada. Many trees and small buildings damaged.
OKLAHOMA Stillwater, Payne County	13	7:10 p.m.			0	0	3	2	Tornado, wind rain, hail, and electrical	Thunderstorm with funnel aloft. Strong winds up to 60 to 70 m.p.h., with heavy rain and some 1/2-inch hail caused widespread damage to roofs, outbuildings, utility lines, and trees. Funnel sighted, but no tornado damage noted. Storm moved eastward.
MISSOURI Cassville area, Barry County	13	Evening			2		5		Rain	Heavy rains, 7 to 10 inches. Most damage to roads and bridges from flooding. 2 boys drowned in swollen creek 6 miles east of Cassville.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons Killed	Number of persons Injured	Estimated damage by categories † Property (exclusive of crops)	Estimated damage by categories † Crops	Character of storm	Remarks
KANSAS Crawford County	13	Early night							Wind, electrical, hail, and rain	Severe winds in southwestern part of Pittsburg uprooted trees, damaged powerlines, and some farm buildings. Occasional wind damage and some trouble from lightning reported from other points in southern part of County.
KANSAS Sedan area, Chautauqua County	13	Night			0	0			Wind, electrical, and tornado (suspected)	Severe winds occurred about midnight together with much lightning. Funnel reported to have touched ground southwest of Sedan, but this was not substantiated.
	13									Minor storms also reported at Menominee, Mich.; at Carrollton and Carthage, Mo.; at Davenport, Okla.; and near Marinette, Wis.
MISSOURI James and White River Watersheds	13, 14, 15				2				Rain	3.30 inches of rain in 30 hours. 2 persons drowned.
VIRGINIA Franklin and Henry Counties	14	6-7 p.m.			3				Electrical and wind	Man killed by lightning near Sydnorsville; 2 women killed on Route 108 a few miles north of Martinsville when wind tore part of tailgate of truck and smashed it through windshield of their auto.
OKLAHOMA Payne and Creek Counties	14	8 p.m.				3		1	Electrical and rain	Lightning caused house fire and destroyed elecrical wiring, resulting in several hundred dollars damage at Cushing. Automobile accident east of Drumright during heavy rain resulted in 3 persons injured and serious damage to auto.
TEXAS Tom Green County	14	8:30 p.m.	1	25	0	0	3		Tornado (suspected), wind, rain, and hail	28 new turkey shelters and an 8-foot water tank platform demolished. Tin roofing scattered a mile. Barn torn down.
OKLAHOMA Pauls Valley, Garvin County	14	10 p.m.				1	2	1	Electrical	Lightning struck 2 residences causing damage to structures, refrigerator, and windows. 1 person hospitalized suffering from shock.
	14									Minor storm also reported at Tulsa, Okla.
FLORIDA Fort Lauderdale, Broward County	16	12:30 p.m.			0	0			Tornado	Small twister, lasted only 3 minutes, but lawn furniture lifted 200 to 300 feet in air and dropped.
NORTH DAKOTA Grand Forks County	16	3:30 p.m.			0	0	4	1	Wind and tornado	High winds reported from all parts of State with minor damage. Grand Forks CAA reported gust of 103 m.p.h. Isolated tornado reported sighted north of Thompson, 10 miles south of Grand Forks, with minor damage at about same time as windstorm in Grand Forks. Storm moved eastward.
ILLINOIS Stockton (west of), Jo Daviess County	16	5:30 p.m.	4	80	0	0	4	1	Tornado	Tornado moving eastward damaged 5 farmsteads.
MASSACHUSETTS Lowell, Middlesex County	17	11:20 a.m.	1/4	10-15	0	0			Dust devil	Sight and roar of storm caused workmen to throw themselves prone to escape injury. After storm lifted from ground it continued for nearly 1/4 mile and rose to estimated 1,000 to 1,500 feet high. Storm moved eastward.
IDAHO Blackfoot Airport, Bingham County	18	Afternoon			0	0	3	1	Tornado	Called "baby tornado" by airport manager; demolished 1 hangar, lifted another 4 feet off ground and set it back in place. Did not damage plane in demolished hangar.
IDAHO Gem County	18	6 p.m.	3	200					Hail	From Freezeout Hill to Black Canyon Dam considerable fruit knocked off by hailstones 1 to 1-1/2 inches in diameter. Smaller hail followed and cut some fruit badly. Storm moved north-northeastward.
ARIZONA Tempe, Maricopa County	19	6:45 p.m.					4	1	Wind, rain, and electrical	All the reported damage occurred at Tempe shopping center, now under construction. 3 concrete-block walls blown down. Storm moved northeastward.
FLORIDA Palm Beach, Palm Beach County	19	7-7:30 p.m.				4			Wind	Tornado-like wind overturned trailer, injuring and hospitalizing 4 persons. 2 other trailers lifted off foundations.
ARKANSAS White County	19	8 p.m.	15	*3			4	4	Wind, hail, rain, and electrical	Hailstones up to 1-1/2 inches in diameter reported. Storm moved southeastward across Gum Springs, Higginson, Walker, and Dogwood Townships.
DELAWARE Bethel (near), Sussex County	20	1:05 a.m.				7			Lightning	Freak bolt of lightning blew family of 7 persons out of their beds and bulged out sides of the house, blew out front door and several inside doors, knocked plaster from ceiling and walls, and smashed furniture. It looked like a bomb was tossed into building.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NORTH CAROLINA Columbus, Pender, and New Hanover Counties	20	12-3 p.m.					4	6	Hail and rain	Most damage to tobacco in fields due to widespread hail in Columbus County. City of Wilmington suffered flooding of streets and damaging washouts due to very heavy rain.
FLORIDA Vanderbilt Beach, Collier County	20	3:15 p.m.			0	0			Tornado and wind	"Twister" reported with wind estimated at 60 m.p.h.; moved from northeast. North wall of house under construction blown down and garage unroofed.
FLORIDA Venice, Sarasota County	20	8:15 p.m.			0	0	3		Tornado	Man pulled into front yard as he was closing door of his home.
SOUTH CAROLINA Horry and Georgetown Counties	20	P.m.	40	*3-5				5	Hail	Series of hailstorms over 40-mile path caused considerable crop damage. Hailstorms appeared ahead of cold front moving southward down eastern seaboard. Communities hardest hit were: Loris, Pawley's Swamp, Holly Grove, Shell, and Toddville. Tobacco beaten down, but expected that it will outgrow most damage. Some localities reported hail 2 inches in diameter. Storm moved from near North Carolina line through central Horry County to northeastern Gorgetown County.
FLORIDA Lake Fern, Hillsborough County	20								Hail	Hailstones 1/2 to 3/4 inch in diameter, fell for about 20 minutes, damaged garden peas.
	20									Minor storms also reported at Semmes, Ala.; and at Naples, Fla.
ILLINOIS West-central portion	21	3 a.m.					4	3	Wind, rain, and hail	Damage due mostly to lightning and hail and was reported from La Harpe, Oquawka, Virden, and Hillsboro.
NEW YORK Rochester, Monroe County	21	Early a.m.					4	1	Electrical, rain, and hail	In Rochester area, lightning struck several buildings, starting fires. Largest individual loss estimated at $20,000. Another of $6,000 and one of $2,000 reported also. No individual loss estimates placed on damage inflicted by 7 other lightning strikes. Streets, roads, and culverts in immediate area damaged by washing of heavy rain, although rainfall light at Rochester Airport. No significant hail damage reported.
NORTH CAROLINA Forsyth County	21	4:10 p.m.					3	4	Hail	3 square miles damaged, mostly to tobacco in fields.
MICHIGAN Ingham, Jackson, and Washtenaw Counties	21	6 p.m.					4	4	Hail, wind, rain, and electrical	Scattered thunderstorms with high winds and hail up to 1 inch in diameter struck southern Ingham County, southeastern Jackson County, and southwestern Washtenaw County. Hail smashed many windows and damaged orchards and greenhouse while high winds caused scattered property damage. Storm moved eastward.
ILLINOIS Onarga, Iroquois County	21	9:45 p.m.	2	70	0	0	4	1	Tornado and electrical	Tornado moving eastward destroyed canning factory and damaged other property.
INDIANA Newland, Jasper County	21	10:30 p.m.	Short	10	0	0	3	1	Tornado, wind, hail, rain, and electrical	Front of store thrown into nearby field. Moderate hail fell nearby. Storm moved eastward.
INDIANA Fowler, Benton County	21	11:30 p.m.			0	0	2	1	Tornado, wind, rain, and electrical	Tornado cloud sighted moving eastward by several people. Accompanying thunderstorm caused minor wind damage.
OREGON Jackson and Baker Counties	21	P.m.				2			Electrical	Scattered thunderstorms at widely distributed points caused insignificant damage. House struck by lightning at Ashland with minor damage and 2 men struck near Baker and severely injured, requiring hospital treatment.
	21									Minor storms also reported in Denver area, Colo.; and in Simpson County, Ky.
INDIANA Logansport (near), Cass County	22	2 a.m.					4	1	Electrical, wind, rain, and hail	Barn near Deacon burned to ground as result of lightning strike. House in like manner destroyed 2 miles west of Logansport.
WEST VIRGINIA Randolph County	22	9 a.m.					6		Electrical	Damage of $1,500,000 to Science Building, Davis and Elkins College, struck by lightning and burned.
VIRGINIA Henry, Franklin, and Pittsylvania Counties	22	Late afternoon	50	*4-6			1		Hail	Hailstones, some as large as hens' eggs, fell in large quantities from south of Rockymount southeastward into North Carolina just south of Danville, causing unestimated damage to young crops and property. Vegetable and tobacco plantbeds destroyed in some sections and roofs and auto tops damaged. Described as "worst hailstorm in history."
NORTH CAROLINA Caswell, Chatham, Rowan, and Stanly Counties	22	7-9 p.m.					4	5	Hail	160 square miles damaged, mostly to tobacco in fields.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ILLINOIS East-central portion	22	7:30 p.m.					4	3	Wind, electrical, hail, and rain	Wind, electrical, and hail damage reported from Clinton, Champaign, Danville, Athens, and Springfield.
MISSOURI De Witt area, Carroll County	22	7:30-9 p.m.			0	0			Tornado (suspected), hail, and rain	Trees and power- and phone lines downed. Hail 1-1/2 inches in diameter at Sugar Tree.
KANSAS Finney and Kearney Counties	22	8:45-9:05 p.m.	1/2		0	0			Tornado, rain, and hail	Funnel observed near Finney-Kearney County line, remained aloft for approximately 20 miles then touched ground, lifted, and disappeared in heavy cloud; moved eastward and northeastward.
KANSAS Garden City (15 miles south of), Finney County	22	9:35 p.m.			0	0			Tornado, rain, and hail	Tornado in open country, crossed road about 1/2 mile in front of observer, traveling eastward. Funnel cloud observed.
KANSAS Chapman (2 miles west of), Dickinson County	22	10:30 p.m.							Electrical and rain	Lightning struck barn and an adjoining granary, and pumphouse also burned.
MISSOURI Kansas City, Jackson County	22	Early evening			1				Wind, rain, electrical, and hail	Heavy thunderstorm activity. Man electrocuted when he touched fallen power wire.
MISSOURI Yates, Randolph County	22	Late evening			0	0			Tornado (suspected), wind, and rain	Farm buildings damaged.
	22									Minor storms also reported at Brook, Arcadia, Francesville, and in St. Joseph, Elkhart, Tipton, Hamilton, and Madison Counties, Ind.; at Kansas City, Kans.; at Macon, Mo.; and at Elko and Richmond, Va.
OKLAHOMA Fort Sill area, Comanche County	23	12:25 p.m.			0	0			Tornadoes, wind, rain, and hail	Weather Station employee reported sighting 3 funnels aloft moving northeastward 3 miles north of Fort Sill Station.
TEXAS Lubbock, Wilbarger, Oldham, and Potter Counties	23	1:40-8 p.m.	3	75	0	0	4		Tornadoes, rain, wind, hail, and electrical	2 funnels not touching ground sighted at New Deal north of Lubbock at 1:40 p.m. Tornado 12 miles south of Vernon overturned 7-car garage, smaller garage, and water tank. At Adrian 2.88 inches rain with hail that covered ground 6 to 8 inches deep blocked Highway 66 at 8 p.m. Lightning knocked out transformers in Amarillo. Storm moved southeastward.
OKLAHOMA Watova and Talala, Nowata and Rogers Counties	23	2 p.m.			0	0		1	Tornado (suspected), electrical, wind, rain, and hail	Small tornado believed to have cut path through some brush and trees near Verdigris River in southeastern Nowata County. Minor wind damage noted over wide area in northern Rogers County and southern Nowata County. Lightning struck trees, and numerous cattle killed. Storm moved northeastward.
ARKANSAS Leachville, Manila, and Burdette areas, Mississippi County	23	2:30 p.m.	30	*1-1/2			2	4	Hail and wind	Principal crop damage northeast of Leachville and northeast of Manila. Storm moved southeastward.
OKLAHOMA Seminole County	23	3:15 p.m.			0	0		1	Tornado, wind, electrical, hail, and rain	Funnel aloft reported north of Konowa and considerable wind damage occurred in Seminole and Wewoka. Roofs blown off, trees and TV antennas downed, and outbuildings damaged. Lightning struck home in Seminole causing damage to electric stove. Spotted heavy hail also reported in area. Storm moved northeastward.
OKLAHOMA Midwest City, Oklahoma County	23	3:45 p.m.			0	0			Tornado, wind, rain, and hail	Funnel aloft sighted. No other details available, except that funnel dipped out of base of clouds momentarily. Storm moved northeastward.
IDAHO Cottonwood, Idaho County	23	Early afternoon							Rain, hail, and wind	1.62 inches rain in less than 1 hour at Cottonwood. Area affected not over 2 to 3 square miles. Heaviest damage from erosion, but considerable hail and wind damage to trees, shrubs, and plants.
MISSOURI Dunklin County	23	Afternoon							Hail, wind, and rain	Widespread hail damage in area bounded by Highway 25 from St. Francis River to Arbyrd in west by State line in south, and on east by Silverdale community. Most crops required replanting.
OKLAHOMA Chelsea (near), Rogers County	23	Afternoon						1	Electrical	Lightning struck 2 homes causing fire which completely destroyed house and 2 outbuildings. The other house had wiring and plumbing destroyed and a section of floor burned.
VIRGINIA Lynchburg area	23	4 p.m.					4		Electrical	Large home in Forest struck by lightning, with considerable loss; another house in Lynchburg also struck, but damage slight. Storm moved southeastward.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NORTH CAROLINA Pitt and Yancey Counties	23	5-6 p.m.					3	4	Hail	Damage mostly to tobacco in fields, largely in 1-square mile area in Pitt County.
OKLAHOMA Cleveland and Oklahoma Counties	23	5:28 p.m.			0	0			Tornado, wind, rain, and hail	Funnel aloft moving northeastward sighted near Norman. A few minutes later hail and strong winds reported east of Oklahoma City.
OKLAHOMA Chickasha (near), Grady County	23	5 p.m.			0	0			Tornado and rain	Funnel aloft moving northeastward.
OKLAHOMA Salem area, Okmulgee County	23	7 p.m.						1	Electrical	Lightning struck home which resulted in fire and complete destruction.
OKLAHOMA Lake Texoma, Marshall County	23	P.m.			0	0			Tornado, wind, and rain	Small tornado moving northeastward dipped down over Lake Texoma, turning over boats but no damage resulted. Fishermen had to hold to something firm to keep from blowing away.
OKLAHOMA Snyder (west of), Kiowa County	23	Evening					1		Hail and rain	Ripened grain badly damaged over a small area.
IDAHO Canyon and Owyhee Counties	23								Wind, rain, hail and electrical	From Marsing and Deer Flat Dam to vicinity of Middleton many fields of alfalfa and wheat flattened, numerous trees and limbs felled, and main transformer at substation knocked out, causing power outages up to 4 hours in area.
TENNESSEE Allardt and Jamestown, Fentress County	23								Electrical	Lightning struck 2 houses which were destroyed by fire in Allardt community. Another house in Jamestown severely damaged by fire caused by lightning same day.
	23									Minor storms also reported near Lovington, at Cameron, and in Union County, N. Mex.; in Beaufort and Buncombe Counties, N. C.; at Muskogee, Okla.; and in Franklin area, Va.
IDAHO Oneida, Bannock, and Franklin Counties	24	Afternoon					2	5	Hail	At least $100,000 crop damage estimated for Oneida County and many thousands of dollars in Oxford area, as well as near Downey, Swanlake, Cleveland, and Clifton. Hail broke many windows, killed small animals and birds.
GEORGIA Colquit County	24	5:15-5:45 p.m.	Short	Narrow	0	0	2	2	Tornado, wind, hail, and rain	Funnel cloud observed, but did not reach surface. Many trees and utility lines downed by winds exceeding 60 m.p.h.; 1,200 telephones knocked out of service. Some hail over County, but damage localized in immediate vicinity of Moultrie. Storm moved northeastward.
GEORGIA Toombs County	24	8 p.m.		Narrow	0	0		2	Tornado (suspected), wind, hail, and electrical	Winds did considerable damage to farm buildings in County and destroyed grandstand and fences at Vidalia ball park. Hail damaged young crops on several farms and fire, started by lightning, destroyed barn, severely burning 2 mules and destroying feed and farm machinery.
GEORGIA Jeff Davis and Appling Counties	24	9 p.m.						5	Hail	Damage mainly to tobacco, but other young crops in area also damaged.
OKLAHOMA Beaver (9 miles south of), Beaver County	24	P.m.	6	*1			1	4	Rain, hail, and electrical	Heavy rain of up to 8 inches, with spotted hail caused considerable damage to crops. Storm moved northeastward.
	24									Minor storms also reported at Troy, Ala.; at Alachua and Hague, Fla.; and in Cumberland County, N. C.
NEW MEXICO Edgewood (near), Santa Fe County	25	10:54 a.m.	15	50	0	0			Tornado, rain, and electrical	Tornado moved northeastward over open country, no damage resulted.
ALABAMA Estothel, Covington County	25	2:30 p.m.				1	2	1	Wind, electrical, hail, and rain	Additional damage of $300 caused by lightning. Hail size of hens' eggs, but most damage by wind.
TEXAS Dallam, Moore, and Hockley Counties	25	3:19-5 p.m.	1-1/2	400	1	0	3	4	Tornadoes, electrical, wind, rain, and hail	Tornado with severe thunderstorms. Airline pilot reported 2 funnels 40 miles east-southeast of Dalhart at 3:19 p.m., could not determine whether they touched ground. Funnel 3 miles south of Levelland at 4 p.m., tore down and blew pumphouses away. Lightning killed woman seeking protection under a tree 5 miles northeast of Levelland. Storm moved northeastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ARKANSAS Dumas (1 mile southwest of), Desha County	25	4 p.m.			0	0	3	1	Tornado, rain, and hail	Several persons saw funnel cloud; 2 houses damaged. Storm moved northeastward.
MASSACHUSETTS Eastern portion	25	Afternoon			0	2	2	1	Dust devils	Numerous dust devils in eastern Massachusetts during afternoon. One at Ipswich and one at Dudley each injured a child by carrying them through air. The child at Ipswich thrown over 40 feet, with her bicycle. The other, at Dudley thrown from her tricycle for distance of 10 feet. Property damaged estimated at $250 each at Northboro and Methuen. Small damages reported at Ipswich and Dudley. Others with little or no damage at Cambridge, Ashland, Framingham, and Worcester. Descriptions of sounds of these storms included: "a roar like a lion," "like an express train," "as a roar of fire," "like the baritone siren of a freight train," and "like a jet plane."
OKLAHOMA Eldorado (8 miles east of), Jackson County	25	7:18 p.m.			0	0			Tornado	Funnel aloft sighted by Ground Observer Corps.
OKLAHOMA Crescent (southwest of), Logan County	25	11 p.m.			0	0	1	1	Tornado	Funnel, reported southwest of Crescent by Kingfisher County Sheriff, moving northeastward. Although funnel reported touching ground, no other reports could be secured for verification.
OKLAHOMA Blair, Jackson County	25	Evening			0	0			Tornado, wind, and rain	Telephone lineman reported sighting funnel aloft, but additional information could not be secured.
IDAHO Power and Bannock Counties	25	Night						5	Hail, rain, and electrical	Crops beat to ground, some livestock lost. Principal damage in vicinity of Oxford where on 1 farm 100 acres of wheat and 40 acres of barley almost totally destroyed and in other fields 80 percent damaged.
	25									Minor storm also reported at Okeene, Okla.
OKLAHOMA Duke (near), Jackson County	26	3:20 p.m.			0	0			Tornado	Highway patrol sighted funnel aloft moving northeastward.
OKLAHOMA Snyder and Roosevelt, Kiowa County	26	Afternoon		880					Hail, wind, and rain	Hailstorm northwest of Snyder caused damage to ripe wheat crop of up to 80 percent. Strong winds in Roosevelt area caused considerable damage to buildings and trees. Windows blown out and roofs damaged.
OKLAHOMA Miami and Quapaw, Ottawa County	26	Afternoon						1	Wind, electrical, and rain	Strong winds damaged church steeple in Quapaw and lightning struck home in Miami damaging electrical wiring.
IDAHO Western portion	26	Late afternoon-evening						5	Wind, hail, electrical, and rain	Considerable crop damage in Canyon County from 6:55 to 8 p.m., as wind reached gusts estimated at 40 to 50 m.p.h. Grain flattened in many fields, fruit blown off trees, power knocked out by lightning. Hail damage also extensive. In northern counties, particularly in Latah and Idaho Counties, peas and grain damaged; heavy rains caused erosion in fields and lightning caused power outages.
MISSOURI Sedalia, Pettis County	26	7:30 p.m.				1			Electrical	Lightning hit telephone booth.
OKLAHOMA Davenport (5 miles north of), Lincoln County	26				0	0			Tornado	Funnel aloft moving northeastward.
	26									Minor storms also reported in Ballard County, Ky.; and in Chaves County, N. Mex.
ILLINOIS Champaign, De Witt, McLean, and Vermilion Counties	26-27	10 p.m. 26th-late p.m. 27th					5	5	Rain and electrical	Near-record downpours occurred in series of heavy thundershowers which began late on 26th and continued until late on 27th. Axis of heaviest rainfall extended from Le Roy to east of Rantoul and thence southeastward toward Danville. Official storm totals 8.73 inches at Le Roy, 7.12 inches at Gibson City, and 7.07 inches at Rantoul. Counties affected were Champaign, De Witt, McLean, and Vermilion. Salt Creek drainage caught the earlier showers and second series fell over the Sangamon. The Sangamon at Mahomet rose 4 feet in 3 hours late on 27th. Based on careful field survey by meteorologists of Illinois State Water Survey, an area-depth curve was constructed which showed 9.9 inches over 100 square miles and 7.1 inches average for 1,000 square miles. Unofficial reports of 10.5 inches at Fisher and 11.1 inches north of Bellflower appear to be creditable.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Pawnee Rock (10 miles southeast of), Stafford County	27	4 p.m.			0	0			Tornadoes	2 funnel clouds observed 10 miles southeast of Pawnee Rock. No damage as both remained aloft.
TEXAS King, Knox, Kent, Haskell, Taylor, Jones, Stonewall Counties	27	4:30 p.m.			0	0	4		Tornadoes, wind, rain, and hail	Funnels reported to have touched ground west of Knox City, King County; Jayton, Kent County; and Rochester, Haskell County. 22 funnels reported in Abilene area, but only damage resulted to farm buildings northwest of Stamford where barn deroofed with debris thrown about 300 yards in southeast direction and tool shed and smokehouse destroyed and combine pushed about 20 feet; 4 miles south of Rule windmill destroyed and tool shed damaged. Storm moved south-southeastward.
KANSAS Sheridan (northern portion) and Decatur (southern portion) Counties	27	Late afternoon	12	*1					Hail	Hail caused almost total loss of grain. Hail covered ground at Dresden like snow, about 1 inch deep. Storm moved northeastward.
KANSAS Hamilton and Kearney Counties	27	Late afternoon			0	0			Tornadoes, wind, rain, and hail	Severe thunderstorm conditions prevailed over much of area late in afternoon and evening. 1 small funnel aloft observed in sandhills southwest of Syracuse at 8:32 p.m., another reported near Kendall at 6 p.m., and the third observed to dip down over Lake McKinney northeast of Lakin and draw water up from Lake, time not given. Some local wind damage.
KANSAS Cowley County	27	7:30 p.m.			0	0			Tornado, rain, and electrical	Funnel cloud aloft 10 miles southeast of Dexter observed to travel northeastward for about 2 miles. Funnel split off from base of cloud.
KANSAS Augusta (southwest of), Butler County	27	10:30-10:45 p.m.			0	0			Tornado and rain	Funnel cloud aloft sighted by Highway Patrol at 10:30 p.m., about 6 miles south and 4 miles west of Augusta. Patrol said it broke up about 10:45 p.m.
NEBRASKA Cambridge (5 miles south of), Furnas County	27	P.m.					3		Hail	Grain fields damaged 25 to 50 percent.
IOWA Northeastern portion	27						5	1	Wind, rain, hail, and electrical	Buildings, lines, and trees damaged. Bridges washed out in Delaware County.
	27									Minor storms also reported in Boone County, Ky.; and in Bristol County, Mass.
KANSAS Sedgwick County	28	2-4:08 a.m.			0	0			Tornadoes, wind, and rain	3 funnels aloft, reported by law officers, moving eastward during severe thunderstorm. At 2:16 a.m., funnel sighted north of Valley Center. About 3 a.m., second funnel observed near Colwich. At 4:08 a.m., third reported from Viola. None of these touched ground.
SOUTH DAKOTA Buffalo, Harding County	28	11:30 a.m.			0	0			Tornado and rain	Tornado moved southeastward; did not touch ground. Funnel cloud evidently making U-turn when sighted.
IOWA West-central portion	28	Forenoon			1		4	1	Electrical and hail	Thunderstorms damaged buildings and lines. 1 man killed by lightning.
SOUTH DAKOTA McIntosh, Corson County	28	3 p.m.			0	0			Tornado	Tornado moving southwestward did not touch ground.
NEBRASKA Central City (near), Merrick County	28	Afternoon	8-10	1,000			3	4	Hail	Stones 1/2 inch in diameter. Damage spotted.
KANSAS Barton, Russell, and Ellsworth Counties	28	4-9 p.m.			0	0			Tornadoes, hail, electrical, wind, and rain	Heavy thunderstorms hung over Barton, Russell, and Ellsworth Counties through late afternoon and evening. Hail caused some damage and lightning strikes and tornadoes reported as follows: Lightning struck home in Ellinwood setting fire to attic; struck oil company gun barrel 6 miles northwest of Hoisington about 5:30 p.m., causing fire which continued to blaze for over 24 hours; and struck electric power plant at Holyrood at 9 p.m., causing power failure over one-half service lines. Tornadoes aloft 10 miles northwest of Holyrood dipped toward earth several times shortly after 4 p.m.; 6:30 p.m., tornado aloft observed east of Wilson, Ellsworth County; also near Hoisington at 7:18 p.m., tornado reported on ground but no damage resulted.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
MINNESOTA Otter Tail County	28	5 p.m.					3	3	Rain, wind, and electrical	At Fergus Falls Cooperative observer observed 2.87 inches of rain from 5 p.m., to 8:30 p.m. Unofficial rainfall total of near 5 inches reported at Evansville. Newly-seeded farmlands inundated. Valuable topsoil washed away. Some basements flooded. Storm moved northeastward.
MINNESOTA Nobles, Jackson, Cottonwood, and Martin Counties	28	9 p.m.					4	3	Rain, hail, wind, and electrical	Heavy rainfall, 2 to 3 inches with hail 1 to 2 inches in diameter. Considerable soil erosion in Windom and vicinity, Cottonwood County. Property in western Worthington, Nobles County, damaged. In Martin County heaviest damage reported at Monterey and Triumph, here it was reported that timber from barn was embedded in concrete foundation. Several acres of beans also stripped by 1-1/2-inch hail. Acres replanted. Storm moved northward.
WYOMING Laramie County (eastern portion)	28	Evening	10	*2			3		Hail, wind, and rain	Storm moved northeastward.
IDAHO Franklin County	28							4	Hail and rain	Heavy hail and rain did considerable damage to hay and grain in Cleveland area 10 miles north of Preston.
INDIANA Boone County	28						3	3	Rain	Heavy rains caused Prairie Creek to overflow and flood Lebanon and farmland along creek. A dozen families evacuated from their homes.
INDIANA Crawfordsville, Montgomery County	28						3	3	Rain	Sugar Creek overflowed as result of more than 5 inches of rain in 48 hours. Several blocks of city and muck farmlands flooded.
WEST VIRGINIA	28				1		4		Rain	Most damage in Cheat River Watershed; additional severe damages, unestimated, at Mannington.
	28									Minor storms also reported at Windsor, Ill.; near Burwell, Nebr.; and near Border, Wyo.
NEBRASKA Anselmo (near and southwest of), Custer County	28-29	11:30p.m. 28th-1:30 a.m. 29th							Rain	Rainfall estimated up to 7 inches in 2 hours. Much corn washed out. Anselmo flooded with heavy damage.
IOWA Humboldt County	29	Early a.m.			0	0	3	1	Tornado (suspected and wind	Strong wind, possibly a tornado, damaged farm buildings.
KANSAS Riley, Riley County	29	2:30 p.m.			0	0			Tornado and hail	Funnel observed to dip from main storm cloud 2 or 3 times and then dissipate. Did not touch ground, no damage. Storm moved northeastward.
KANSAS Oskaloosa Township, Jefferson County	29	3-5 p.m.					3	3	Rain, wind, hail, and electrical	Heavy rain fell in Oskaloosa Township, unofficial measurements indicate 5.1 inches fell in 2 hours, of which 4 inches fell in first hour. Loss primarily due to soil erosion in Oskaloosa Township. Storm moved eastward.
FLORIDA St. Petersburg, Pinellas County	29	4 p.m.	Short	Narrow	0	0			Tornado	Funnel cloud reported about 50 feet across base. Residents reported hearing a roar; one resident reported drapes twisted and furniture and table setting lifted. Tornado moved northward.
FLORIDA Tampa, Hillsborough County	29	4 p.m.			0	0			Waterspout	Weather Bureau observers at Tampa Airport reported waterspout over Tampa Bay.
WYOMING Goshen County	29	Afternoon	3-4	*2-3			3		Hail and rain	Storm moved southeastward.
IOWA Linn County	29	5:30 p.m.			0	0	3	1	Tornado (suspected) and wind	Strong wind, possibly a tornado, damaged farm buildings.
ILLINOIS Gridley, McLean County	29	7 p.m.					4	1	Electrical and rain	Lightning struck large barn which burned.
KANSAS Randall (near), Jewel County	29	7 p.m.	4	*2			4	4	Hail, wind, and rain	Hail damage to crops ranged from 12 to 100 percent, with greatest damage southwest of Randall. Stones varied in size from marbles to walnuts. Drifts of hail 4 feet deep reported in Randall. Wind also caused some building damage. Numerous windows broken. Storm moved northward.
TEXAS Lamb, Swisher, and Cochran Counties	29	8-11 p.m.	1/16	20	0	0	3		Torndaoes, wind, rain, and hail	Thunderstorms and suspected tornadoes associated with squall line. 2 funnels in Olton area did not touch ground. Tornado 3 miles east of Kress, traveled toward Tulia, no damage. Tornado near Whiteface moved northeastward, no damage.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Marysville (north of), Marshall County	29	8:30 p.m.			0	0			Wind, tornado (suspected), electrical, and rain	Scattered farm building damage occurred from about 10 miles north of Marysville to within 1-1/2 miles north of city. Barns, machine sheds, corn cribs, house roofs, antennas, and trees damaged. Some semblance of tornadic action at 1 farm where concrete cistern top sucked off cistern. Lightning disrupted power service at several places.
NEBRASKA Odell (north and west of), Gage County	29	8:30-9:15 p.m.	5	Narrow	0	0	4	3	Tornado, hail, and rain	Funnel observed by several persons. Several sets of farm buildings in a line damaged. Storm moved eastward. Hailstones size of golf balls.
KANSAS Riley County	29	8:45-10 p.m.			0	0	3	3	Electrical, hail, tornado, wind, and rain	Severe storm conditions prevailed from near Bala northeastward to Randolph. Lightning struck barn 6 miles southeast of Riley with $2,000 loss. Some light hail damage east of Riley, $1,000 loss. From Riley and Leonardville to Randolph wheat damage estimated at 10 to 15 percent. Hail 1-1/2 inches in diameter. West of Leonardville tornado observed and roar heard; funnel did not come to ground.
NEBRASKA Wayne (3-1/2 miles south and 2 miles east of), Wayne County	29	11-11:15 p.m.	20	*4			3	4	Hail and wind	Hailstones 1/2 to 3/4 inch in diameter. Crop damage by hail, property damage by wind and hail.
NEBRASKA Cheyenne County	29	Evening							Hail	Much wheat destroyed. Some hail did not melt before next morning.
NEW MEXICO Lovington (15 miles northwest of), Lea County	29	Evening			0	0	2	1	Tornado (suspected)	Storm in isolated area; unable to locate any witness.
IOWA Cass County	29	Night			0	0	3	1	Tornado (suspected) and wind	High wind, possibly a tornado, destroyed farm buildings.
KANSAS Scott County (northern portion)	29	Late night							Hail and rain	Severe hail occurred along north side of county line with heavy rain of 2 to 6 inches locally. Crop losses ranged from 50 to 100 percent. Storm moved eastward.
	29									Minor storms also reported in Barnwell and Williston areas, S. C.; and in Greenwood Township, Wis.
KANSAS Russell, Russell County	30	12:05 a.m.					3		Wind	227-foot tower of radio station KRSL, some tree limbs, and TV antennas damaged when high wind hit Russell near midnight. Additional damage done by tower falling on adjoining building. During storm, wind speeds of 70 m.p.h., or greater observed at C.A.A. Station.
KANSAS Abilene area, Dickinson County	30	2:30 a.m.			0	0			Tornado, rain, and electrical	Tornado aloft south of Abilene observed by 2 policemen. Tornado when first sighted was going south, but reversed and headed north toward southeastern portion of Abilene. Later funnel passed out of sight east of City without touching ground.
MICHIGAN West Branch (north of), Ogemaw County	30	2:30 p.m.	1				4		Wind, rain, and electrical	Wind destroyed 4 old barns and damaged several new barns and homes. Several trees uprooted. Storm moved southeastward.
MICHIGAN Jackson County	30	3:10 p.m.				4	4	1	Wind, rain, electrical, and hail	High winds overturned 3 large trailer houses at Spring Arbor, injuring 4 persons. Heavy thundershowers caused flooding in some parts of Jackson, and 2 homes damaged by lightning.
ILLINOIS South-central portion	30	3:30 p.m.				2	5	1	Electrical, wind, hail, and rain	Heavy thunderstorms occurred in broad band extending across State from Collinsville to Paris. Lightning injury reported near Danville and another storm caused injury near Collinsville. Some other areas affected were Centralia, Tower Hill, Paris, Edinburg, and Salem.
NEBRASKA Nelson-Spring Creek area, Nuckolls County	30	4-4:30 p.m.	15	*1-4			4	3	Hail and wind	Hailstones up to 1 inch in diameter. Crop damage by hail, property damage by wind.
NEBRASKA Sutton (near), Clay County	30	4:30 p.m.	4	300	0	0	4	3	Tornado, hail, and rain	Funnel observed, roaring noise heard. Storm moved northeastward.
SOUTH CAROLINA Columbia (6 miles south of), Lexington County	30	4:35-4:48 p.m.	1/2	10	0	0			Dust devils	3 unusually large dust devils ovserved 6 miles south of airport. Funnels extended into base of towering cumulus at times. Cumulus base estimated at 3,500 MSL.
INDIANA Bunker Hill, Miami County	30	5 p.m.					5	1	Wind, rain, and electrical	Several house trailers upset. 5 aircraft damaged at airbase when C-47 cargo plane blown into 5 parked jet aircraft.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons Killed	Number of persons Injured	Estimated damage by categories Property (exclusive of crops)	Estimated damage by categories Crops	Character of storm	Remarks
KANSAS Jetmore (south of), Hodgeman County	30	5:15 p.m.			0	0			Tornado	Funnel cloud dipped to earth twice in open country, 17 miles north of Dodge City and 5 miles south of Jetmore. No damage.
KANSAS Haggard (5 miles south of), Gray County	30	6:30 p.m.	**100	100	0	0			Tornado	Funnel cloud observed to dip to ground momentarily, but caused no damage; moved northeastward.
KANSAS Riley and Marshall Counties	30	6:30 p.m.							Hail, wind, and rain	Hail damaged wheat 70 to 80 percent in area northwest of Cleburne. Also heavy glass breakage and some roof damage. In Marshall County hail heavy in 2-mile wide strip from Winifred to Vliets in which growing crops destroyed and trees denuded of leaves.
INDIANA Bremen, Marshall County	30	7 p.m.				1	3	1	Electrical, wind and rain	Lightning and resulting fire burned barn and contents near Bremen with loss of $5,000. Farmer in barn knocked unconscious, but regained consciousness in time to escape from burning barn.
KANSAS La Cygne area, Linn County	30	7:15 p.m.			0	0			Tornado	Very black funnel-shaped cloud observed several miles northwest of La Cygne, moved northeastward, remained aloft.
KANSAS Butler County (northeastern portion)	30	8-8:30 p.m.	8-10	*2-3				3	Hail and rain	Hailstones ranging in size from 1/2 to 1 inch fell over 20-square mile area, damaging crops. Accompanied by heavy rain locally. Storm moved northeastward.
MARYLAND Hagerstown, Washington County	30	8:30 p.m.		Narrow					Wind, electrical, hail, and rain	Severe windstorm caused widespread damage and general power failure. 1 inch of rain occurred in 15 minutes and some hail fell. 3 automobiles crushed under falling trees. TV antennas wrecked all over town. Many tents of carnival blown down. North of town lightning set barn on fire.
KANSAS South-central portion	30	8:30-10:15 p.m.			0	0			Tornadoes and thunderstorm	Numerous reports of funnels observed aloft during thunderstorm in Wichita area. Most definite of these are as follows: Police at Wellington reported 3 funnels sighted at 8:45 p.m., 20 miles south of Wichita; 1 dipped to ground, but did no damage. Heavy funnel cloud seen near Newton at 9:30 p.m. Funnel aloft northeast of Wichita at 9:40 p.m. Funnel reported 1 mile south of Haysville at 9:40 p.m. Funnel cloud reported aloft southeast of Wichita near Beech Aircraft Corporation at 10:15 p.m.
OKLAHOMA Alva (northwest of), Woods County	30	8:45 p.m.			0	0		1	Tornado	Tornado sighted by Highway Patrol.
KANSAS Winchester area, Jefferson County	30	9-9:05 p.m.	5				3	4	Hail, wind, rain, and electrical	Hail driven by high winds caused roof and car damage, much glass breakage, and loss of crops. Losses occurred over 25-square mile area. Some unusually large stones or jagged pieces of ice 3 inches or more in diameter fell over smaller area of 4-square miles. Large stones not too numerous, Triangular-shaped cloud observed underneath other heavy clouds northwest of Winchester. Some reports were that loud roar attended storm and that tail or funnel was visible east of Winchester. Reports vary as to wind, some indicate hard wind, and others nothing severe. Just before hail, calm prevailed, and then terrific roar, followed by hail for a few minutes. Some wheat losses adjusted at 90 percent. Storm moved eastward.
OKLAHOMA Wakita area, Grant County	30	9:31 p.m.			0	0	1	1	Tornado	Highway Patrol reported tornado on ground 5 miles southeast of Wakita.
OKLAHOMA Kay and Grant Counties	30	9:44 p.m.			0	0	1	1	Tornadoes	Highway Patrol spotted tornado northwest of Blackwell. Funnels aloft sighted at Braman, northern Kay County and at Medford, Grant County.
MISSOURI Eldorado Springs and Schell City, Vernon and Cedar Counties	30	Late p.m.					5		Rain, wind, and electrical	Heavy rains and accompanying wind and lightning.
INDIANA McCordsville, Hancock County	30	Evening					4	1	Wind, rain, and electrical	House, church, and barn damaged by trees which were blown down by strond winds.
MISSOURI St. Ann, St. Louis County	30				1	1			Electrical	
WASHINGTON Southern portion	30	Evening				1			Electrical, wind, rain, and dust	Thunderstorm accompanied by high wind caused severe duststorms in Yakima Valley and damaged trees and power and communicationslines. Several forest fires started by lightning along Columbia River

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
WASHINGTON (Cont'd)										and in Cascades. 1 person injured by falling tree in Yakima Valley.
	30									Minor storms also reported at Logansport and Fairmount, Ind.; at St. Louis, Aurora, and in Newburg and Rolla areas, Mo.; and in northwestern Washington.
KANSAS Southeastern portion	30-31	9 p.m. 30th-2:30 a.m. 31st			0	0			Tornadoes, wind, electrical, rain, and hail	During thunderstorm over much of southeastern Kansas, locally severe winds caused building damage, etc., from Allen County south and southwest to Chautauqua and Montgomery Counties, with most violent winds in Montgomery County. At Independence and Coffeyville, severe occasional damage from lightning. 2 tornado funnels well confirmed. At 9:56 p.m., Independence police sighted funnel aloft south and west of City. At 10:17 p.m., Montgomery County Sheriff reported tornado funnel high in air 7 miles south and 1-1/2 miles east of Independence and tracked it several miles. Tremendous roar heard east of Independence at 10:18 p.m. None of the funnels came to ground or caused damage.
TEXAS Denton, Tarrant, Dallas, Hill, and McLennan Counties	30-31						5		Rain, wind, and hail	Squall line with thunderstorms and gusty winds. Heaviest rains and winds concentrated in Fort Worth-Dallas area. Winds disrupted telephone service in Fort Worth area afternoon of 30th. Storm moved southeastward.
OKLAHOMA Woodward County	31	12:10 a.m.			0	0	1	1	Tornado, hail, and electrical	Funnel aloft sighted near Quinlan. Heavy hail fell in vicinity of Waynoka, however, damage negligible. Storm moved eastward.
OKLAHOMA Craig, Ottawa, and Delaware Counties	31	After midnight						1	Wind, electrical, and rain	Strong winds and lightning damaged trees and utility lines in southern Craig and Ottawa Counties and in southeastern Delaware County.
OKLAHOMA Cushing and Stillwater, Payne County	31	12:30-3:30 a.m.			0	0			Tornadoes, wind, and rain	Funnels aloft reported sighted near Stillwater. Observers at Cushing sighted 1 funnel and 4 other funnels reported sighted. Storm moved southeastward.
OKLAHOMA Ponca City area, Kay County	31	12:35 a.m.			0	0			Tornado, rain, and hail	Funnel moving east-northeastward sighted by several persons over southeast edge of Ponca City, but evidently never touched ground as no damage reported.
OKLAHOMA Perry area, Noble County	31	1 a.m.			0	0			Tornado, electrical, and rain	Funnel aloft sighted 7 miles south of Perry. Lightning struck oil well southwest of Perry at 6:30 a.m.; well caught fire and minor damage resulted to equipment. Storm moved southeastward.
MISSOURI Noel, McDonald County	31	1:30-2 a.m.					4		Wind and rain	Storm moved southeastward.
OKLAHOMA Redrock, Noble County	31	2:15 a.m.	1/2	300		1	3	2	Wind, hail, and rain	Strong winds smashed windows and damaged buildings. Light hail did minor damage to tender crops. 1 person injured by broken glass. Storm moved southeastward.
ARKANSAS Fayetteville and Springdale, Washington County	31	2:50 a.m.						1	Wind and rain	Principal damage to trees; wall of building under construction blown down. Storm moved southeastward.
MISSOURI Neosho, Newton County	31	Early morning				2			Electrical	House set on fire and 2 children knocked out of bed by lightning.
MISSOURI St. Charles, St. Charles County	31	6:25 a.m.					4		Wind and rain	Damage to St. Charles Air Park.
OKLAHOMA Seminole County	31	8 a.m.	1-1/2	75	0	0	4	1	Tornado (suspected), wind, rain, and hail	Tornado observed northwest of Seminole struck oil company camp and drive-in theater. Numerous houses and theater screen damaged or destroyed. Other lesser damage noted in area. Investigating meteorologists determined all damage to have been done by straight winds. Storm moved southwestward. Wind, rain, and hail caused damage near Wewoka.
MASSACHUSETTS Central and eastern portions	31	Midafternoon			1	1	4	1	Electrical, wind and rain	Lightning, high winds, and heavy rains caused damage in many communities in central and eastern Massachusetts. Man killed in Cambridge when 10-foot plank blown from roof of factory and struck him in the head. Motorist injured when lightning caused her to lose control of auto. Wind shredded leaves from trees in many areas, and many large limbs and trees felled, damaging power- and phone lines. These lines struck in many areas by lightning, with damage to fuses and transformers. Many homes struck by lightning and some fires resulted. Scores of small craft swamped by storm in Boston area, where winds reached 50 m.p.h., in gusts.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
CONNECTICUT Central portion	31	3-10 p.m.			1		3	1	Electrical, wind, and rain	Man killed by lightning in Tolland, Tolland County, while seeking shelter in chicken coop. 2 chickens killed at same time. 6 dairy cows also killed near Ellington, Tolland County, with loss estimated at $2,000. 5 acres of cloth on tobacco shade tents burned by lightning near Windsor; loss set at $1,500. Homes in Hartford, East Hartford, and Waterbury struck by lightning; minor damage, including fires, resulted. Power failures of a few hours duration occurred in many central Connecticut towns.
PENNSYLVANIA Entire State	31	6 p.m.-midnight					4		Wind, rain, hail, and electrical	No major damage resulted from storm in any one locality, but it was widespread. Roofs, trees, utility wires and poles, and several automobiles suffered major damage. Southern sections of York and Lancaster Counties received a shower of small hail which melted quickly and caused relatively little or no damage to crops. Stroudsburg area hardest hit by storms. Other than damage previously mentioned, flooding up to 1 foot occurred when 1 inch of rain fell in less than an hour. Toppled trees and electric wires brought traffic to a crawl for short period. Storm moved eastward.
MARYLAND Westminster, (4-1/2 miles south of), Carroll County	31					1			Electrical	Lightning struck automobile and struck driver who was unconscious when brought to hospital. 2 passengers unhurt.
	31									Minor storms also reported at Augusta, Ga.; at Bel Air, Md.; in Caldwell County, N. C.; at Morris, Lawton, and Durant, Okla.; and in Waupaca, Outagamie, and Brown Counties, Wis.
	DELAYED REPORTS									
	APRIL									
MISSOURI Faucett (2 miles southeast of), Buchanan County	28	Early a.m.	2	*1	0	0			Tornado	Many buildings and trees damaged.
MISSOURI Bonne Terre, St. Francois County	28	Late evening			0	0			Tornado (suspected), wind, and rain	Many homes and farm buildings damaged.
	28									Minor storm also reported at Salem, Mo.

* Miles instead of yards.
** Yards instead of miles.

† This is a new form of presentation of storm damage estimates. The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total, storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

MAY 1956

Record breaking floods occurred in the Kootenai River during the latter part of May. Several other streams in the Columbia Basin had record peak flows. The main stem of the Columbia had the second highest crest stage at Vancouver, Wash., early in June in 55 years of record.

Several flash floods were reported at widely scattered locations throughout the country. One of the worst of these was reported in small creeks in the Indianapolis, Ind., area towards the end of the month. Three to 4 inches of rain was reported in a 3- to 4-hour period. About 2,000 families were evacuated. Water 5 to 6 feet deep was reported in many streets in Indianapolis.

Serious flooding was reported over practically all of the larger rivers in the territory of Alaska. Several families were evacuated from many flooded areas and in some places food was flown in.

ST. LAWRENCE DRAINAGE

Lake Michigan.--The Red Cedar River was at flood stage at the beginning of the month due to heavy rains between the 26th and 29th of April. Heavy rains from the 10th to the 13th, caused additional flooding on the Red Cedar and Grand Rivers in Michigan between the 10th and 17th. The flooding on the Red Cedar River was quite extensive. At East Lansing, Mich., a small battery factory, a golf course, a trailer camp, and some residential basements were flooded. Plaster Creek overflowed its banks in the south section of Grand Rapids, Mich., and in the Clyde Park area. The Kelvinator plant was hardest hit and was closed for 10 days with flood losses running into tens of thousands of dollars. About 2,000 workers were laid off. Lowlands in North Park and Comstock Park and in the Grandville areas were inundated. About 24 acres of farmland in the Lowell, Mich., area were flooded.

Lake Huron.--Heavy rains on the 6th caused flooding on the Shiawassee River at Owasso, Mich., on the 6th and 7th and on the Flint at Flint, Mich., from the 9th to the 11th. Additional heavy rain from the 10th to the 13th caused a second rise on the Shiawassee and Flint Rivers with some flooding between the 11th and 17th. The precipitation was considerably lighter over the Saginaw Basin and only slight overflows occurred at Saginaw, Mich. Moderate damages occurred on the Flint River at Flint, Mich., to small businesses and residential homes along the river whose basements were flooded.

Lake Erie.--The first period of flooding on the St. Joseph River at Montpelier, Ohio, and the Maumee River at Ft. Wayne, Ind., was due to heavy rainfall during the latter part of April. Additional heavy rains on the 6th and 7th, and from the 10th to the 13th caused additional flooding on these streams. The average stage of the Maumee River at Fort Wayne, Ind., was 9.5 feet, third highest on record (since 1912), and was surpassed only by the 10.0 feet average stage in 1922 and the 13.4 feet average stage in 1943. Considerable flooding of parks and basements occurred during both rises.

Lake Ontario.--There was considerable rainfall during the period from the 12th to the 14th in the lower Genesee River Basin in New York, but no flooding occurred. Oatka Creek at Garbutt, N. Y., reached within a tenth of a foot of flood stage on the 13th and Black Creek at Churchville, N. Y., within a half-foot of flood stage on the same date. Low ground in the vicinity of these streams remained wet for several days but flood damage was negligible.

ATLANTIC SLOPE DRAINAGE

A 1- to 2-inch rainfall at the end of April combined with heavy mountain snowmelt in the Merrimack River Basin in New Hampshire produced near flood conditions during the first week of May. The main river reached flood stage in the reach between Concord and Manchester, N. H., between the 1st and 3d. The tributaries approached within 1 to 3 feet of bankful stage.

Heavy rains on the 27th produced rapid rises in the Ninooski River Basin with some overflow of small creeks in Bolton and Roxbury, Vt. Due to a 3-week period of relatively dry weather preceding this storm, the main streams did not reach flood stage.

Heavy rains (2.5 to 3 inches) over the northern tributaries of the Mohawk River from Rome, N. Y., to the mouth and northward into the Adirondacks on the 30th and 31st produced near bankful stages in the upper Mohawk on the 31st. Only minor lowland flooding was reported.

The flooding on the Neuse River at Smithfield, N. C., between the 6th and 8th was due to the heavy rainfall (2.2 inches) from the 1st through the 4th. The rainfall over the Cape Fear River Basin averaged 1.8 inches during the same period with near bankful stage reached at Elizabethtown, N. C., (19.9 feet) on the 6th.

Near bankful stage occurred on the Pee Dee River at Peedee, S. C., between the 6th and 9th and light flooding on the Broad River at Blairs, S. C., on the 5th from the moderate to heavy rains during the first week of May. No damage was reported.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Heavy rainfall on the 15th and 16th which totaled 4 inches in places caused near bankful stage in the Meramec River in Missouri. A series of storms from the 26th through the end of the month caused severe flash floods in small creeks in the upper Sangamon River in Illinois. Unofficial amounts of 8 to 13 inches were reported. The area of heavy runoff was small and no flooding occurred at any reporting point in the Sangamon or Illinois Rivers. A flash flood occurred on Buck Creek in Delaware County, Iowa, on the 28th or early morning of the 29th due to exceptionally heavy local rainfall. Nearly 4.5 inches of rain was reported in 36 hours. Damage occurred mostly between towns of Ryan and Hopkinton, Iowa. One 80-foot bridge was washed out and the approaches to 15 or 20 more bridges were destroyed.

Missouri Basin.--The rapid snowmelt runoff into the Yellowstone River and its tributaries began about the 20th. By the 25th most of the Yellowstone River from Corwin Springs downstream to Billings, Mont., was at bankful stage. Many of the tributaries were also at bankful level. Heavy rain (1 to 2 inches) from the 27th to the 30th on top of the heavy runoff from the greatest mountain snow pack in years resulted in local flooding along the Yellowstone from Livingston downstream to Billings and on some tributary streams in southwestern Montana. During the period from the 28th to the 30th from Livingston downstream to Billings and possibly to Hysham, Mont., the river was 3 to 6 inches above flood stage. This was the highest water that has been observed on the Yellowstone since 1948. Several Forest Service roads and bridges in the Custer National Forest were damaged or washed away. At Laurel, Mont., the Municipal Water Works was damaged when the river carried away the intake system on the 31st. East of Billings, Mont., a 20 acre gravel pit was flooded and expensive machinery was inundated under 4 to 5 feet of water. Several farms adjacent to the river were flooded for a few hours during the afternoon on the 30th. A heavy shower on the 27th resulted in the overflow of a small stream at the north end of Sheridan, Wyo., flooding several basements.

Heavy rains (3.5 inches) fell during the night of the 28th-29th in the Anselmo, Nebr., area, causing flooding in the town to depths of 3 to 4 feet. Unofficial reports of 8 to 12 inches of rain was reported about 20 miles southwest of Anselmo. No lives were lost and property damage consisted mostly of water damage to furniture, floors, and basements.

The flooding in the Gasconade Basin in Missouri from the 16th to the 19th was due to heavy rainfall (3 to 3.5 inches) on the 15th and 16th.

Ohio Basin.--Moderate to heavy thunderstorms over the Allegheny Basin in New York and Pennsylvania on the 10th, 11th, and 12th resulted in flash flooding in the Upper Allegheny Basin on the 13th and 14th. Precipitation ranged from 2.5 to 3.5 inches during the 3-day period. The flooding was light and the damage minor. Heavy rains ranging from 1.5 to 4 inches over the Monongahela Basin during the evening of the 27th and 28th resulted in flash flooding on the Cheat River and many of the smaller tributaries. One loss of life was reported at Mannington, W. Va., on Buffalo Creek and 3 lives lost near Meadville, Pa., on French Creek. Navigation was interrupted on the lower Monongahela River from Lock No. 2, Braddock, Pa., through Lock No. 5, Brownsville, Pa. Low areas were flooded closing secondary roads and highways, but no serious flooding occurred.

Heavy rainfall (1.6 inches) on the 27th and 28th resulted in a rapid rise in the Scioto River above O'Shaughnessy and Griggs dams, trapping six fishermen on the island below O'Shaughnessy dam. Quick action on the part of the local fire department saved five of the men but the sixth was swept away by the fast current and drowned. Minor flooding occurred along the Scioto River and tributaries near Circleville, Ohio. Damage was minor and due mostly to the delay in planting of bottomlands.

Heavy rains during the period from the 25th to the 31st in the Wabash River Basin in Indiana resulted in flooding of several creeks and streams. Rainfall was excessive over Eagle Creek north of Indianapolis and over Fall Creek and other small streams in eastern and southeastern Indianapolis where 3 to 4 inches of rain was reported within a 3- to 4-hour period. As a result of these heavy rains Eagle Creek, Pleasant Run, Pogne's Run, and other small streams began to overflow an area of 40 to 50 square blocks, partially submerging hundreds of automobiles and forcing evacuation of about 2,000 families. Water stood 5 to 6 feet deep in many streets in the eastern and southeastern parts of Indianapolis. Water flowed through the registers of first floors of homes, and motor boats passed up and down the streets evacuating residents. Although no homes were believed to have been completely submerged, the quick rescue work by Police, Civil Defense and Red Cross workers may have been largely responsible for the fact that there were no drownings. One man was swept into an open manhole and almost drowned, another was swept under a bus as he alighted; one family was able to save themselves as the water rose to within 18 inches of the ceiling by chopping a hole in the ceiling and crawling up into the narrow space beneath the roof. The White River crested at Indianapolis at a stage of 14.8 feet, 2.8 feet above flood stage on the evening of the 28th. Some homes and the buildings of the Riverside amusement park were surrounded by water. The Pennsylvania spur railroad bridge south of the Washington Street bridge was washed out for the first time since 1913 as debris piled against its supports and increased the pressure against it. Many acres of corn, hay, and other crops were inundated as the flood waters moved downstream. Most of the damage in Indianapolis was due to flash flooding of creeks and small streams and the inability of sewers to carry off the surface water. Only one main highway into the city remained open and the famous 2½ mile Speedway track was covered with water. Flash floods occurred in Sugar Creek, Flat Rock Creek, and Blue River in the headwaters of the East Fork above Columbus, Ind. A levee at the junction of Big and Little Sugar Creeks gave way for the first time since 1913. U. S. Highway 31, near Edinburg, Ind., was inundated to a depth of 5 or 6 feet. The Pennsylvania Railroad tracks in Edinburg were washed out and a bridge was overflowed. Further downstream at Seymour, Ind., thousands of acres of corn, hay, and other crops were flooded. Only one death is known to have occurred in this flood and that was along the East Fork between Seymour and Bedford, Ind. Flooding along the Wabash River was mostly confined to the middle and lower reaches. Seven thousand acres of corn were saved near Riverton, Ind., by constructing earth levees.

White Basin.--Excessively heavy rainfall, with storm totals ranging between 5 and 7 inches, was general over the watershed of the upper White River and tributaries in southwestern Missouri and northwestern Arkansas on the afternoon and evening of the 14th and the morning of the 15th. Flash floods sent many creeks out of their banks. The James River and several of its tributaries reached the highest stages in the memory of local residents. In the Branson-Hollister area, Lake Taneycomo rose rapidly, reaching a crest of 19 feet, 9 feet above flood stage. Damage from flash floods in southwestern Missouri was heavy. Two deaths were reported in the Oak Ridge Community, 6 miles east of Cassville, Mo., where two small boys, one of whom waded into a rain-swollen creek and the other attempting to rescue him, were drowned. Flood damage in the Branson-Hollister area, along Lake Taneycomo, was to commercial properties such as boat docks, a dance pavillion, resort cabins, and a few business establishments located on low ground adjacent to the lake. Flooding along the Black River at Black Rock, Ark., on the 21st and 22d was minor.

Arkansas Basin.--The flooding on the Verdigris River at Coyville, Kans., on the 31st was due to heavy rains totalling over 5 inches in the Virgil-Toronto, Kans., area during the nights of the 29th and 30th. No damages were reported.

Red Basin.--General moderate to locally heavy rains over the Ouachita River and Sulphur River Basin during the closing days of April and the first two days of May caused minor flooding along those streams during the first 11 days of May. No material damage resulted from the overflows.

Lower Mississippi Basin.--The moderate to heavy rain on the 15th caused minor flooding on the St. Francis River at Fisk, Mo., from the 18th to the 20th. The rainfall averaged 2.25 inches over the upper basin and 2.5 inches over the middle basin. The overflow was confined to areas (primarily wooded) inside levees in the Wappapello Dam-Fisk area and covered an estimated area of 2,000 acres. Damage was negligible.

WEST GULF OF MEXICO DRAINAGE

Heavy rains on the last day of April and the first few days of May in north-central Texas caused serious flooding in Brown, Coleman, and San Saba Counties. Elm Creek, near Ballinger, Tex., reached the highest stage in 24 years of record. On the Pecan Bayou, Brownwood Reservoir (capacity 137,300 acre-feet) reached a maximum level record on May 2, 6.4 feet above spillway crest. There was a slight rise in the Colorado River below Austin, Tex., but there was no overflow. The most extensive flooding occurred in the Pecan Bayou in and below the town of Brownwood, Tex. About 200 homes were abandoned temporarily on the 2d in Brownwood, about 50 of which were not usable for 2 or 3 days. Losses to crops and soil erosion were extensive in all three counties. Three lives were lost near Voca, Tex., where a family was drowned when their car was swept from a low water bridge.

Minor flooding occurred on the Sabine River from the 4th to the 11th and on the Trinity River from the 1st to the 4th due to heavy rain between April 29 and May 2. The rainfall averaged 3.75 inches in the Sabine Basin above Mineola, Tex., and 3 to 5 inches over the Trinity Basin. Damage was insignificant and confined mainly to pasture lands.

Rainfall during this same period ranged from 2 to 14 inches in the Brazos River Basin above Waco, Tex. Most of the flooding that resulted was confined to the area bounded by Dublin, Stephenville, and Hico, Tex., which is drained by Green Creek, a tributary of the North Bosque River. The weighted rainfall for this basin of 105 square miles averaged 9.49 inches. Flooding also occurred in the lowlands of Cowhouse Creek about 6 miles west of Gatesville. This Creek drains into the Leon River. Considerable flooding occurred in Tehuacana Creek which empties into the Brazos River just below Waco, Tex. About 30 bridges were washed out and 22,000 acres of cropland flooded. About 80,000 acres of cropland will require replanting because of erosion and rain damage. About 100 miles of fences were destroyed in this area.

GREAT BASIN

Heavy runoff from melting snow on the 23d and 24th, plus normal diversion from the Weber River and through the Duchesne tunnel caused some overflowing of the upper Provo River. Two bridges near Heber, Utah, were washed out and a third, valued at about $25,000, collapsed under heavy equipment used in efforts to keep the river in its channel. Some farmland was flooded, but damages were relatively light.

Heavy thundershowers occurred along the Wasatch front in northern Utah with the heaviest rain occurring in the Salt Lake - Ogden area. Local flooding of streets and basements resulted where storm sewers and facilities were inadequate to handle the sudden downpour. Debris were deposited on lawns, gardens, and streets, causing minor damages over a widespread area.

PACIFIC COAST DRAINAGE

Columbia Basin.--The mountain snow pack was extremely heavy over the headwaters of the upper Columbia Basin during the past winter. A seasonal total of 83 inches was recorded at Spokane, Wash., which was the second highest of record. Melting, even at low levels, was retarded due to a cold spring and it was not until an unusually warm period in the middle of April that the runoff got under way.

The first major flooding of the season began in the Kootenai River Valley in northern Idaho on May 20. The river rose rapidly after the middle of the month, rising as much as 4 feet a day at Bonners Ferry, Idaho. It had risen to a stage of 35.4 feet (flood stage 31 ft.) early on the morning of the 21st but receded a foot or more shortly after as dikes gave way in reclamation District No. 7, flooding some 2,500 acres of fertile wheat lands. As the river rose again it was soon apparent that District No. 1 of nearly 3,000 acres would not be able to withstand the pressure. All residents were evacuated during the day. Levees slowly crumbled during the night and by early morning on the 22d the river had fallen about 2 feet as flood waters were diverted in filling the district. By the 23d the overflowed districts were filled and the river had risen back to a stage of 35 feet and by evening it had reached a stage of 36.6 feet. During the night, more dikes gave way, permitting flood waters to spread over Districts No. 2 and 16 and over another district known as the Kerr District. As these districts filled, the river dropped steadily to a depth of more than 2 feet, but rose again to a stage of 36.9 feet by the middle of the afternoon of the 24th. It continued to rise, reaching an all time high stage of 37.1 feet shortly before 6 p.m. District No. 4 and 5 were reached later during the night. On May 29 two more districts, No. 9 and the Nystrom district were lost adding another 2,000 acres to bring the total acreage flooded to nearly 20,000. Recession after the crest was quite slow and at month's end the river was still above the 35-foot level. It did not recede below the 31-foot flood stage until June 9.

A comparison of this year's flood with the flood of 1948 is very interesting. During both years, the Kootenai at Bonners Ferry, Idaho, remained above flood stage for 21 days. The crest of 37.1 feet this season exceeded all previous records, exceeding the crest of 35.2 feet in 1948 by 1.9 feet. However, the discharge in 1948 was greater. In 1956, about two-thirds of the Valley was inundated compared to the entire Valley of 30,000 acres inundated in 1948. This difference in area flooded is due in part to the dikes being strengthened during the past several years. Another reason may be that in 1948, high winds set up high waves that pounded many dikes to the breaking point.

Flooding occurred at numerous points late in the month including the Clearwater and the Snake Rivers in Idaho, the Payette at Emmett, Idaho; and the Yakima River at Parker, Wash., and most other east-slope Cascade streams in Washington. Locally heavy showers, combined with high river stages, resulted in damage at Camas, Wash., on the Columbia, at Pendleton, Oreg., on the Umatilla River, and Prineville, Oreg., on the Crooked River.

Several streams in the Columbia Basin had peak flows that exceeded the flows in the great flood of 1948. The Salmon River at White Bird, Idaho, reached a peak flow of 106,000 cfs on the 24th which was the highest flow reached in 37 years of record. Other record peak flows occurred in the Upper Grande Ronde and John Day Basins in Oregon, and in the Payette, Boise, and Big Wood Basins in central Idaho. The flow in the Snake River at Clarkston, Wash., reached a peak flow of 293,400 cfs on the 24th, the second highest peak flow in 41 years of record.

The Willamette River at Portland, Oreg., crested at a stage of 26.4 feet on June 4-6, the 4th highest crest stage in 79 years of record. The Willamette remained above the 18-foot flood stage throughout most of May due to back water from the Columbia. The main stem of the Columbia reached flood stage at Vancouver, Wash., on April 23d and remained above flood stage (15 ft.) during the entire month of May, finally reaching a crest stage of 26.8 feet on June 4, the second highest crest stage in 55 years of record. Large acreages of pasture land were inundated, people were driven out of their homes, and a number of industries were forced to curtail or close down completely. Clark County, Wash., had an estimated 30,000 acres flooded with about $500,000 damage in Camas alone. Thousands of acres of prosperous dairy farming areas in Oregon were also affected.

Puget Sound Drainage.--The minor flooding on the Snohomish and Snoqualmie Rivers in Washington on the 19th and 20th resulted from rapid melting of the unusually heavy snow cover in the higher elevations, during the period from the 15th to the 19th, due to high temperatures. Precipitation was light during the month and contributed very little to the runoff. Flood damage was very light along streams draining the western slope of the Cascades. A small amount of low farmland along the Skagit River was under water for a few days.

SPRING FLOODS IN ALASKA

The heavy snow accumulation during the past winter over practically all the river basins in the territory of Alaska compared favorably with that of 1937, 1945 and 1949, the other great flood years. In some cases the snow cover was even greater. The most noticeable accumulation of snow this spring was over the Kuskokwim Valley where the snow depths appear to have been 50 to 75 percent greater than in either 1945 or 1949. Due to continued cold temperatures snow cover was well retained and snow kept accumulating at many points through March and even into mid-April. Lake Nerka reported a depth of 72 inches on the ground on April 15.

Heavy spring runoff occurred over practically all the river basins in the Territory causing widespread serious flooding over practically all of the larger rivers. As usual the formation of ice gorges were the most important factor in determining the location and extent of flood developments. Gorges in upper Yukon and Tanana basins caused considerable flooding from the latter part of April into early May, with Fort Yukon and Manley Hot Springs especially hard hit. Heavy runoff from the Kuskokwim River caused high flood stages, particularly in the Aniak area during the first decade of May. The rising Nushagak River brought serious flooding in the Ekwok area on May 12-13. Flooding necessitated evacuation of many villagers from several areas and food was flown into isolated areas.

FLOOD STAGE DATA

Table 5 (All dates in May unless otherwise specified) MAY 1956

River and station	Flood stage	Above flood stages -dates		Crest *	
		From–	To–	Stage	Date
	Ft			Ft	
ST. LAWRENCE DRAINAGE Lake Michigan					
Red Cedar: Williamston, Mich.	7	Apr. 29 10	1 16	7 9 9.2	1 13
East Lansing, Mich.	8	Apr. 29 10	2 17	10.0 9.8 10.1	Apr. 30 11 14
Grand: Easton Rapids, Mich.	5	1	1	6.2	1
Lansing, Mich.	11	Apr. 30 13	2 15	11.7 11.6	1 14
Ionia, Mich.	21	10	15	22.0	11
Lowell, Mich.	15	11	17	16.1	12
Lake Huron					
Shiawassee: Owosso, Mich.	7	6 13	7 17	7.2 8.3	6 14
Flint: Flint, Mich.	11	9 11 13	11 11 16	12.3 11.2 12.85	10 11 13
Saginaw: Saginaw, Mich.	19	15	17	19.1	15
Lake Erie					
St. Joseph: Montpelier, Ohio	10	Apr. 28 10	5 17	16.2 14.7	Apr. 30 13
Maumee: Fort Wayne, Ind.	15	Apr. 29 13	4 14	17.6 16.5	2 13
ATLANTIC SLOPE DRAINAGE					
Merrimack: Concord, N. H.	12	1	3	12.0	1-3
Manchester, N. H.	7	1	2	7.1	2
Neuse: Smithfield, N. C.	13	6	8	13.9	7
Broad: Blairs, S. C.	14	5	5	14.0	5
MISSISSIPPI SYSTEM					
Missouri Basin					
Yellowstone: Billings, Mont.	11	29	31	11.65	30
Gasconade: Hazlegreen, Mo.	21	16	16	23.0	16
Jerome, Mo.	15	16	19	18.0	16
Ohio Basin					
French Creek: Meadville, Pa.	57	13	14	57.7	13
Allegheny: Olean, N. Y.	10	13	14	10.5	14
Lock 5, Freeport, Pa.	21	13	14	21.8	13
Tygart: Dailey, W. Va.	9	28	29	10.4	28
Cheat: Parsons, W. Va.	11	28	28	14.8	28
Monongahela: Lock 5 Brownsville, Pa.	23	28	28	24.1	28
Lock 4 Charleroi, Pa.	24	28	29	27.3	28
Lock 2 Braddock, Pa.	26	28	29	27.2	28
Scioto: Circleville, Ohio	14	29	29	14.0	29
East Fork: Columbus, Ind.	10	30	31	14.2	29
Seymour, Ind.	14	29	31	18.1	30
Bedford, Ind.	12.5	31	1/		
White: Anderson, Ind.	10	28	28	10.6	28
Indianapolis, Ind.	12	28	28	14.8	28
Spencer, Ind.	14	29	31	21.4	31
Elliston, Ind.	18	29	1/		
Edwardsport, Ind.	12	29	1/		
Wabash: Danville, Ill.	18	29	30	20.5	29
Crawfordsville, Ind.	8	28	29	12.6	28
Montezuma, Ind.	14	28	31	20.0	29
Terre Haute, Ind.	14	29	1/		
White Basin					
Black: Black Rock, Ark.	14	21	22	14.5	21
White: Branson, Mo.	10	15	16	19.0	16
Arkansas Basin					
Verdigris: Coyville, Kans.	28	31	31	30.9	31

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM (Cont'd.) Red Basin					
Ouachita: Camden, Ark.	26	4	7	27.3	6
Sulphur: Hagansport, Tex.	38	1	5	41.7	2
Naples, Tex.	22	6	11	**25.1	8
Lower Mississippi Basin					
St. Francis: Fisk, Mo.	20	18	20	20.6	19
WEST GULF OF MEXICO DRAINAGE					
Sabine: Mineola, Tex.	14	4	11	**17.1	8
Logansport, La.	25	7	9	25.7	8
East Fork: Rockwall, Tex.	10	1	2	13.0	1
Trinity: Dallas, Tex.	28	2	2	29.45	2
Rosser, Tex.	26	4	4	26.35	4
Columbia Basin					
Kootenai: Libby, Mont.	16	21	31	18.6	23
Bonners Ferry, Idaho	31	20	June 9	37.1	24
Flathead: Columbia Falls, Mont.	14	22	23	15.1	22
Hope, Idaho	62.5#	24	June 20	65.1	June 5
Pend Oreille: Newport, Wash.	49	26	31	52.4	June 5
Spokane: Spokane, Wash.	27	Apr. 24	1	27.6 26.9	Apr.26-27- 23
Oganogan: Tonasket, Wash.	14.8#	19	June 7	17.2	26
Wenatchee: Peshastin, Wash.	12.8#	20 June 1	22 2	13.2 13.0	21 June 1
Salmon: White Bird, Idaho	32.5#	24	28	33.1	24
Clearwater: Spalding, Idaho	18#	21	23	18.7	21
Yakima: Parker, Wash.	9.4#	18 31	26 June 5	10.9 10.5E	20 June 2
Snake: Heise, Idaho	7.5#	19	June 20	9.2	June 5
Willamette: Portland, Oreg.	18	Apr. 24 11 20	2 15 June 7	20.4 19.6 26.4	Apr. 28 13 June 4-6
Columbia: Vancouver, Wash.	15	Apr. 23	July 2	26.8	June 4
St. Helens, Oreg.	18	22	June 20	25.5	June 5-6
PUGET SOUND DRAINAGE					
Snoqualmie: Carnation (1 N.W.), Wash.	51.5	19	19	51.7	19
Snohomish: Snohomish, Wash.	24	19	20	24.1	19

E	Estimated
*	Provisional
**	Highest stage reported
1/	Continued at end of month
#	Corps of Engs. Bankful Stage

RAWINSONDE DATA

Average [illegible] values

Table 20

ALBANY, N. Y. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	10.1	68	253	[illegible]
1,000	31	[illegible]			[illegible]	5.6
950	31	573	8.7	55	282	8.5
900	[illegible]	1,017	[illegible]	57	[illegible]	[illegible]
850	31	[illegible]	3.4	[illegible]	[illegible]	15.3
800	31	[illegible]	[illegible]	52	[illegible]	[illegible]
750	31	[illegible]	- 1.0	48	281	[illegible]
700	31	3,039	- 3.5	43	286	[illegible]
650	31	3,625	[illegible]	43	285	34.0
600	30	4,243	- 9.7		[illegible]	37.5
550	29	4,909	-13.1		282	41.2
500	29	5,630	-17.5		282	46.2
450	27	6,420	-22.5		279	50.7
400	26	[illegible]	-28.5		282	[illegible]
350	[illegible]	8,210	-35.5		283	62.4
300	26	[illegible]	-42.9		[illegible]	65.7
250	26	10,472	-50.9		282	71.1
200	[illegible]	11,899	[illegible]		283	68.0
175	25	12,738	-57.6		279	53.8
150	[illegible]	[illegible]	-58.1		282	50.7
125	24	[illegible]	-57.9		282	44.3
100	[illegible]	16,252	-59.0		[illegible]	37.3
80	23	17,651	-58.1		277	[illegible]
60	21	19,477	-56.4		271	16.1
50	[illegible]	[illegible]	-54.6		258	[illegible]
40	16	22,083	-53.7		108	4.1
30	[illegible]	23,949	-52.1		[illegible]	6.8
20	6	26,553	-49.9			

ALBUQUERQUE, N. MEX. (836 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	1,619	21.7	[illegible]	[illegible]	1.4
1,000	31	26				
950	31	[illegible]				
900	31	966				
850	31	[illegible]				
800	[illegible]	[illegible]	[illegible]		251	[illegible]
750	31	2,551	15.8		[illegible]	7.8
700	31	[illegible]	10.6		[illegible]	10.1
650	31	3,741	5.0		235	11.5
600	31	4,387	- .8	[illegible]	[illegible]	13.8
550	31	[illegible]	- 6.7	35	[illegible]	16.1
500	31	5,810	-12.7	41	[illegible]	18.5
450	31	6,615	-17.9	35	254	24.9
400	[illegible]	7,477	-24.1		261	21.0
350	31	8,436	-31.1		[illegible]	23.5
300	31	9,510	-39.0		269	[illegible]
250	31	10,733	-48.1		271	23.3
200	[illegible]	12,170	-57.5		270	26.8
175	[illegible]	13,006	[illegible]		[illegible]	26.2
150	29	[illegible]	[illegible]		259	28.0
125	28	15,084	[illegible]			
100	27	[illegible]	-66.9			
80	24	17,782	-65.9			
60	[illegible]	19,548	-60.5			
50	23	20,689	-57.8			
40	[illegible]	22,112	-54.9			
30	12	23,970	-52.4			

ANCHORAGE, ALASKA ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	8.9	54	179	8.7
1,000	31	[illegible]			165	8.9
950	[illegible]	488	5.0	55	[illegible]	[illegible]
900	[illegible]	923	1.6	[illegible]	122	[illegible]
850	31	[illegible]	- 2.1	[illegible]	125	[illegible]
800	31	[illegible]	- 5.6	[illegible]	[illegible]	[illegible]
750	31	2,371	- 8.7	73	[illegible]	[illegible]
700	31	2,894	[illegible]	74	[illegible]	[illegible]
650	31	[illegible]	-15.0	[illegible]	155	17.1
600	31	[illegible]	[illegible]	71	[illegible]	[illegible]
550	[illegible]	4,707	22.4	[illegible]	[illegible]	16.7
500	31	[illegible]	-26.8	57	161	20.0
450	[illegible]	6,152	[illegible]	54	170	[illegible]
400	30	[illegible]	[illegible]	54	[illegible]	22.7
350	30	7,878	[illegible]		181	[illegible]
300	[illegible]	[illegible]	[illegible]		189	[illegible]
250	29	10,093	[illegible]		200	26.2
200	[illegible]	[illegible]	[illegible]		206	[illegible]
175	29	12,446	[illegible]		201	[illegible]
150	29	[illegible]	[illegible]		207	15.3
125	[illegible]	14,668	[illegible]		203	13.6
100	29	[illegible]	-49.8		197	[illegible]
80	[illegible]	17,588	[illegible]		[illegible]	[illegible]
60	[illegible]	19,471	-49.5		[illegible]	2.3
50	[illegible]	20,664	-49.5		119	6.0
40	24	[illegible]	-49.5		[illegible]	7.4
30	[illegible]	23,996	-49.2			

ANNETTE, ALASKA ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	[illegible]	[illegible]	[illegible]	1.9
1,000	[illegible]	163	10.5	64	190	3.1
950	31	[illegible]	[illegible]	[illegible]	216	[illegible]
900	31	[illegible]	5.0	64	[illegible]	3.3
850	31	[illegible]	[illegible]	[illegible]	[illegible]	4.9
800	[illegible]	1,984	[illegible]	64	[illegible]	7.2
750	31	[illegible]	[illegible]	[illegible]	[illegible]	8.2
700	31	3,039	[illegible]	54	[illegible]	9.9
650	31	[illegible]		45	[illegible]	10.9
600	[illegible]	[illegible]	-13.3	[illegible]	[illegible]	12.4
550	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14.4
500	31	5,595	[illegible]	[illegible]	[illegible]	15.0
450	31	6,372	[illegible]	[illegible]	276	20.4
400	31	7,205	-32.1	[illegible]	273	23.9
350	31	[illegible]	[illegible]		284	[illegible]
300	[illegible]	[illegible]	[illegible]		[illegible]	28.6
250	[illegible]	10,371	-51.9		314	17.7
200	[illegible]	[illegible]	54.3			
175	31	[illegible]	-53.2			
150	[illegible]	[illegible]	-53.2			
125	[illegible]	[illegible]	-53.8			
100	[illegible]	16,251	-54.0			
80	[illegible]	17,682	-53.9			
60	27	[illegible]	-53.4			
50	26	20,707	[illegible]			
40	[illegible]	[illegible]	[illegible]			
30	15	24,045	[illegible]			

[illegible] ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	[illegible]	[illegible]	74	262	1.7
1,000	31	165				
950	31	[illegible]	20.0			3.7
900	31	1,074	17.0		229	[illegible]
850	31	[illegible]	[illegible]		238	[illegible]
800	[illegible]	[illegible]	[illegible]		264	[illegible]
750	[illegible]	[illegible]	7.7		279	9.1
700	31	3,170	[illegible]	[illegible]	[illegible]	[illegible]
650	30	3,777	1.4	[illegible]	[illegible]	10.9
600	29	[illegible]	- 2.3	11	[illegible]	13.2
550	[illegible]	5,098	[illegible]	33	[illegible]	15.7
500	29	[illegible]	[illegible]	34	279	17.3
450	29	[illegible]	[illegible]		279	[illegible]
400	[illegible]	[illegible]	[illegible]		273	21.4
350	29	[illegible]	[illegible]		[illegible]	25.1
300	28	9,562	[illegible]			
250	[illegible]	10,789	-48.0		271	[illegible]
200	[illegible]	12,226	58.4			
175	[illegible]	13,061	[illegible]		[illegible]	33.0
150	25	[illegible]	[illegible]		286	33.0
125	22	15,092	[illegible]		293	[illegible]
100	20	16,437	[illegible]		292	21.0
80	19	17,775	[illegible]		[illegible]	12.0
60	19	19,536	-61.9		[illegible]	[illegible]
50	18	20,673	-59.1		[illegible]	5.1
40	17	22,079	[illegible]		[illegible]	9.7
30	14	23,921	-53.0		89	11.1

BARROW, ALASKA (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	- 4.6	86	56	10.1
1,000	31	122	- 5.7	[illegible]	[illegible]	10.1
950	31	531	- 5.0	79	[illegible]	[illegible]
900	31	950	- 3.8	70	89	6.0
850	31	1,400	- 5.3	63	98	3.5
800	31	1,874	- 7.6	61	98	1.7
750	31	2,382	-10.4	58	212	.6
700	31	2,902	-13.2	53	241	1.6
650	31	3,473	-16.5	49	243	1.9
600	31	4,059	-20.1	47	251	3.1
550	31	4,705	-24.4	42	249	3.7
500	31	5,385	-29.3	40	245	4.3
450	31	6,138	-34.5		237	6.2
400	31	6,943	-40.0		243	8.2
350	31	7,843	-45.9		249	9.1
300	31	8,857	-50.3		238	9.7
250	31	10,042	-50.5		234	10.7
200	31	11,508	-46.7		220	9.5
175	31	12,394	-46.2		225	8.7
150	31	13,417	-46.3		219	8.9
125	31	14,625	-46.8		221	7.8
100	31	16,101	-47.2		217	5.8
80	31	17,579	[illegible]		191	5.6
60	29	19,488	-45.8		163	3.9
50	26	20,708	-45.5		128	4.3
40	[illegible]	22,197	-45.8		109	5.4
30	20	24,110	-46.1		100	7.0
20	6	26,785	-45.1			

BETHEL, ALASKA ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	7.7	64	[illegible]	1.7
1,000	31	13			[illegible]	1.6
950	[illegible]	[illegible]	3.8	67	130	6.2
900	31	870	.0	74	132	7.6
850	31	1,324	- 3.5	80	133	10.5
800	31	1,800	[illegible]	81	138	11.8
750	31	[illegible]	[illegible]	[illegible]	[illegible]	12.0
700	31	2,831	[illegible]	70	[illegible]	11.7
650	[illegible]	3,401	[illegible]	[illegible]	139	10.7
600	31	3,993	-19.3	63	135	9.7
550	[illegible]	4,635	-23.5	57	[illegible]	10.9
500	31	5,325	-28.2	[illegible]	146	9.5
450	31	6,076	-33.2	[illegible]	157	11.1
400	31	6,891	-38.7	46	152	11.5
350	[illegible]	7,795	-44.3		158	11.1
300	31	8,817	-48.3		[illegible]	8.4
250	31	10,019	-46.0		187	[illegible]
200	31	11,509	-44.1		199	8.7
175	31	12,404	-44.2		197	10.3
150	31	13,433	-45.2		203	9.3
125	31	[illegible]	-46.2		193	8.5
100	31	[illegible]	-47.4		190	[illegible]
80	[illegible]	17,590	-47.9		187	6.4
60	27	19,489	-48.0		[illegible]	4.7
50	26	20,692	-48.4		129	6.0
40	26	22,158	-48.6		120	8.4
30	[illegible]	24,072	-48.0		96	13.2

BISMARCK, N. DAK. (955 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	[illegible]	[illegible]	[illegible]	4.7
1,000	31	111				
950	31	550			[illegible]	[illegible]
900	31	[illegible]	11.3	[illegible]	[illegible]	[illegible]
850	31	1,476	8.4	[illegible]	275	1.9
800	31	1,974	5.1	[illegible]	277	6.0
750	31	2,505	2.0	64	284	10.3
700	[illegible]	3,052	[illegible]	[illegible]	287	15.2
650	31	[illegible]	[illegible]	60	[illegible]	18.3
600	[illegible]	4,264	- 8.7	[illegible]	287	22.0
550	31	4,937	-12.8	49	287	24.9
500	31	5,653	[illegible]	43	283	29.7
450	[illegible]	[illegible]	-23.0	40	[illegible]	31.9
400	31	7,286	-29.2	[illegible]	273	36.3
350	31	8,227	-36.4	37	266	36.9
300	31	9,277	-44.6		272	42.9
250	[illegible]	10,476	-52.0		264	[illegible]
200	[illegible]	[illegible]	-56.7		261	[illegible]
175	31	12,749	-56.7		[illegible]	43.9
150	31	13,726	-56.5		[illegible]	39.2
125	31	14,882	-57.0			
100	29	16,285	-57.9			
80	29	17,690	-58.0			
60	29	19,505	-56.9			
50	[illegible]	[illegible]	-55.3			
40	29	22,092	-53.7			
30	[illegible]	23,943	-52.5			
20	9	26,626	-49.5			

BOISE, IDAHO (913 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	16.8	57	[illegible]	3.5
1,000	[illegible]	85				
950	[illegible]	[illegible]				
900	31	993	17.2	48	[illegible]	[illegible]
850	[illegible]	1,479	13.9	47	[illegible]	8.0
800	[illegible]	1,986	9.7	[illegible]	321	6.6
750	31	2,522	5.5	[illegible]	[illegible]	4.9
700	[illegible]	[illegible]	1.2	[illegible]	[illegible]	5.2
650	[illegible]	3,676	[illegible]	[illegible]	[illegible]	6.6
600	31	4,301	- 7.5	[illegible]	[illegible]	7.2
550	31	4,977	-12.0	[illegible]	245	9.1
500	31	5,696	-16.9	42	242	10.5
450	[illegible]	[illegible]	-22.7	39	[illegible]	15.3
400	31	7,332	-29.1	40	226	12.8
350	[illegible]	8,271	-36.8		222	14.8
300	[illegible]	[illegible]	-45.0		210	20.0
250	30	10,515	-52.0		209	25.3
200	29	11,937	-55.8		239	14.8
175	28	12,794	-56.1		254	12.0
150	28	13,773	-56.1		253	14.2
125	28	14,927	[illegible]		[illegible]	14.4
100	[illegible]	[illegible]	-58.8		266	8.5
80	25	17,725	-59.3		[illegible]	4.7
60	24	[illegible]	-57.9		78	6.0
50	[illegible]	[illegible]	-56.5		[illegible]	9.1
40	[illegible]	22,088	-54.9		79	9.9
30	15	23,934	-52.8			

BROWNSVILLE, TEX. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	7	24.2	[illegible]	[illegible]	10.5
1,000	29	129	24.0	[illegible]	127	[illegible]
950	[illegible]	576	21.5	[illegible]	135	[illegible]
900	29	[illegible]	19.6	66	[illegible]	15.3
850	[illegible]	1,536	17.4	51	[illegible]	14.2
800	[illegible]	2,051	14.7	46	155	10.7
750	[illegible]	2,601	12.0	40	[illegible]	[illegible]
700	[illegible]	[illegible]	9.3	34	[illegible]	[illegible]
650	39	[illegible]	5.9		[illegible]	3.3
600	[illegible]	4,430	1.7	34	[illegible]	1.9
550	29	5,126	- 2.9		341	[illegible]
500	[illegible]	5,877	[illegible]		[illegible]	3.9
450	[illegible]	[illegible]	-12.8		311	7.0
400	28	7,577	-19.0		308	[illegible]
350	27	[illegible]	-26.3		[illegible]	15.5
300	25	[illegible]	-35.0		[illegible]	18.3
250	24	10,895	-44.5		296	24.3
200	23	12,352	-55.1		[illegible]	[illegible]
175	23	[illegible]	-60.6		290	25.4
150	[illegible]	14,139	[illegible]		[illegible]	21.2
125	22	[illegible]	[illegible]		279	20.2
100	20	16,535	-73.3		[illegible]	8.4
80	19	17,847	[illegible]		147	2.7
60	14	19,565	-65.0		53	[illegible]
50	14	[illegible]	-60.1		100	14.0
40	[illegible]	22,095	-56.1		95	15.3
30	11	23,938	-52.1			
20	[illegible]	[illegible]	-47.6			

BUFFALO, N. Y. (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	182	10.0	78	213	2.9
1,000	31	144			259	1.6
950	31	575	9.8	63	247	8.7
900	31	1,020	7.2	65	257	[illegible]
850	31	1,488	[illegible]	64	269	17.1
800	31	1,980	2.3	60	[illegible]	19.4
750	[illegible]	2,505	.1	[illegible]	282	23.9
700	31	3,051	- 2.4	54	284	28.2
650	31	3,638	- 5.7	[illegible]	284	32.2
600	31	4,260	- 9.1	[illegible]	[illegible]	39.8
550	31	4,928	-12.4	[illegible]	282	43.9
500	31	5,651	-16.9	41	[illegible]	44.7
450	31	6,438	-22.4	38	281	49.0
400	31	7,289	-28.5	39	[illegible]	54.4
350	[illegible]	8,231	-35.6		286	56.5
300	[illegible]	9,284	-43.3		[illegible]	59.1
250	31	10,488	-51.2		292	63.7
200	[illegible]	11,918	-57.7		296	65.3
175	26	12,751	-58.5			
150	25	13,715	-58.3			
125	[illegible]	14,858	-59.4			
100	19	16,250	-59.5			
80	[illegible]	17,628	-59.1			
60	15	[illegible]	-56.3			
50	14	20,604	-54.3			
40	11	22,044	-53.0			
30	10	23,906	-51.9			
20	8	26,533	-48.8			

BURRWOOD, LA. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	[illegible]	87	[illegible]	5.2
1,000	31	157	23.6	78	134	5.8
950	31	602	20.9	72	127	7.0
900	31	1,071	18.2	69	119	8.0
850	31	1,559	15.2	63	117	8.0
800	31	2,070	12.2	59	[illegible]	[illegible]
750	31	2,607	[illegible]	49	[illegible]	7.6
700	31	3,177	[illegible]	41	136	7.6
650	[illegible]	3,788	3.5	[illegible]	147	4.9
600	29	[illegible]	.2		172	3.7
550	28	5,120	- 3.8		198	[illegible]
500	[illegible]	5,865	- 9.0		223	6.4
450	28	[illegible]	-14.8		240	7.0
400	[illegible]	7,554	-21.1		[illegible]	10.7
350	27	8,526	-28.3		273	14.2
300	26	9,609	-37.1		260	18.5
250	26	10,844	-46.4		267	[illegible]
200	24	12,296	-56.5		278	[illegible]
175	[illegible]	13,133	-61.2		289	[illegible]
150	21	14,080	-65.3		295	30.7
125	20	15,185	-68.7		294	24.7
100	16	16,528	-71.1		302	[illegible]
80	14	17,835	-70.1			
60	13	19,568	-63.9			
50	13	[illegible]	-60.4			
40	12	22,090	-56.7			
30	11	23,926	-52.8			
20	8	[illegible]	-50.0			
15	5	28,465	-46.6			

CARIBOU, ME (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	191	5.0	[illegible]	234	3.3
1,000	[illegible]	124				
950	31	546	4.7	[illegible]	[illegible]	[illegible]
900	31	984	2.2	60	276	11.7
850	[illegible]	1,443	- .7	62	271	14.8
800	[illegible]	1,924	- 3.5	60	[illegible]	[illegible]
750	[illegible]	2,437	[illegible]	57	[illegible]	19.2
700	31	[illegible]	[illegible]	55	279	22.0
650	31	3,548	-11.8	51	277	25.6
600	[illegible]	4,149	-15.3	46	275	30.5
550	[illegible]	4,806	-19.5	45	273	35.5
500	31	5,503	-23.7	46	275	38.3
450	[illegible]	6,275	-28.6	45	270	43.9
400	31	7,099	[illegible]	44	271	43.9
350	[illegible]	8,020	[illegible]		274	[illegible]
300	31	9,058	-45.8		275	[illegible]
250	[illegible]	[illegible]	-49.8		275	61.0
200	[illegible]	[illegible]	-51.5		[illegible]	54.6
175	[illegible]	12,555	[illegible]		[illegible]	55.7
150	[illegible]	13,554	-52.1		[illegible]	[illegible]
125	[illegible]	14,739	[illegible]		269	[illegible]
100	27	[illegible]	[illegible]		[illegible]	24.9
80	[illegible]	17,610	[illegible]		262	18.1
60	[illegible]	19,459	[illegible]		245	9.9
50	[illegible]	20,641	-52.3		224	[illegible]
40	[illegible]	22,095	[illegible]		122	2.9
30	[illegible]	[illegible]	-50.9		[illegible]	4.1
20	[illegible]	26,635	[illegible]		88	7.6
15		[illegible]	-46.2			

CHARLESTON, S. C. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	13	20.5	[illegible]	[illegible]	2.7
1,000	31	176	21.5	77	168	7.2
950	31	626	20.3	67	[illegible]	8.4
900	31	1,088	[illegible]	63	233	6.6
850	31	1,574	14.8	58	272	6.2
800	31	2,085	[illegible]	52	[illegible]	7.2
750	31	2,628	[illegible]	49	[illegible]	8.0
700	[illegible]	[illegible]	5.9	44	[illegible]	[illegible]
650	[illegible]	3,798	2.4	[illegible]	[illegible]	12.0
600	[illegible]	[illegible]	- 1.2	[illegible]	290	[illegible]
550	[illegible]	5,125	- 5.4	40	289	15.7
500	30	[illegible]	[illegible]	[illegible]	[illegible]	17.1
450	30	[illegible]	[illegible]		294	15.9
400	[illegible]	7,548	-21.8	37	[illegible]	17.3
350	[illegible]	8,517	-29.1		283	17.9
300	[illegible]	9,599	-37.9		296	22.1
250	[illegible]	10,829	-47.9		289	[illegible]
200	30	[illegible]	-58.5		[illegible]	[illegible]
175	[illegible]	13,095	[illegible]		[illegible]	32.2
150	[illegible]	14,032	[illegible]		[illegible]	[illegible]
125	29	15,133	67.1		296	23.5
100	26	[illegible]	-67.8		[illegible]	17.9
80	25	17,829	-66.5		[illegible]	[illegible]
60	24	19,591	-61.1		39	4.7
50	24	20,731	-58.0		66	6.6
40	24	22,145	-55.2		[illegible]	8.2
30	21	24,001	-51.8		93	10.1
20	6	26,619	-49.0			

COLD BAY, ALASKA (997 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	[illegible]	[illegible]	204	2.7
1,000	[illegible]				154	[illegible]
950	[illegible]	[illegible]	1.6	84	162	6.0
900	[illegible]	847	- 1.4	[illegible]	[illegible]	4.9
850	31	1,300	- 4.0	84	169	4.5
800	31	1,776	[illegible]	[illegible]	[illegible]	6.2
750	31	2,285	[illegible]	73	[illegible]	4.7
700	[illegible]	[illegible]	-11.7	[illegible]	[illegible]	6.0
650	[illegible]	3,380	-15.0	64	204	8.4
600	31	3,974	-18.5	[illegible]	196	[illegible]
550	31	[illegible]	-22.3	[illegible]	210	8.7
500	[illegible]	5,312	-26.7	49	[illegible]	12.0
450	31	6,071	-31.9	47	232	15.0
400	[illegible]	6,887	-37.3		[illegible]	[illegible]
350	[illegible]	[illegible]	[illegible]		247	[illegible]
300	[illegible]	[illegible]	-45.8		226	19.2
250	31	10,040	-45.5		[illegible]	9.9
200	31	11,529	[illegible]		228	13.0
175	31	[illegible]	[illegible]		246	10.9
150	[illegible]	[illegible]	[illegible]		248	10.3
125	30	[illegible]	-47.9		219	10.9
100	30	[illegible]	[illegible]		224	12.0
80	[illegible]	17,572	-49.4		[illegible]	8.5
60	[illegible]	19,455	[illegible]		[illegible]	5.6
50	30	20,646	[illegible]		147	5.6
40	[illegible]	22,098	-50.0		124	5.6
30	[illegible]	23,970	[illegible]		104	12.0

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

MAY 1956

Standard pressure surface (mb.)	COLUMBIA, MO. (987 MB.)						DAYTON, OHIO (983 MB.)						DODGE CITY, KANS. (923 MB.)						EL PASO, TEX. (879 MB.)						ELY, NEV. (808 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	238	19.0	68	149	4.7	30	297	15.8	70	194	2.5	31	792	19.4	56	132	9.7	31	1,195	26.0	14	313	1.7	31	1,908	11.8	53	210	1.7
1,000	31	126					30	150					31	89					31	37					31	78				
950	31	570	19.0	59	170	11.5	30	588	14.7	65	223	4.9	31	538					31	501					31	528				
900	31	1,031	16.8	60	214	13.8	30	1,043	12.5	65	254	10.3	31	1,008	19.1	56	115	6.6	31	982					31	992				
850	31	1,517	14.3	59	238	15.7	30	1,521	10.2	59	265	15.3	31	1,497	17.0	56	171	7.4	31	1,489	26.0		241	4.7	31	1,477				
800	31	2,026	11.7	53	248	16.7	30	2,024	8.3	48	276	18.3	31	2,012	14.7	52	211	7.6	31	2,018	21.6		245	6.2	31	1,990	12.6	47	203	1.4
750	31	2,568	8.5	48	259	18.3	30	2,564	5.7	45	283	21.6	31	2,561	11.8	42	230	11.3	31	2,577	16.8		251	9.3	31	2,537	9.6	43	229	4.1
700	31	3,131	5.2	48	269	21.8	30	3,117	2.5	49	284	23.7	31	3,128	7.7	40	251	14.2	31	3,151	11.7		248	10.3	31	3,098	5.1	45	234	5.6
650	30	3,735	1.1	51	274	23.3	30	3,717	- 1.1	49	283	25.3	31	3,738	3.3	35	257	16.3	31	3,774	6.4		241	12.6	31	3,703	- .1	51	228	11.5
600	30	4,371	- 2.9	46	276	28.6	30	4,347	- 4.9	49	285	29.3	31	4,377	- 1.6	36	261	18.5	31	4,417	1.2	29	239	15.0	31	4,333	- 5.1	54	217	12.8
550	30	5,058	- 7.4	42	278	30.1	30	5,029	- 8.8	41	289	31.9	31	5,064	- 6.3		266	19.6	31	5,107	- 4.3	32	241	16.1	31	5,013	-10.6	57	220	14.8
500	30	5,791	-12.4	41	278	32.6	30	5,758	-13.5	38	284	34.8	31	5,802	-11.6		273	20.4	31	5,854	- 9.4		255	16.3	31	5,736	-15.9	51	229	15.3
450	30	6,596	-17.6	37	277	34.2	30	6,555	-19.1	37	286	40.0	31	6,610	-17.3		267	24.3	31	6,667	-15.0		260	18.5	31	6,529	-21.3	42	231	20.2
400	30	7,460	-23.7	39	273	35.4	30	7,417	-25.1	38	287	43.1	31	7,471	-24.0		261	22.1	31	7,540	-21.3		265	19.8	31	7,380	-27.6	38	237	22.0
350	30	8,420	-31.0		272	36.3	29	8,378	-32.1		287	47.1	31	8,430	-31.5		264	22.1	31	8,510	-28.9		274	21.8	31	8,326	-34.7		237	19.4
300	30	9,494	-39.2		272	40.0	28	9,440	-40.7		285	51.7	31	9,501	-39.9		275	24.3	31	9,593	-37.4		275	23.9	31	9,386	-42.0		238	15.3
250	29	10,722	-48.5		269	46.6	28	10,657	-49.9		285	58.1	31	10,721	-48.8		270	28.0	30	10,826	-46.6		263	32.8	31	10,598	-49.8		243	19.8
200	28	12,152	-58.8		268	52.1	26	12,082	-59.2		284	60.8	30	12,160	-58.0		257	33.2	30	12,273	-56.3		267	35.9	30	12,031	-55.4		244	30.5
175	27	12,982	-62.8		267	50.9	26	12,911	-62.2		282	61.0	30	12,992	-61.7		267	27.8	30	13,111	-61.0		259	36.9	29	12,875	-56.2		258	25.4
150	27	13,926	-64.1		271	47.6	24	13,867	-62.3		280	54.0	29	13,943	-62.7		267	28.4	28	14,058	-64.2		259	34.2	29	13,852	-57.2		260	19.4
125	27	15,040	-64.8		276	38.5	21	14,983	-62.1		286	46.0	26	15,068	-65.1		275	21.6	28	15,164	-67.3				29	14,998	-59.3		264	15.5
100	26	16,396	-65.3		281	25.8	17	16,341	-62.5		286	31.7	25	16,423	-66.6		282	16.3	28	16,500	-69.3				28	16,384	-61.1		271	9.5
80	23	17,750	-63.9		276	16.7	16	17,720	-61.9		292	21.4	21	17,780	-65.0		300	7.0	28	17,833	-68.0				22	17,761	-60.9			
60	20	19,525	-59.4		324	3.5	13	19,501	-58.4		283	8.7	20	19,548	-60.0		35	3.3	26	19,584	-62.4				22	19,558	-58.7			
50	18	20,676	-57.2		54	2.7	11	20,658	-55.3		316	2.1	19	20,689	-57.2		73	4.1	26	20,720	-58.0				22	20,707	-56.5			
40	17	22,096	-54.7		73	4.5	9	22,094	-53.1				18	22,107	-54.5		65	7.4	25	22,134	-54.7				19	22,138	-54.5			
30	12	23,956	-51.8		63	4.5	6	23,970	-51.1				13	23,973	-52.2		72	9.5	24	23,981	-51.9				12	23,974	-52.8			
20	5	26,588	-48.4										5	26,661	-48.4				9	26,648	-47.8									

Standard pressure surface (mb.)	FAIRBANKS, ALASKA (990 MB.)						FORT HUACHUCA, ARIZ. (858 MB.)						FORT WORTH, TEX (993 MB.)						GLASGOW, MONT. (934 MB.)						GRAND JUNCTION, COLO. (849 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	135	14.1	40	198	1.7	30	1,426	22.5	16	249	5.2	31	178	25.5	61	156	7.0	31	695	13.3	55	52	2.9	31	1,474	19.4	25	288	1.6
1,000	31	47					30	60					31	118					31	110					31	38				
950	31	481	10.7	38	209	2.7	30	526					31	570	24.2	56	158	20.0	31	548					31	495				
900	31	925	6.5	44	187	3.9	30	1,005					31	1,039	20.8	59	170	22.0	31	1,005	12.8	50	34	4.3	31	968				
850	31	1,390	2.4	52	185	5.1	30	1,505	22.3	17	257	6.6	31	1,531	17.2	60	181	17.9	31	1,482	9.4	53	346	2.9	31	1,465			28	1.2
800	31	1,876	- 1.8	60	190	7.4	30	2,028	18.6	19	250	7.0	31	2,046	14.1	54	197	13.4	31	1,981	5.6	58	294	4.5	31	1,986	17.6	24	255	5.1
750	31	2,392	- 6.0	68	184	8.9	30	2,581	14.0	20	240	8.5	31	2,594	11.4	48	218	8.9	31	2,513	1.7	62	295	8.0	31	2,540	12.8	28	239	6.8
700	31	2,922	- 9.8	67	182	11.1	30	3,152	9.4	22	235	9.9	31	3,162	8.4	38	245	5.6	31	3,058	- 2.0	60	288	10.3	31	3,106	7.7	34	228	9.5
650	31	3,497	-13.6	62	194	13.0	30	3,762	4.7	25	235	12.0	31	3,774	4.1	37	295	5.2	31	3,646	- 5.4	53	290	14.0	31	3,713	2.2	41	227	11.8
600	31	4,094	-17.4	58	192	14.4	30	4,407	0.0		237	13.6	31	4,415	- .1	33	311	6.2	31	4,268	- 8.9	48	298	16.7	31	4,351	- 3.3	45	224	14.6
550	31	4,741	-21.4	51	187	15.2	29	5,094	- 4.5		241	14.4	31	5,109	- 4.8	32	308	7.8	31	4,937	-13.2	45	296	21.2	31	5,033	- 8.9	47	223	16.1
500	31	5,437	-26.1	48	193	15.9	27	5,839	-10.0		241	17.7	31	5,848	- 9.9	33	292	9.3	31	5,655	-18.1	42	298	25.1	31	5,763	-14.4	45	228	16.3
450	31	6,195	-31.6	45	200	17.1	24	6,648	-15.7		246	20.0	31	6,659	-15.7		278	9.3	31	6,442	-23.4	43	290	30.1	31	6,559	-19.9	41	241	17.5
400	31	7,014	-37.3	40	196	22.0	22	7,518	-22.5		250	20.8	31	7,529	-22.0		266	11.7	31	7,285	-29.6	41	283	33.6	30	7,420	-26.2	40	245	18.5
350	31	7,922	-44.0		192	25.3	22	8,484	-30.5		251	22.5	31	8,496	-29.4		264	14.6	31	8,223	-36.9		272	32.4	30	8,371	-33.5	39	258	15.3
300	30	8,932	-52.2		198	25.1	20	9,566	-38.7		247	28.6	31	9,577	-37.8		270	20.0	31	9,271	-44.9		264	34.4	30	9,434	-41.8		254	18.6
250	30	10,118	-50.0		198	24.1	19	10,796	-48.3		252	30.3	31	10,808	-47.1		271	27.4	31	10,468	-52.2		267	32.4	30	10,643	-50.9		250	18.8
200	30	11,585	-47.1		201	16.3	18	12,239	-57.2		260	33.0	30	12,257	-57.4		273	33.8	31	11,897	-55.7		263	37.3	30	12,070	-57.7		259	18.5
175	30	12,469	-46.4		207	16.1	15	13,079	-61.2		258	37.1	30	13,091	-62.2		276	35.4	30	12,745	-55.7		267	33.6	30	12,909	-58.8		257	20.2
150	30	13,492	-46.5		215	13.8	12	14,021	-64.3		260	26.6	29	14,038	-65.8		281	31.5	30	13,727	-55.4		269	29.5	30	13,875	-59.5		258	19.0
125	30	14,697	-47.8		204	9.5	7	15,157	-66.1				27	15,134	-68.0		277	25.3	28	14,877	-56.0		271	26.4	29	15,007	-60.9		262	19.8
100	30	16,165	-48.9		200	8.2	7	16,498	-68.4				26	16,468	-69.1		273	15.2	25	16,298	-56.3		278	17.5	28	16,385	-63.4		261	16.9
80	30	17,628	-48.5		194	6.4	6	17,832	-66.8				23	17,805	-68.7		275	8.2	23	17,709	-56.3		296	12.4	27	17,751	-63.8		287	11.1
60	30	19,520	-48.3		138	4.5							22	19,548	-62.4		44	3.1	22	19,540	-55.0		359	4.1	25	19,528	-59.3		39	1.9
50	30	20,720	-48.2										21	20,686	-59.0		73	8.7	21	20,707	-54.1		52	6.0	23	20,671	-56.8		103	6.6
40	29	22,186	-48.3										20	22,096	-55.3		94	11.7	17	22,147	-52.9		55	2.1	20	22,084	-54.7			
30	22	24,083	-48.4										19	23,948	-52.2		89	12.6	13	23,995	-51.9				15	23,933	-52.9			
20	7	26,720	-46.9										8	26,620	-47.5															

Standard pressure surface (mb.)	GREAT FALLS, MONT. (888 MB.)						GREEN BAY, WIS. (990 MB.)						GREENSBORO, N. C. (988 MB.)						HATTERAS, N. C. (1020 MB.)						HILO, T. H. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	12.6	55	288	3.9	31	210	9.5	75	144	2.3	31	273	17.7	76	213	1.6	31	3	18.0	85	176	1.9	31	9	23.9	74	40	6.2
1,000	31	105					31	127					31	171					31	171	18.7	78	183	3.1	31	145	22.5	74	65	6.4
950	31	547					31	558	10.9	62	170	2.7	31	615	18.6	62	232	6.6	31	617	17.5	70	242	6.8	31	592	18.9	81	70	7.6
900	31	1,006					31	1,005	9.2	60	265	5.1	31	1,075	16.1	64	254	9.3	31	1,073	14.9	68	263	7.4	31	1,052	15.4	87	71	6.4
850	31	1,485	10.6	55	355	4.3	31	1,477	6.9	59	274	11.3	31	1,559	12.9	65	272	10.3	31	1,555	12.5	60	274	8.7	31	1,536	12.5	89	68	5.4
800	31	1,987	6.6	60	349	3.5	31	1,973	4.2	58	276	15.9	31	2,066	10.2	61	276	12.0	31	2,062	10.2	54	288	9.9	31	2,044	10.7	81	60	3.1
750	31	2,519	2.7	66	297	4.3	31	2,501	1.6	50	278	19.8	31	2,606	7.4	56	284	12.6	31	2,602	7.6	49	289	12.6	31	2,592	9.5	54	34	2.3
700	31	3,068	- 1.1	69	278	7.6	31	3,049	- 1.2	44	278	24.7	31	3,166	4.1	54	288	15.2	31	3,162	4.3	44	291	14.6	31	3,152	7.3	42	51	1.2
650	31	3,660	- 4.8	64	277	9.9	31	3,639	- 4.6	41	279	27.8	31	3,772	.7	50	291	17.9	31	3,765	1.0	40	289	17.3	31	3,768	4.8	33	242	1.2
600	31	4,281	- 8.6	59	276	13.2	31	4,262	- 8.3	40	282	35.0	31	4,404	2.8	43	294	19.8	31	4,402	- 2.6	35	285	20.2	31	4,408	1.2		242	3.3
550	31	4,952	-12.6	51	277	16.3	31	4,935	-12.5	41	283	38.5	31	5,093	- 6.7	40	289	21.2	29	5,088	- 6.6		280	22.3	31	5,103	- 3.1	34	229	5.2
500	31	5,671	-17.6	50	271	18.1	31	5,653	-17.0	43	285	42.9	31	5,827	-11.5	36	287	21.4	29	5,826	-11.2		281	24.3	31	5,850	- 8.1	35	237	8.4
450	31	6,458	-23.1	47	281	18.3	31	6,445	-22.4	41	279	48.0	31	6,635	-17.0	33	289	25.1	29	6,638	-16.5		292	24.1	31	6,672	-13.7	34	243	12.6
400	31	7,304	-29.7	46	274	22.0	31	7,291	-28.4	39	282	47.6	31	7,500	-23.1	32	283	28.0	29	7,503	-22.9		293	28.4	31	7,545	-20.1	32	244	15.7
350	30	8,231	-37.3		266	24.3	31	8,233	-35.4		280	47.2	30	8,464	-30.4		285	29.9	29	8,466	-30.2		294	29.9	31	8,520	-27.5	34	250	20.8
300	30	9,281	-45.3		267	27.4	31	9,288	-42.8		278	43.7	30	9,540	-38.9		287	32.2	29	9,543	-38.6		286	32.8	31	9,610	-35.9		251	28.9
250	30	10,476	-52.5		267	27.6	30	10,490	-50.9				30	10,764	-48.4		286	35.0	29	10,768	-48.2		288	36.9	31	10,850	-45.8		259	38.1
200	30	11,902	-56.1		267	28.0	30	11,917	-57.0				30	12,198	-58.5		289	35.5	29	12,202	-58.4		299	37.9	31	12,296	-57.5		256	42.5
175	30	12,750	-56.3		269	24.9	30	12,759	-58.1				30	13,028	-63.1		294	34.8	28	13,031	-63.7		288	29.1	31	13,127	-63.4		262	47.0
150	29	13,725	-55.6		264	24.7	30	13,729	-57.9				30	13,969	-65.3		297	34.0	26	13,964	-66.4		291	27.8	31	14,062	-68.3		269	45.6
125	29	14,885	-56.1		264	19.2	30	14,878	-57.9				30	15,078	-65.1		302	28.0	25	15,070	-65.8		292	25.1	27	15,147	-71.5		281	29.3
100	29	16,300	-57.2		269	15.7	29	16,277	-59.1				30	16,435	-65.6		308	19.6	25	16,425	-65.4		298	20.4	27	16,459	-72.4		265	12.2
80	28	17,706	-57.0		271	10.3	28	17,673	-59.0				29	17,798	-63.9		315	11.1	21	17,782	-63.7		304	13.8	25	17,774	-70.7		196	4.5
60	25	19,531	-55.7		296	2.7	28	19,488	-56.3				27	19,579	-59.4		325	4.1	21	19,563	-59.5		358	9.7	24	19,492	-66.4		93	13.6
50	22	20,687	-54.8		76	1.7	28	20,648	-54.9				27	20,727	-56.8		42	4.5	21	20,709	-57.4		346	2.1	23	20,603	-63.1		90	18.5
40	20	22,125	-53.6		71	6.2	25	22,085	-53.3				27	22,148	-54.5		42	5.1	21	22,127	-54.7		91	8.7	20	21,992	-58.9		83	25.8
30	11	24,006	-52.0		73	7.8	21	23,933	-51.9				25	24,003	-52.3		41	4.9	19	23,985	-51.7				14	23,820	-54.5		90	29.5
20	10	26,669	-50.0										18	26,643	-49.5				5	26,654	-49.1									
15													8	28,540	-47.3															

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

INTERNAT. FALLS, MINN. (972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	360	9.0	54	28	0.8
1,000--	31	119				
950----	31	545	8.8	48	53	1.0
900----	31	991	6.2	51	250	1.9
850----	31	1,457	3.7	55	253	6.2
800----	31	1,946	.6	56	266	10.3
750----	31	2,465	- 1.9	54	281	15.0
700----	31	3,008	- 4.8	55	289	16.5
650----	31	3,590	- 8.0	51	292	17.9
600----	31	4,205	-11.4	47	291	22.3
550----	30	4,871	-15.1	39	288	26.6
500----	29	5,585	-19.5	40	288	30.9
450----	29	6,363	-25.0	39	284	35.0
400----	29	7,204	-31.3		283	39.1
350----	29	8,135	-37.8		281	44.5
300----	28	9,170	-44.8		283	50.7
250----	24	10,392	-50.7		282	56.9
200----	22	11,830	-53.9		278	52.8
175----	19	12,699	-53.8		280	45.8
150----	17	13,680	-53.7		284	45.6
125----	16	14,862	-54.7		286	45.1
100----	14	16,278	-55.6		285	36.7
80-----	13	17,698	-56.4		291	26.8
60-----	10	19,535	-54.7			
50-----	9	20,707	-53.2			
40-----	9	22,146	-52.4			
30-----	5	24,049	-50.5			
20-----						

JACKSON, MISS. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	101	22.2	78	155	2.3
1,000--	30	157	22.9	72	163	3.7
950----	30	605	21.3	64	170	8.2
900----	30	1,071	18.3	66	181	7.8
850----	30	1,558	15.1	65	189	6.8
800----	30	2,069	12.1	59	198	6.6
750----	30	2,610	9.0	55	210	5.6
700----	29	3,175	5.9	55	223	5.2
650----	29	3,784	2.8	49	237	5.1
600----	29	4,422	- .8	12	260	5.8
550----	29	5,113	- 4.8		262	7.2
500----	29	5,855	- 9.4		278	9.5
450----	29	6,670	-15.1		276	9.3
400----	29	7,540	-21.5		265	9.1
350----	29	8,510	-28.7		257	14.0
300----	29	9,591	-37.2		254	15.3
250----	29	10,829	-46.8		266	21.2
200----	29	12,274	-57.2		272	26.2
175----	28	13,112	-61.5		280	27.4
150----	26	14,063	-65.0		282	26.0
125----	26	15,166	-67.7		290	21.0
100----	26	16,501	-69.4		290	14.6
80-----	23	17,834	-69.1		292	9.5
60-----	22	19,581	-62.8		58	6.1
50-----	21	20,715	-59.3		80	8.2
40-----	20	22,126	-55.4		87	13.6
30-----	18	23,977	-52.2		93	11.7
20-----	10	26,615	-48.8			

JACKSONVILLE, FLA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	22.4	82	143	4.1
1,000--	31	174	22.2	75	147	6.4
950----	31	616	20.2	66	147	[illegible]
900----	31	1,084	17.5	66	120	3.3
850----	31	1,571	14.4	67	[illegible]	1.9
800----	31	2,081	11.7	59	323	2.9
750----	31	2,621	9.4	43	206	2.5
700----	31	3,188	6.1	43	293	3.3
650----	31	3,794	2.4	44	283	1.1
600----	29	4,435	- 1.0		281	5.4
550----	29	5,125	- 5.1		280	8.2
500----	28	5,866	- 9.7		282	8.1
450----	28	6,677	-15.3		286	9.7
400----	27	7,550	-21.6		281	11.1
350----	27	8,519	-29.0		286	12.4
300----	26	9,601	[illegible]		292	12.6
250----	26	10,830	-47.6		296	11.6
200----	25	12,269	-58.2		289	16.9
175----	25	13,099	-63.0		292	23.7
150----	25	14,038	-66.3		296	23.1
125----	25	15,136	-68.5		301	18.3
100----	25	16,468	-69.6		299	14.0
80-----	23	17,795	-68.3		323	9.3
60-----	21	19,550	-62.7		59	6.8
50-----	21	20,682	-59.2		82	10.3
40-----	18	22,092	-55.6		89	13.6
30-----	16	23,946	-52.2		91	14.8
20-----						

KING SALMON, ALASKA (1001 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	15	7.5	68	138	7.8
1,000--	30	19			159	[illegible]
950----	30	137	3.4	71	145	10.5
900----	30	873	- .3	77	146	[illegible]
850----	30	1,329	- 3.5	80	145	13.0
800----	30	[illegible]	- 6.5	82	149	[illegible]
750----	30	2,311	- 9.2	79	151	11.7
700----	30	[illegible]	-12.4	73	150	11.1
650----	30	3,407	-16.1	66	162	[illegible]
600----	30	[illegible]	-19.3	[illegible]	159	12.4
550----	30	4,645	-23.5	57	160	[illegible]
500----	30	[illegible]	-28.1	[illegible]	166	13.8
450----	30	6,082	-33.5	52	174	[illegible]
400----	29	[illegible]	-39.2		175	[illegible]
350----	29	7,800	-44.4		186	[illegible]
300----	29	8,823	-46.9		199	[illegible]
250----	29	10,029	-46.5		205	24.9
200----	28	11,514	-45.4		210	19.8
175----	27	12,402	-45.6		213	19.1
150----	27	13,426	-46.5		213	18.1
125----	27	14,632	-47.6		207	[illegible]
100----	26	16,098	-48.7		207	12.4
80-----	26	17,560	-49.4		197	8.9
60-----	25	19,451	-49.0		185	6.4
50-----	23	[illegible]	-49.1		162	5.4
40-----	21	22,120	-48.7		124	5.6
30-----	16	23,979	-47.7		112	[illegible]
20-----	11	26,669	-44.9			

[illegible], ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	4.7	76	87	2.5
1,000--	31	[illegible]	5.0		79	2.9
950----	31	[illegible]	[illegible]	[illegible]	99	7.0
900----	31	919	.2	62	107	8.0
850----	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.4
800----	31	1,852	[illegible]	61	124	9.5
750----	31	[illegible]	[illegible]	57	[illegible]	10.1
700----	31	[illegible]	[illegible]	[illegible]	127	11.3
650----	31	3,452	-15.9	[illegible]	[illegible]	10.9
600----	[illegible]	4,045	[illegible]	47	130	11.7
550----	31	[illegible]	-24.1	45	134	[illegible]
500----	31	5,374	-28.6	[illegible]	130	10.9
450----	31	6,127	-33.8	45	127	[illegible]
400----	[illegible]	6,936	[illegible]		130	[illegible]
350----	31	7,835	[illegible]		137	13.4
300----	[illegible]	8,847	-50.5		151	[illegible]
250----	31	[illegible]	[illegible]		155	10.7
200----	30	[illegible]	[illegible]		[illegible]	[illegible]
175----	30	[illegible]	-45.5		160	8.9
150----	30	13,421	[illegible]		[illegible]	10.1
125----	29	14,635	-46.7		[illegible]	[illegible]
100----	28	16,108	[illegible]		175	8.0
80-----	28	[illegible]	-47.2		[illegible]	6.6
60-----	27	[illegible]	-46.9		[illegible]	[illegible]
50-----	[illegible]	20,690	-46.8		138	7.4
40-----	22	22,178	-46.6		121	[illegible]
30-----	15	24,070	[illegible]		109	[illegible]
20-----						

LAKE CHARLES, LA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	23.3	84	166	2.9
1,000--	31	150	23.6	77	151	5.6
950----	31	595	21.3	71	152	8.4
900----	31	1,065	18.6	69	137	7.4
850----	31	1,553	15.7	62	132	8.4
800----	31	2,066	12.8	57	130	8.5
750----	31	2,605	10.0	49	134	7.2
700----	31	3,177	7.2	39	136	5.2
650----	30	3,785	3.9	32	164	.6
600----	30	4,428	.1	33	300	1.2
550----	30	5,119	- 4.2		294	1.6
500----	30	5,865	- 9.2		280	3.7
450----	30	6,679	-14.7		272	5.4
400----	30	7,554	-20.8		285	12.2
350----	29	8,525	-28.4		289	16.1
300----	29	9,611	-36.8		286	19.0
250----	29	10,847	-46.2		284	27.2
200----	29	12,294	-56.7		284	33.0
175----	29	13,131	-61.4		281	36.1
150----	28	14,076	-65.5		278	33.4
125----	28	15,178	-67.8		290	29.7
100----	27	16,513	-70.2			
80-----	26	17,834	-69.8			
60-----	25	19,578	-63.3			
50-----	24	20,706	-59.4			
40-----	23	22,119	-55.5			
30-----	19	23,969	-52.4			
20-----	13	26,603	-48.8			
15-----	7	28,507	-46.6			

LANDER, WYO. (828 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,696	13.1	52	281	1.9
1,000--	30	68				
950----	30	515				
900----	30	979				
850----	30	1,470				
800----	30	1,982	12.7	43	323	3.5
750----	30	2,522	8.5	45	330	4.1
700----	30	3,086	4.2	49	296	4.3
650----	30	3,683	- .8	54	265	8.2
600----	30	4,318	- 5.9	56	258	12.6
550----	30	4,992	-10.7	52	260	18.8
500----	30	5,719	-15.9	46	266	20.0
450----	30	6,509	-21.8	42	254	23.1
400----	30	7,360	-28.3	39	257	26.6
350----	30	8,303	-35.8		257	28.2
300----	29	9,355	-44.0		257	28.7
250----	29	10,555	-52.3		251	24.9
200----	29	11,976	-57.9		258	24.5
175----	29	12,817	-58.3		261	24.7
150----	29	13,787	-57.8		274	20.0
125----	29	14,935	-59.0		282	17.5
100----	29	16,329	-60.6		291	12.4
80-----	28	17,714	-60.8		310	6.0
60-----	26	19,512	-58.2		59	5.1
50-----	26	20,666	-56.2		57	6.0
40-----	22	22,091	-54.9		75	11.1
30-----	17	23,945	-52.9			
20-----	6	26,570	-50.6			
15-----						

LAS VEGAS, NEV. (934 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	660	25.3	14	224	7.4
1,000--	31	49				
950----	31	508				
900----	31	981	24.0		224	9.9
850----	31	1,476	19.5		227	10.1
800----	31	1,993	15.0		218	11.1
750----	31	2,541	10.2	24	209	11.3
700----	31	3,103	5.3	28	211	9.7
650----	31	3,706	.6	29	216	10.9
600----	31	4,340	- 3.9	30	224	11.5
550----	30	5,023	- 8.5		235	15.3
500----	29	5,753	-13.7		237	22.1
450----	29	6,553	-19.1		240	25.3
400----	28	7,411	-25.3		245	31.9
350----	28	8,367	-32.3		244	38.5
300----	27	9,434	-40.1		246	42.3
250----	25	10,661	-48.1		247	44.1
200----	22	12,113	-55.3		252	44.1
175----	21	12,958	-57.1		252	45.3
150----	20	13,936	-58.5		255	35.7
125----	19	15,072	-60.3		259	23.5
100----	15	16,468	-64.0		237	16.7
80-----	13	17,825	-64.5		254	5.4
60-----	13	19,599	-60.6		73	6.0
50-----	13	20,741	-57.8		83	8.5
40-----	11	22,166	-55.0		80	8.7
30-----	8	24,010	-52.5			
20-----						
15-----						

LITTLE ROCK, ARK. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	22.2	76	142	4.3
1,000--	31	139	22.7	72	141	5.1
950----	31	590	21.3	67	170	10.5
900----	31	1,054	18.7	69	191	11.1
850----	31	1,542	15.6	66	218	9.7
800----	31	2,054	12.7	57	230	9.1
750----	31	2,600	9.7	49	[illegible]	[illegible]
700----	31	3,164	6.9	43	257	8.5
650----	30	3,777	3.3	38	280	8.9
600----	30	4,415	- .8	33	303	10.1
550----	30	5,105	- 5.3	30	310	.1
500----	30	5,845	-10.3		304	12.4
450----	30	6,655	-15.7		297	15.0
400----	30	7,526	-22.0		278	[illegible]
350----	30	8,493	-29.2		271	19.0
300----	30	9,575	-37.5		275	21.4
250----	30	10,807	-47.1		280	20.2
200----	30	12,248	-57.6		277	26.4
175----	30	13,080	-62.2		276	31.9
150----	30	14,024	-64.7		286	30.3
125----	29	15,131	-65.9		287	27.8
100----	26	16,472	-67.3		290	17.7
80-----	21	17,818	-65.9		295	12.0
60-----	18	19,587	-60.9		356	5.6
50-----	17	20,731	-57.7		53	6.6
40-----	16	22,144	-54.7		64	4.7
30-----	12	23,995	-52.5			
20-----						
15-----						

MAZATLAN, MEXICO (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	26.0	76		
1,000--	31	83	25.3	76		
950----	31	541	25.0	51		
900----	31	1,009	24.0	43		
850----	31	1,507	21.3	46		
800----	31	2,030	18.2	52		
750----	31	2,587	14.6	49		
700----	31	3,160	11.0	51		
650----	28	3,783	6.9	50		
600----	28	4,428	2.2	53		
550----	27	5,123	- 3.0	[illegible]		
500----	26	5,873	- 7.6			
450----	25	6,692	-12.6			
400----	25	7,575	-18.4			
350----	24	8,558	-25.7			
300----	23	9,654	-34.2			
250----	21	10,906	-43.7			
200----	13	12,362	-55.4			
175----	9	13,196	-61.9			
150----	6	14,141	-68.0			

MC GRATH, ALASKA (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	103	10.3	52	150	1.0
1,000--	31	38				
950----	31	465	7.1	51	150	3.3
900----	31	905	3.3	57	155	6.0
850----	31	1,365	- .6	64	154	7.6
800----	31	1,845	- 4.3	69	156	9.9
750----	31	2,351	- 8.1	72	155	14.4
700----	31	2,883	-11.8	72	165	14.2
650----	31	3,451	-15.5	69	158	16.7
600----	30	4,046	-19.0	63		
550----	30	4,690	-22.8	58		
500----	30	5,381	-27.3	54		
450----	30	6,130	-32.6	53		
400----	30	6,953	-38.1	55		
350----	30	7,858	-44.5			
300----	30	8,875	-49.6			
250----	30	10,068	-48.0			
200----	29	11,540	-45.2			
175----	29	12,431	-44.9			
150----	29	13,459	-45.7			
125----	28	14,670	-46.9			
100----	27	16,144	-47.9			
80-----	25	17,607	-48.0			
60-----	24	19,505	-48.0			
50-----	24	20,706	-47.8			
40-----	22	22,173	-47.7			
30-----	15	24,056	-47.4			
20-----						

MEDFORD, ORE. (968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	17.3	59	328	5.1
1,000--	31	123				
950----	31	564	16.9	53	320	6.2
900----	31	1,021	13.8	53	314	7.0
850----	31	1,499	10.2	59	305	5.4
800----	31	2,000	6.5	64	294	3.1
750----	31	2,533	2.9	65	244	2.9
700----	31	3,082	- .5	59	228	3.3
650----	30	3,675	- 3.9	48	251	3.7
600----	30	4,296	- 7.8	46	272	4.9
550----	30	4,972	-12.0	42	268	5.8
500----	30	5,690	-16.9	40	291	7.4
450----	30	6,481	-22.4	39	259	6.0
400----	30	7,327	-28.7	39	268	5.8
350----	30	8,269	-35.8		259	8.7
300----	30	9,323	-43.6		253	12.2
250----	30	10,527	-50.7		248	13.2
200----	27	11,959	-55.9		261	18.3
175----	25	12,808	-56.3		251	17.7
150----	25	13,787	-56.5		250	18.1
125----	23	14,943	-58.0		247	11.3
100----	22	16,350	-59.4		237	9.1
80-----	20	17,736	-59.7		255	5.2
60-----	19	19,542	-57.4			
50-----	18	20,692	-55.9			
40-----	16	22,124	-54.8			
30-----	10	23,961	-52.6			
20-----						

MERIDA, MEXICO (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	27	26.9	76		
1,000--	31	127	26.3	75		
950----	31	577	23.8	73		
900----	31	1,051	21.1	70		
850----	31	1,544	18.1	71		
800----	31	2,061	14.6	76		
750----	31	2,605	11.3	73		
700----	31	3,178	8.2	62		
650----	31	3,791	5.0	52		
600----	31	4,436	1.6	48		
550----	31	5,134	[illegible]	39		
500----	30	5,885	- 6.2			
450----	30	6,712	-11.6			
400----	30	7,593	-17.5			
350----	28	8,579	-24.8			
300----	25	9,686	-33.1			
250----	22	10,935	-43.1			
200----	18	12,395	-55.2			
175----	14	13,239	-61.5			
150----	12	14,174	-68.1			
125----	8	15,251	-73.0			

MIAMI, FLA. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	25.7	76	98	6.8
1,000--	31	158	24.4	76	95	10.1
950----	31	605	21.0	77	101	13.2
900----	31	1,073	18.1	70	102	13.2
850----	31	1,560	15.1	68	96	11.5
800----	31	2,071	12.3	58	95	9.7
750----	31	2,611	9.7	46	87	8.7
700----	31	3,180	6.6	38	89	6.8
650----	31	3,789	3.2	35	93	6.2
600----	31	4,429	- .3		74	3.9
550----	31	5,119	- 4.3		43	3.3
500----	30	5,864	- 9.0		11	3.3
450----	30	6,680	-14.6		316	2.5
400----	30	7,553	-20.9		311	5.1
350----	30	8,525	-28.2		312	8.7
300----	29	9,611	-36.6		301	14.6
250----	29	10,846	-46.4		296	19.6
200----	29	12,291	-57.3		297	24.3
175----	29	13,124	-62.6		294	28.7
150----	29	14,062	-67.4		296	27.0
125----	24	15,156	-71.6		295	22.1
100----	20	16,467	-72.4		307	14.8
80-----	18	17,781	-71.1		4	8.4
60-----	16	19,509	-63.9		80	11.7
50-----	16	20,634	-60.7		88	12.2
40-----	15	22,035	-56.6		96	14.8
30-----	13	23,894	-51.9		91	19.8
20-----						

MIDLAND, TEX. (914 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	871	25.1	38	136	6.4
1,000--	31	72				
950----	31	533				
900----	31	1,010	24.9	39	154	10.3
850----	31	1,509	21.5	41	161	20.4
800----	31	2,031	18.1	40	177	18.3
750----	31	2,586	14.1	39	191	12.4
700----	31	3,158	10.0	37	213	8.5
650----	31	3,773	5.5	35	241	10.1
600----	31	4,418	.5	36	257	[illegible]
550----	31	5,108	- 4.8	34	[illegible]	13.6
500----	31	5,852	-10.1		265	[illegible]
450----	31	6,667	-15.2		263	16.7
400----	31	7,535	-21.6		266	19.0
350----	31	8,505	-28.9		268	22.3
300----	31	9,589	-37.3		271	25.3
250----	31	10,821	-46.7		[illegible]	31.1
200----	31	12,269	-56.4		[illegible]	33.6
175----	31	13,107	-60.9		266	38.7
150----	30	14,057	-64.9		267	37.1
125----	29	15,158	-67.8		272	28.9
100----	27	16,495	-69.4		[illegible]	22.0
80-----	24	17,825	-67.7		[illegible]	6.2
60-----	22	19,572	-62.2		92	6.2
50-----	21	20,707	-58.6		63	5.8
40-----	18	22,115	-55.3		108	10.1
30-----	16	23,964	-52.0			
20-----	7	26,558	-48.9			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

NANTUCKET, MASS. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	[illegible]	84	248	[illegible]
1,000	31	157	9.1	71	243	6.6
950	31	[illegible]	[illegible]	58	274	10.3
900	31	1,030	7.8	[illegible]	[illegible]	[illegible]
850	31	1,499	[illegible]	[illegible]	293	14.0
800	31	[illegible]	[illegible]	50	[illegible]	[illegible]
750	31	2,521	.8	[illegible]	[illegible]	[illegible]
700	31	3,066	- 1.7	46	286	25.6
650	31	3,657	[illegible]	42	282	30.5
600	31	4,278	- 7.7		[illegible]	[illegible]
550	31	4,955	-11.5	40	[illegible]	40.2
500	31	5,675	-16.2	40	281	42.2
450	31	[illegible]	-21.6		[illegible]	40.4
400	31	[illegible]	-27.7		[illegible]	41.4
350	31	8,262	[illegible]		284	41.6
300	31	9,319	-42.4		282	[illegible]
250	31	10,528	[illegible]			
200	31	[illegible]	-58.0			
175	[illegible]	12,797	-60.2			
150	[illegible]	13,758	-59.7			
125	[illegible]	14,898	-60.1			
100	27	[illegible]	-60.0			
80	[illegible]	17,675	-58.9			
60	26	[illegible]	-56.3			
50	[illegible]	[illegible]	-55.3			
40	[illegible]	22,077	-53.6			
30	[illegible]	23,930	-52.5			
20	[illegible]	26,573	-49.9			

NASHVILLE, TENN. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	19.9	[illegible]	183	0.8
1,000	[illegible]	[illegible]				
950	31	609	19.3	62	[illegible]	[illegible]
900	31	1,069	[illegible]	[illegible]	223	9.5
850	31	1,553	13.5	64	239	11.3
800	31	2,062	11.0	56	253	12.2
750	31	[illegible]	8.1	[illegible]	267	[illegible]
700	31	3,164	4.9	44	274	14.4
650	31	3,767	1.4	[illegible]	[illegible]	16.3
600	31	4,404	- 2.7	47	[illegible]	18.3
550	31	[illegible]	[illegible]	[illegible]	[illegible]	20.0
500	[illegible]	5,826	-11.5	44	285	19.0
450	31	6,632	-16.9	[illegible]	[illegible]	18.3
400	31	[illegible]	-22.9	37	281	21.8
350	31	8,462	-30.2		278	24.9
300	31	9,539	-38.6		278	[illegible]
250	31	10,764	-48.3		284	28.6
200	31	12,199	[illegible]		287	32.2
175	31	[illegible]	-62.7		297	34.6
150	31	[illegible]	-65.2		305	31.9
125	[illegible]	15,082	-66.0		312	26.6
100	[illegible]	16,433	-66.8		311	18.6
80	27	17,787	[illegible]		339	10.5
60	27	19,555	-60.8		32	5.4
50	[illegible]	20,694	-57.8		73	6.2
40	23	22,110	-54.8		78	6.2
30	[illegible]	23,959	-52.4		78	7.0
20	14	26,594	-49.6			

NOME, ALASKA (1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	5.7	70	[illegible]	1.5
1,000	31	48			72	2.9
950	31	467	2.5	67	88	6.6
900	31	901	- .4	[illegible]	91	8.7
850	31	1,355	[illegible]	[illegible]	103	9.7
800	31	1,831	[illegible]	[illegible]	110	9.9
750	31	2,337	- 9.4	[illegible]	[illegible]	10.3
700	31	[illegible]	-12.6	[illegible]	113	[illegible]
650	[illegible]	[illegible]	-16.0	56	110	9.3
600	[illegible]	4,023	-19.7	[illegible]	[illegible]	10.7
550	31	4,667	-23.7	[illegible]	114	8.4
500	31	[illegible]	-28.3	47	111	[illegible]
450	30	6,106	[illegible]	45	113	9.7
400	[illegible]	6,919	-39.2		131	9.7
350	[illegible]	7,821	-45.1		143	[illegible]
300	30	[illegible]	-49.2		152	9.3
250	[illegible]	10,036	-47.0		181	5.2
200	[illegible]	11,521	-44.3		181	[illegible]
175	30	12,416	-44.3		[illegible]	6.8
150	30	13,446	-44.8		179	7.2
125	30	14,661	-45.6		[illegible]	7.0
100	[illegible]	16,146	[illegible]		187	7.8
80	28	17,621	-47.0		184	4.7
60	28	19,524	-47.2		157	5.6
50	28	20,729	-47.3		122	6.6
40	28	22,203	-47.1		117	9.9
30	23	24,116	-46.8		96	9.5
20	14	26,815	-45.3			

NORFOLK, VA. (1019 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	16.3	78	152	2.1
1,000	31	172	16.3	70	178	5.6
950	31	613	15.9	61	229	10.1
900	31	1,068	14.0	[illegible]	262	11.8
850	31	1,548	11.5	62	277	14.4
800	31	2,053	9.1	56	285	15.7
750	31	2,590	6.2	55	284	16.3
700	31	3,118	3.0	51	287	18.1
650	31	3,749	- .7	50	287	20.2
600	31	4,380	- 4.2	47	285	22.9
550	30	[illegible]	- 8.2	[illegible]	283	27.2
500	30	5,793	-12.6	[illegible]	284	29.7
450	30	6,596	-17.9		280	35.0
400	29	7,460	-24.0		278	36.9
350	29	8,419	-31.4		278	41.4
300	28	9,492	-39.8		279	43.7
250	28	10,710	-49.5		281	51.7
200	28	12,135	-59.9		283	54.8
175	28	12,959	-64.2		286	54.4
150	27	13,896	-65.4		290	45.1
125	21	15,019	-64.1		286	29.5
100	19	16,374	-64.5		285	22.7
80	18	17,740	-62.7		290	12.8
60	17	19,527	-58.3		282	1.7
50	16	20,683	-56.5		78	3.3
40	15	22,116	-54.2		87	9.5
30	12	23,969	-52.3			
20						

NORTH PLATTE, NEBR. (916 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	[illegible]	66	91	[illegible]
1,000	31	91				
950	31	534				
900	31	995	16.2	59	99	5.4
850	31	1,480	14.3	55	134	4.3
800	31	1,990	11.8	52	193	1.9
750	31	2,535	9.3	47	251	7.0
700	31	3,097	5.9	45	252	11.1
650	31	3,700	1.6	45	262	15.3
600	31	4,339	[illegible]	47	264	20.8
550	31	5,023	- 8.2	46	262	24.5
500	31	5,754	-13.2	44	270	24.5
450	31	6,555	-18.9	40	272	27.8
400	31	7,415	-25.4	38	275	29.9
350	31	8,369	-32.8		269	33.4
300	31	9,435	-40.7		269	36.9
250	31	10,651	-49.5		268	38.1
200	30	12,080	-57.5		271	37.1
175	30	12,917	-59.9		266	31.9
150	30	13,879	-59.6		263	29.7
125	30	15,016	-60.4		272	21.6
100	29	16,394	-63.2		289	16.5
80	25	17,773	-62.4			
60	22	19,559	-58.0			
50	22	20,712	-56.2			
40	17	22,144	-54.7			
30	13	23,996	-52.5			
20						

OAKLAND, CALIF. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31		15.0	69	278	9.9
1,000	31	130	14.2	70	275	[illegible]
950	31	566	13.4	62	270	9.3
900	31	1,017	12.9	50	[illegible]	7.2
850	31	1,495	10.6	49	[illegible]	[illegible]
800	31	1,997	7.8	46	216	3.1
750	31	[illegible]	[illegible]	39	212	2.9
700	31	3,087	2.1	36	241	4.7
650	31	[illegible]	[illegible]	[illegible]	258	5.6
600	31	4,313	- 5.6	33	264	[illegible]
550	31	4,993	-10.1	33	[illegible]	7.8
500	31	[illegible]	-15.2	[illegible]	265	11.1
450	31	6,511	-21.2	[illegible]	[illegible]	14.0
400	31	7,362	-27.9		272	[illegible]
350	31	[illegible]	-35.0		268	22.7
300	31	9,364	-42.8		262	[illegible]
250	31	10,572	-50.5		[illegible]	31.9
200	31	12,007	-56.0		[illegible]	36.1
175	29	12,843	-57.5		262	32.1
150	29	13,814	-58.5		258	29.1
125	29	14,956	-60.2		258	25.4
100	29	16,340	-62.5		[illegible]	16.5
80	29	[illegible]	-63.1		255	9.7
60	[illegible]	19,497	-59.9		[illegible]	[illegible]
50	22	20,641	-58.0		70	3.9
40	21	22,055	-55.7		74	7.6
30	15	23,906	-52.9		79	6.0
20	9	26,533	-49.5			

OKLAHOMA CITY, OKLA. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	21.8	68	158	8.7
1,000	31	105				
950	31	555	22.9	[illegible]	160	13.4
900	31	1,024	20.7	60	174	14.2
850	31	[illegible]	18.1	58	200	13.6
800	31	2,033	15.5	53	[illegible]	13.2
750	31	[illegible]	12.7	45	[illegible]	13.8
700	31	3,153	[illegible]	41	[illegible]	12.8
650	31	3,764	4.2	39	275	14.8
600	31	4,407	- .4	38	274	16.5
550	31	5,094	[illegible]	[illegible]	[illegible]	17.9
500	31	5,837	-10.4		[illegible]	17.9
450	31	6,649	[illegible]		283	19.2
400	31	7,516	-22.3		277	21.2
350	31	8,482	-29.7		270	22.3
300	31	9,562	-38.2		[illegible]	20.8
250	31	10,790	-47.9		266	24.9
200	31	12,226	-58.2		266	35.0
175	31	13,057	[illegible]		280	34.6
150	31	14,002	-64.8		287	30.7
125	29	15,108	-66.7		281	22.9
100	27	16,460	-68.4		290	15.0
80	[illegible]	17,799	-66.6		305	5.6
60	[illegible]	[illegible]	-61.1		46	4.9
50	26	20,700	-58.0		84	[illegible]
40	24	22,110	-55.0		86	7.6
30	17	23,967	-52.6		[illegible]	10.1
20	5	26,589	-49.5			

OMAHA, NEBR. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	403	[illegible]	[illegible]	86	2.5
1,000	31	108				
950	31	[illegible]	17.3	59	[illegible]	2.7
900	31	1,009	14.9	60	163	3.1
850	31	1,491	12.5	62	[illegible]	5.6
800	31	1,998	10.1	[illegible]	[illegible]	9.7
750	31	[illegible]	7.1	[illegible]	[illegible]	13.0
700	31	3,097	3.7	57	264	17.9
650	31	3,700	.1	[illegible]	267	18.6
600	31	4,332	- 3.9	[illegible]	[illegible]	24.9
550	30	[illegible]	- 8.4	[illegible]	271	27.8
500	30	5,746	-13.1	[illegible]	[illegible]	30.7
450	28	6,548	-18.7		277	34.6
400	28	7,408	-24.9		277	38.7
350	28	8,364	[illegible]		274	44.3
300	28	9,432	-40.6		274	46.6
250	28	10,647	-49.9		276	51.5
200	28	12,076	[illegible]		273	55.0
175	28	12,909	-60.8		272	52.4
150	28	13,867	-60.7		274	46.8
125	27	15,000	-61.7		[illegible]	[illegible]
100	25	16,374	-62.9		286	29.7
80	22	17,742	-61.7		291	22.3
60	21	19,550	-57.6		[illegible]	9.9
50	21	20,706	-55.5		346	[illegible]
40	17	22,148	-53.0		54	3.9
30	14	23,998	-52.0		93	[illegible]
20						

PHOENIX, ARIZ. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	341	[illegible]	19	[illegible]	4.3
1,000	31	[illegible]				
950	31	520	29.2		283	7.8
900	31	997	25.7		273	11.3
850	31	1,495	21.4	17	257	9.7
800	31	2,015	16.9	19	232	8.0
750	31	2,563	12.2	22	211	9.7
700	31	3,132	7.6	25	206	11.5
650	31	3,741	3.8		220	13.8
600	31	4,382	- .8		226	16.3
550	31	5,070	- 5.5		234	19.6
500	31	5,811	-10.6		240	18.1
450	31	6,619	-16.7		250	21.0
400	31	7,486	-23.4		251	23.9
350	31	8,448	-30.7		250	27.6
300	31	9,525	-38.8		254	29.1
250	31	10,750	[illegible]		258	36.9
200	31	12,190	-57.0		259	40.8
175	31	13,028	-60.1		262	40.0
150	31	13,984	-62.5		259	22.9
125	31	15,101	-64.8		261	20.0
100	31	16,454	-67.2		256	10.9
80	30	17,796	-67.0		313	3.7
60	28	19,554	-61.4		63	9.7
50	28	20,693	-58.4		77	11.8
40	24	22,113	-54.9			
30	13	23,971	-52.1			
20	6	26,628	-48.9			

PITTSBURGH, PA (977 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	353	14.4	66	277	2.7
1,000	30	156				
950	30	594	13.5	63	265	4.7
900	30	1,044	11.0	62	259	10.3
850	30	1,519	8.5	57	264	15.2
800	30	2,018	6.1	52	270	19.4
750	30	2,553	3.5	49	276	23.1
700	30	3,102	.9	47	282	27.8
650	30	3,694	- 2.6	46	285	31.3
600	30	4,324	- 6.4	45	284	34.4
550	30	5,001	-10.7	45	283	37.7
500	30	5,726	-15.3	42	283	41.8
450	30	6,521	-20.8	42	285	48.2
400	30	7,374	-26.7	40	281	53.2
350	30	8,324	-33.7	45	281	61.0
300	30	9,387	-41.6		282	63.5
250	28	10,607	-50.3		280	62.4
200	24	12,042	-60.0		280	66.6
175	22	12,880	-63.8		286	66.2
150	20	13,812	-63.4		284	54.0
125	13	14,938	-63.2		284	44.5
100	10	16,326	-63.0			
80	7	17,689	-60.5			
60	6	19,473	-59.4			
50						
40						
30						
20						

PORTLAND, ME. ([illegible] MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	7.5	79	244	3.9
1,000	31	[illegible]	[illegible]	[illegible]	248	[illegible]
950	31	572	8.2	[illegible]	[illegible]	[illegible]
900	31	1,013	5.6	53	286	[illegible]
850	31	1,478	2.7	51	286	14.6
800	31	1,966	.1	[illegible]	284	16.9
750	31	2,486	- 2.0	45	[illegible]	20.4
700	31	3,027	- 4.6	44	276	22.7
650	31	3,612	- 7.7	40	271	29.1
600	31	4,225	-11.0	42	[illegible]	33.8
550	31	4,895	-14.8	40	276	40.0
500	31	5,604	-19.1		276	45.1
450	31	6,390	-24.1		277	48.2
400	31	7,231	-30.1	36	279	53.6
350	31	[illegible]	-36.4		277	59.8
300	31	9,219	-43.3		278	67.4
250	31	10,425	-50.2		278	[illegible]
200	30	[illegible]	-55.1		278	63.7
175	30	12,704	-55.9		276	60.6
150	30	13,683	-55.6		274	51.5
125	[illegible]	14,838	-56.9		273	39.2
100	29	[illegible]	-57.9		278	[illegible]
80	26	17,651	-56.9		271	[illegible]
60	24	19,478	-55.0		257	10.1
50	23	[illegible]	[illegible]		267	5.4
40	19	22,061	-52.6		116	5.6
30	11	23,956	-51.4			
20						

RAPID CITY, S. DAK. (901 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	966	12.8	68	11	2.1
1,000	31	102				
950	31	544				
900	31	[illegible]			15	1.0
850	31	1,483	11.8	58	[illegible]	2.1
800	31	1,988	8.6	61	275	6.4
750	31	2,523	5.5	61	272	10.5
700	31	3,080	2.2	61	280	15.9
650	31	3,677	[illegible]	64	276	18.3
600	31	4,305	[illegible]	[illegible]	[illegible]	22.7
550	31	4,979	-11.0	55	273	25.6
500	31	5,705	-15.8	49	272	29.5
450	31	6,497	-21.2	45	[illegible]	33.8
400	30	7,352	-27.6	44	275	39.0
350	30	8,297	-35.0		274	37.5
300	29	9,359	[illegible]		273	47.8
250	29	10,567	-50.8		[illegible]	46.6
200	29	11,996	-57.6		266	46.6
175	27	12,835	-58.3		[illegible]	42.2
150	24	13,802	-57.9		270	38.7
125	20	14,963	-58.5		271	33.0
100	7	16,366	[illegible]			

ST. CLOUD, MINN. (977 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	316	12.3	63	112	0.4
1,000	31	118				
950	31	554	12.6	59	[illegible]	.4
900	31	1,004	10.0	[illegible]	260	1.2
850	31	1,476	7.1	61	[illegible]	5.6
800	31	1,973	4.0	[illegible]	290	9.7
750	31	2,500	1.6	56	293	16.5
700	31	3,049	.9	53	291	20.4
650	31	3,639	- 4.1	48	283	24.5
600	31	4,264	- 8.0	45	283	26.6
550	31	4,936	[illegible]	41	[illegible]	31.3
500	30	5,658	-17.0	34	283	35.9
450	30	6,448	-22.3	34	281	38.7
400	30	7,295	-28.2	34	276	38.9
350	30	8,240	-35.1		273	37.5
300	30	9,298	-42.8		274	47.4
250	30	10,504	-51.3		272	47.6
200	29	11,934	-56.2			
175	27	12,784	-56.5			
150	27	13,761	-56.5			
125	27	14,916	-57.3			
100	27	16,321	-58.7			
80	27	17,723	-58.1			
60	26	19,550	-56.1			
50	25	20,713	-54.9			
40	20	22,136	-53.3			
30	16	23,999	-51.6			
20	9	26,636	[illegible]			

ST. PAUL IS., ALASKA (1000 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	1.5	85	26	4.1
1,000	31	10			30	4.7
950	31	425	- 1.6	81	61	4.9
900	31	849	- 3.6	81	70	4.7
850	31	1,299	- 5.8	78	102	4.3
800	31	1,772	- 7.9	75	102	3.5
750	31	2,281	-10.3	70	94	2.9
700	31	2,800	-12.8	63	95	3.1
650	31	3,372	-15.9	58	98	1.9
600	31	3,961	-19.3	54	71	.4
550	31	4,610	-23.4	50	317	2.1
500	31	5,293	-27.9	47	340	2.1
450	31	6,054	-33.0	45	309	3.3
400	31	6,861	-38.1		270	6.0
350	31	7,767	-44.3		275	11.1
300	31	8,791	-47.3		249	13.4
250	30	9,998	-46.2		248	17.1
200	30	11,485	-44.6		236	14.0
175	30	12,377	-44.8		241	13.2
150	30	13,404	-45.7		232	11.7
125	30	14,613	-47.2		232	9.1
100	30	16,085	-48.4		223	8.7
80	30	17,551	-48.7		221	5.2
60	28	19,445	-48.7		174	4.9
50	28	20,641	-48.8		157	5.1
40	24	22,120	-48.7		108	6.8
30	16	24,031	-48.2		102	10.7
20						

SAN ANTONIO, TEX. (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	25.6	56	146	10.9
1,000	31	121				
950	31	581	23.4	58	139	18.3
900	31	1,043	20.1	61	145	16.1
850	31	1,534	17.1	59	147	11.1
800	31	2,049	14.3	52	152	8.5
750	31	2,602	11.9	40	140	6.4
700	31	3,166	9.3		131	3.7
650	31	3,783	5.4	28	343	.4
600	31	4,425	1.0	27	317	2.5
550	31	5,114	- 4.0		301	5.2
500	31	5,863	- 8.9		306	6.4
450	31	6,678	-14.5		296	9.3
400	31	7,551	-20.9		282	13.6
350	31	8,523	-28.0		286	14.6
300	30	9,613	-36.4		287	18.8
250	30	10,850	-46.0		283	26.0
200	30	12,298	-56.4		284	33.4
175	30	13,135	-61.6		286	37.9
150	30	14,078	-66.3		282	30.5
125	29	15,171	-69.9		277	19.6
100	27	16,494	-71.9		247	6.2
80	22	17,808	-70.7		141	4.1
60	21	19,532	-64.6		95	11.1
50	21	20,656	-59.9		87	13.0
40	21	22,061	-56.3		76	15.3
30	18	23,893	-52.5		82	15.7
20	9	26,516	-48.5			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

SAN JUAN, P. R. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	24.7	84	108	5.6
1,000	31	151	24.1	81	101	11.3
950	31	601	21.3	82	98	17.5
900	31	1,066	18.4	83	98	17.1
850	31	1,555	15.4	81	97	15.9
800	31	2,067	12.5	78	90	12.6
750	31	2,608	10.0	67	94	10.7
700	31	3,178	7.4	54	95	8.5
650	31	3,790	4.4	45	102	4.1
600	31	4,433	.5	43	80	1.6
550	31	5,123	- 3.5	40	255	.6
500	31	5,873	- 7.8	34	230	3.7
450	31	6,690	-13.1	31	226	4.9
400	31	7,572	-19.4	34	267	10.5
350	31	8,549	-26.7	36	265	13.4
300	31	9,642	-35.3	38	273	17.9
250	31	10,884	-45.4		275	27.8
200	31	12,335	-56.9		274	38.5
175	31	13,167	-63.2		278	41.6
150	31	14,101	-69.6		279	41.4
125	30	15,175	-74.5		281	34.6
100	27	16,468	-75.1		278	16.7
80	20	17,767	-71.8		319	3.1
60	18	19,491	-65.6		86	10.3
50	18	20,611	-61.0		74	17.5
40	16	22,011	-56.9		83	25.6
30	15	23,845	-53.1		87	33.6
20	5	26,498	-48.8			

SANTA MARIA, CALIF. (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	74	13.2	74	303	[illegible]
1,000	31	134	13.0	74	303	6.2
950	31	569	11.7	[illegible]	317	5.6
900	31	1,017	12.8	59	318	3.3
850	31	1,497	12.0	46	26	1.6
800	31	2,002	9.3	42	101	3.1
750	31	2,538	6.7	31	252	1.4
700	31	3,097	3.8		262	7.4
650	31	3,699	.4		269	10.9
600	31	4,332	- 3.5		275	14.6
550	31	5,015	- 8.0		270	18.8
500	31	5,748	-12.9		268	21.4
450	31	6,551	-18.6		259	25.1
400	31	7,410	-24.9		258	28.7
350	31	8,367	-31.9		261	29.9
300	31	9,439	-39.6		277	33.6
250	31	10,661	-48.6		269	31.7
200	31	12,101	-55.8		269	37.7
175	31	12,946	-58.4		257	36.9
150	31	13,912	-59.3		260	32.6
125	30	15,050	-61.1		260	25.1
100	28	16,426	-63.4		254	14.4
80	27	17,792	-63.1		258	8.2
60	27	19,574	-59.6		110	[illegible]
50	26	20,719	-57.2		81	7.0
40	25	22,140	-54.6		71	12.0
30	19	23,985	-52.0			
20	6	26,591	-48.3			

SANTA MONICA, CALIF. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	[illegible]	[illegible]	[illegible]	7.0
1,000	31	123	15.5	76	257	6.8
950	31	560	15.2	65	269	4.7
900	31	1,016	13.6	60	263	.8
850	31	1,497	[illegible]	48	243	1.4
800	31	2,004	10.7	34	254	3.3
750	31	2,542	[illegible]	[illegible]	[illegible]	5.6
700	31	3,106	[illegible]	28	255	9.7
650	31	3,709	1.3		264	13.2
600	31	4,345	- 2.9		258	16.3
550	31	5,028	- 7.2		260	22.5
500	31	5,766	-12.0		258	26.6
450	31	6,568	-17.9		257	30.9
400	31	7,433	-24.4		253	35.2
350	31	8,391	-31.7		258	39.8
300	29	9,461	-39.9		264	38.7
250	28	10,679	-48.5		261	44.5
200	28	12,117	-56.9		[illegible]	46.8
175	27	12,959	-59.8		263	46.8
150	25	13,922	-61.3		267	40.2
125	19	15,054	-63.1		260	32.4
100	6	16,443	-65.0			

[illegible] STE. MA[illegible] (990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	[illegible]	72	[illegible]	1.6
1,000	31	141				
950	31	567	6.7	60	[illegible]	3.9
900	31	1,005	5.0	61	271	9.1
850	31	1,470	[illegible]	60	[illegible]	12.0
800	31	1,959	.5	55	281	15.9
750	31	2,480	- 2.1	52	[illegible]	20.2
700	31	3,020	- 4.6	40	287	22.9
650	31	3,601	- 7.6	41	288	27.6
600	31	4,219	-11.3	39	288	[illegible]
550	31	4,880	-15.0	36	286	36.9
500	31	5,596	-19.9	39	285	40.4
450	30	6,373	-25.4		283	49.0
400	29	7,210	-31.3		283	50.3
350	28	8,142	-37.7		283	[illegible]
300	[illegible]	9,189	-44.4		279	70.5
250	27	10,398	-50.0		280	73.4
200	24	11,847	-54.0		282	63.5
175	20	12,699	-54.0		281	55.4
150	17	[illegible]	-53.7		286	46.8
125	[illegible]	14,845	-54.7		292	36.7
100	7	16,217	-55.3			
80	5	17,655	-55.4			

[illegible] ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	[illegible]	[illegible]	[illegible]	4.3
1,000	31	[illegible]	23.8	69	[illegible]	[illegible]
950	31	[illegible]	[illegible]	62	[illegible]	11.5
900	31	1,054	[illegible]	[illegible]	179	9.5
850	31	1,542	15.4	[illegible]	172	8.5
800	31	2,053	12.5	51	177	7.4
750	31	2,598	9.7	44	196	5.2
700	31	3,162	6.7	39	[illegible]	[illegible]
650	31	3,773	3.1	[illegible]	290	[illegible]
600	31	4,411	- .7	32	270	3.3
550	31	5,100	1.8		311	6.4
500	31	5,843	- 9.7		294	6.4
450	31	6,655	-15.3		275	8.0
400	31	7,527	-21.8		277	12.0
350	31	8,495	-28.9		272	15.5
300	31	9,578	-37.5		276	[illegible]
250	31	10,809	[illegible]		279	25.1
200	31	12,251	-57.4		277	33.2
175	[illegible]	13,083	-62.1		[illegible]	36.9
150	29	14,024	-65.4		280	34.0
125	28	15,130	-68.0		277	24.5
100	[illegible]	16,458	-69.7		[illegible]	[illegible]
80	24	17,789	-68.5		296	6.0
60	21	19,533	-62.8		[illegible]	5.4
50	20	20,671	-59.1		[illegible]	11.5
40	16	22,075	-55.8		89	12.2
30	11	23,926	-52.5			

SPOKANE, WASH. (930 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	16.3	49	250	0.6
1,000	31	102				
950	31	543				
900	31	1,005	14.6	46	230	1.7
850	31	1,484	10.7	50	289	2.1
800	31	1,986	6.5	57	282	3.1
750	31	2,517	2.4	62	283	4.5
700	31	3,065	- 1.7	62	268	5.6
650	31	3,657	- 5.3	58	267	7.2
600	31	4,275	9.1	53	260	9.3
550	31	4,947	-13.6	53	263	11.8
500	31	5,661	-18.4	46	258	13.8
450	31	6,447	-23.9	45	254	15.7
400	31	7,288	-30.2	43	258	16.7
350	31	8,224	-37.3		252	17.3
300	31	9,270	-45.5		259	19.6
250	31	10,464	-52.7		262	21.4
200	31	11,889	-56.2		273	19.8
175	31	12,738	-55.7		272	19.2
150	31	13,719	-55.6		276	16.5
125	30	14,873	-56.4		271	14.0
100	30	16,284	-57.4		272	12.2
80	28	17,691	-57.3		265	7.0
60	26	19,531	-55.8		305	1.0
50	23	20,707	-54.5		83	4.3
40	20	22,140	-53.6		78	6.8
30	17	23,995	-51.4		70	8.5
20	9	26,700	-46.7			
15	5	28,683	-42.7			

TAMPA, FLA. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	23.8	77	71	5.4
1,000	31	170	23.8	74	79	8.2
950	31	617	21.5	72	100	11.7
900	31	1,086	18.7	71	113	10.3
850	31	1,574	15.5	72	119	7.8
800	31	2,087	12.6	67	102	5.2
750	31	2,631	10.0	56	93	[illegible]
700	31	3,197	6.8	48	110	2.9
650	31	3,807	3.5	44	133	2.7
600	31	4,449	- .1	41	132	2.3
550	31	5,143	- 4.0		230	.4
500	31	5,886	- 8.9		277	3.3
450	31	6,705	-14.3		275	4.5
400	31	7,578	-20.7		293	5.1
350	31	8,550	-28.2		279	7.8
300	31	9,637	-36.5		278	11.5
250	31	10,874	-46.4		277	17.5
200	30	12,319	-57.4		279	24.3
175	30	13,152	-62.7		280	26.8
150	29	14,091	-67.2		287	24.7
125	27	15,182	-69.6		293	20.4
100	26	16,505	-71.3		315	12.4
80	24	17,825	-69.9		349	8.5
60	24	19,563	-63.0		70	8.7
50	24	20,691	-60.1		78	12.8
40	23	22,098	-55.8		90	17.3
30	22	23,945	-52.2		92	19.6
20	17	26,600	-48.0		85	21.0

TATOOSH ISLAND, WASH. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	10.6	[illegible]	240	5.1
1,000	31	144	11.2	74	267	6.4
950	31	576	11.3	58	285	6.6
900	31	1,023	9.6	53	306	3.9
850	31	1,495	[illegible]	52	315	1.9
800	31	1,991	3.9	47	287	1.9
750	31	2,516	1.0	39	269	3.7
700	31	3,063	- 2.2	38	274	5.2
650	31	3,650	- 5.7	39	269	5.8
600	31	4,271	[illegible]	37	276	8.0
550	31	4,938	-13.3	34	277	9.5
500	31	5,657	-18.2		279	11.7
450	30	6,441	-23.4		280	12.8
400	30	7,289	-29.6		278	13.2
350	30	8,227	-36.6		274	14.2
300	30	9,275	-44.3		277	16.3
250	30	10,475	-51.7		265	16.9
200	28	11,906	-56.2		266	18.6
175	28	12,755	-55.5		264	17.1
150	28	13,739	-54.9		262	17.7
125	28	14,901	-55.8		268	15.3
100	28	16,317	-56.5		268	11.1
80	28	17,733	-56.1		258	6.0
60	28	19,566	-54.8		231	1.9
50	27	20,730	-53.5		96	.8
40	27	22,169	-52.2		65	6.2
30	23	24,024	-50.7		78	5.6
20	11	26,662	-48.4			
15	5	28,588	-45.0			

TOPEKA, KANS. (982 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	270	20.9	59	150	3.9
1,000	31	113				
950	31	557	19.9	57	161	8.7
900	31	1,022	17.5	58	180	13.8
850	31	1,508	15.0	62	206	14.4
800	31	2,020	12.4	58	226	15.2
750	31	2,565	9.6	52	246	16.5
700	31	3,128	6.0	49	258	19.2
650	31	3,735	2.0	44	266	20.4
600	31	4,371	- 2.5	43	264	22.9
550	31	5,056	- 7.3	40	268	26.8
500	31	5,791	-12.2	37	268	29.7
450	31	6,596	-17.3	33	269	32.6
400	31	7,460	-23.7		268	36.3
350	31	8,420	30.9		269	37.7
300	30	9,495	-39.1		269	39.0
250	29	10,711	-48.5		267	45.5
200	24	12,147	-58.7		261	49.0
175	27	12,973	-62.4		269	48.8
150	26	13,917	-63.4		269	44.7
125	25	15,037	-63.5		275	37.1
100	23	16,391	-64.5		281	26.2
80	23	17,757	-63.3		284	14.0
60	21	19,540	-59.1		311	6.4
50	20	20,692	-56.7		29	3.5
40	17	22,105	-54.3		54	5.4
30	11	23,967	-52.3			

TUCSON, ARIZ. (922 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	781	27.2	14	184	5.1
1,000	31	[illegible]				
950	31	513				
900	31	993	26.5		280	8.5
850	31	1,493	22.4		267	10.7
800	31	2,015	17.8	18	244	10.1
750	31	2,563	13.1	21	221	10.3
700	31	3,137	8.3	24	208	10.5
650	31	3,745	3.6		213	13.8
600	31	4,389	- .5		[illegible]	17.1
550	31	5,078	- 5.0		231	20.0
500	31	5,822	-10.1		237	22.1
450	31	6,632	-15.9		242	27.2
400	31	7,502	-22.3		245	31.5
350	31	8,469	-29.7		248	35.7
300	31	9,549	-38.0		251	39.8
250	31	10,778	-47.4		252	44.1
200	31	12,221	-56.8		256	51.1
175	30	13,057	-60.8		256	49.7
150	29	14,008	-63.7		256	44.1
125	29	15,120	-65.5		255	31.9
100	29	16,467	-68.3		255	19.4
80	26	17,799	-68.2		257	9.3
60	21	19,547	-62.4		96	1.6
50	21	20,680	-59.4		82	4.9
40	19	22,091	-55.8		83	14.4
30	[illegible]	23,949	-52.7		86	13.6
20	13	26,596	-48.1		91	12.0
15	9	28,495	-46.6			

VERA CRUZ, MEXICO (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	13	27.0	79		
1,000	26	110	26.2	80		
950	26	558	23.2	76		
900	26	1,033	21.1	62		
850	26	1,526	18.0	62		
800	26	2,042	14.7	62		
750	26	2,597	11.4	64		
700	26	3,159	8.4	55		
650	25	3,778	5.2	55		
600	24	4,421	1.8	42		
550	23	5,123	- 1.8			
500	23	5,872	- 6.2			
450	22	6,705	-11.1			
400	22	7,584	-16.7			
350	20	8,571	-23.8			
300	19	9,678	-32.1			
250	16	10,935	-41.9			
200	14	12,409	-54.2			
175	13	13,249	-61.1			
150	12	14,191	-68.2			
125	9	15,265	-73.8			
100	5	16,561	-75.7			
80						
60						
50						
40						
30						
20						
15						

WASHINGTON, D. C. (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	88	15.3	70	178	2.3
1,000	31	164	15.3	68	184	3.5
950	31	605	15.0	64	244	8.0
900	31	1,056	12.9	63	272	14.0
850	31	1,535	10.7	61	278	17.7
800	31	2,037	7.6	60	282	20.8
750	31	2,573	4.9	55	286	22.9
700	31	3,128	2.4	46	283	24.9
650	31	3,729	- .9	44	285	28.2
600	31	4,358	- 4.6	43	285	29.3
550	31	5,042	- 8.7	40	286	30.9
500	31	5,769	-13.3	41	287	34.8
450	31	6,572	-18.9	46	286	38.7
400	31	7,429	-24.9	47	287	43.9
350	31	8,385	-32.2	46	289	46.0
300	31	9,455	-40.3		286	49.5
250	31	10,671	-49.9		292	54.0
200	31	12,097	-59.3		297	60.6
175	31	12,926	-62.5		296	58.9
150	30	13,878	-62.9		298	51.5
125	30	15,000	-62.8		299	41.8
100	29	16,371	-62.7		302	28.4
80	28	17,744	-61.6		303	16.9
60	28	19,541	-58.2		297	7.8
50	27	20,691	-55.9		326	3.9
40	27	22,117	-53.5		24	2.5
30	23	23,981	-51.9		81	7.4
20	9	26,631	-49.4			
15	5	28,543	-44.8			

WINNEMUCCA, NEV. (86[illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,310	[illegible]	48	309	2.7
1,000	31	65				
950	31	512				
900	31	976				
850	31	1,466	15.9	44	290	3.5
800	31	1,977	11.6	45	293	5.1
750	31	2,515	[illegible]	51	288	5.8
700	31	3,075	2.2	58	276	5.6
650	31	3,667	- 2.9	63	256	5.8
600	31	4,298	- 7.4	60	234	8.2
550	31	4,968	-11.8	50	227	9.9
500	31	5,692	-16.9	47	223	11.7
450	31	6,479	-22.4	41	225	13.8
400	31	7,328	-28.8	42	239	14.2
350	31	8,270	-36.0		249	13.8
300	31	9,323	-43.9		248	21.4
250	30	10,535	-51.4		247	28.0
200	30	11,966	-55.8		254	26.8
175	30	12,814	-56.7		255	24.9
150	28	13,782	-57.2		249	26.4
125	24	14,947	-58.2		252	19.8
100	22	16,334	-60.7		249	18.3
80	21	17,713	-60.9		257	9.9
60	20	19,511	-58.6		244	1.9
50	20	20,663	-56.8		73	3.5
40	18	22,084	-54.7		82	4.7
30	17	23,930	-53.0		82	5.2
20	10	26,562	-49.3		68	4.1

YAKUTAT, ALASKA (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	12	7.3	74	128	4.5
1,000	31	133	6.5	75	127	5.6
950	31	555	3.8	76	139	11.1
900	31	989	1.0	77	145	11.8
850	31	1,447	[illegible]	78	155	13.8
800	31	1,927	- 4.3	73	163	13.2
750	31	2,441	- 7.1	67	176	13.8
700	31	2,968	- 9.9	63	196	14.2
650	31	3,545	-12.8	58	208	14.8
600	31	4,143	-16.0	54	220	16.9
550	31	4,800	-19.7	48	225	18.5
500	31	5,496	-24.0	47	231	17.7
450	31	6,265	-28.7	44	234	19.6
400	31	7,091	-34.2	43	228	21.8
350	31	8,012	-40.9		247	27.4
300	31	9,044	-47.4		249	29.9
250	31	10,237	-50.9		256	26.0
200	31	[illegible]	-50.0		268	15.9
175	31	12,563	-49.0		245	[illegible]
150	31	13,573	-49.4		258	16.1
125	31	14,765	-50.2		159	10.5
100	31	16,218	-51.3		260	6.8
80	31	17,667	-51.4		221	2.1
60	30	19,531	-51.0		87	[illegible]
50	30	20,718	-50.5			
40	28	22,176	-49.9			
30	22	24,046	-49.5			

YUMA, ARIZ. (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	105	29.5	[illegible]	256	5.1
1,000	26	69				
950	26	525	26.7	19	245	7.4
900	26	996	22.8	21	243	7.0
850	26	1,489	18.8	24	235	6.2
800	26	2,005	14.7	25	[illegible]	6.2
750	26	2,550	11.0		229	7.0
700	26	3,118	7.6		238	11.1
650	26	3,728	4.1		237	15.2
600	26	4,371	- .2		243	17.5
550	[illegible]	5,056	- 5.1		[illegible]	16.5
500	24	5,802	-10.5		248	23.1
450	23	6,613	-16.6		240	27.6
400	[illegible]	7,478	-23.3		250	31.1
350	[illegible]	8,440	-30.5		247	33.0
300	[illegible]	9,516	-38.8		255	37.9
250	21	10,742	-47.7		252	[illegible]
200	18	12,192	-56.1		251	47.0
175	15	[illegible]	-58.7		249	45.8
150	13	13,985	-60.7		259	38.3
125	9	15,106	-63.7			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

RAWINSONDE DATA

Average monthly values

Table 20 *Air Force Data for January 1956

Standard pressure surface (mb)	DENVER, COLO. (831 MB.)						OGDEN, UTAH (853 MB.)						RANTOUL, ILL. (993 MB.)					
					Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	1,661	- 0.9	54	161	2.3	31	1,450	2.1	57	111	1.7	31	227	- 2.5	69	347	2.9
1,000	31	143					31	145					31	169				
950	31	569					31	573					31	579	- 2.5	69	350	4.5
900	31	1,011					31	1,018					31	1,005	- 2.6	61	342	5.8
850	31	1,475					31	1,475			102	1.9	31	1,459	- 2.5	54	329	8.5
800	31	1,965	1.6	48	270	5.6	31	1,970	1.6	54	214	9.3	31	1,939	- 3.5	53	324	10.7
750	31	2,489	- .1	45	285	7.8	31	2,492	1.0	56	239	11.3	31	2,455	- 5.3	53	314	12.4
700	31	3,033	- 3.3	46	289	10.7	31	3,031	- 5.8	58	250	17.1	31	2,986	- 7.6	51	309	14.2
650	31	3,617	- 7.5	49	292	16.7	31	3,607	- 9.9	57	263	20.8	31	3,566	-10.6	49	306	18.8
600	31	4,233	-12.0	50	293	22.9	31	4,220	-11.0	54	268	24.1	31	4,171	-14.0	48	302	23.7
550	31	4,893	-16.6	48	291	26.8	31	4,877	-18.4	55	273	29.3	31	4,828	-18.3	47	299	26.6
500	31	5,602	-21.2	46	289	30.5	31	5,578	-22.8	53	276	35.7	31	5,530	-23.1	46	295	28.2
450	31	6,376	-27.0	45	290	35.4	31	6,349	-27.6	47	280	42.0	31	6,297	-28.5	45	296	32.4
400	31	7,210	-32.7	45	292	41.2	31	7,180	-33.1	43	283	46.2	31	7,126	-34.5		290	38.5
350	31	8,137	-39.6		288	49.7	31	8,105	-40.0		284	54.0	31	8,045	-41.6		289	41.8
300	31	9,174	-47.4		289	54.4	31	9,140	-47.5		280	60.8	31	9,074	-48.4		291	44.7
250	31	10,358	-54.8		286	57.9	31	10,324	-54.3		282	63.5	31	10,256	-54.5		290	51.9
200	31	11,771	-58.2		286	46.8	31	11,739	-57.7		280	58.9	31	11,679	-55.4		293	48.4
175	31	12,609	-58.8		284	47.8	31	12,583	-56.8		278	49.3	31	12,531	-55.0		293	42.2
150	31	13,577	-58.9		278	47.6	31	13,561	-56.1		272	42.9	31	13,516	-55.2		291	38.5
125	31	14,720	-59.7		285	44.7	30	14,716	-57.1		268	37.3	31	14,675	-57.0		289	33.8
100	31	16,111	-61.0		282	31.5	29	16,109	-59.4		265	30.5	30	16,078	-59.6		292	26.2
80	31	17,493	-61.8		278	23.3	26	17,501	-59.2		264	23.1	27	17,471	-59.9		290	21.2
60	31	19,275	-61.9		289	14.4	15	19,308	-59.3		262	11.8	20	19,272	-60.5		294	15.5
50	29	20,406	-60.2		295	13.4	13	20,447	-59.3		280	13.2	14	20,403	-59.4		278	15.2
40	25	21,791	-59.4		301	9.9	10	21,833	-57.7				11	21,794	-58.0			
30	19	23,600	-58.3		303	13.4							5	23,608	-56.6			
20	11	26,137	-57.8		294	20.1												
15	8	27,980	-56.0															

* February data for the above Air Force stations will be included in the June issue of this publication

Note. All observations scheduled at 0300, G C T "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 10 actual observations

in these tables on the basis of vapor-pressure over water Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun MAY 1956

Date	Sun's zenith distance								
	A M				0 0°	P M			
	78 7°	75 7°	70 7°	60.0°		60 0°	70 7°	75 7°	78.7°
	TABLE MOUNTAIN, CALIF.								
	Air mass								
	5.0	4.0	3.0	2.0	*0.75	2.0	3.0	4.0	5.0
May									
5------	--	- -		1.41	-	--		----	----
11-----	--	-	- -	1.37	- -		-	- -	- -
12-----	0.79	0.90	1.06	1.27	--	-	---	---	--
13-----	.86	.98	1.13	1.30	----	--	----	---	---
14-----	----	--	--	1.41	--	--	--	---	--
15-----	1.02	1.11	1.24	1.37	----	----	---	--	---
16-----	1.06	1.15	1.27	1.43	-- -	----	- --	----	--
18-----	--	--	---	1.35	- --	--		-	----
20-----	.77	1.00	1.15	1.31	- -	- -	--	----	----
21-----	.87	.97	1.11	1.27	----	-	-	----	-
22-----	.90	1.01	1.13	1.30	----	-	--	----	-
23-----	1.01	1.11	1.22	(1.37)	--	--	--	---	----
25-----	.71	.85	1.00	1.21	---	--	----	--	----
26-----	---	---	-	1.29	-- -	-	----	- - -	
28-----	.88	.98	1.13	1.31		--	--	---	--
29-----	.97	1.07	1.18	1.31	---	-- -	---	----	---
30-----		- --	-	1.40	-- -	-	--	---	-
Averages	.89	1.01	1.15	1.33	-- -	----	---	- -	----
	WASHINGTON, D.C. (WBCO)								
	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
May									
9-----	----	----	---	1.17	1.36	SK0.74	-- -	----	---
18----	---	----	----	----	1.34	----	----	- --	- -
24----	--	----	----	----	1.40	--	----	--	----
25----	----	----	----	SK.92	----	---	----	---	----
31----	----	----	----	.85	----	---	----	--	----
Averages	- --	----	-	.98	1.37	.74	---	- --	----

Date	Sun's zenith distance								
	A M				0 0°	P M			
	78 7°	75 7°	70 7°	60.0°		60 0°	70 7°	75 7°	78 7°
	BLUE HILL, MASS								
	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
May									
1		-			1.28	1.06	0.82	0.70	0.58
4-----		H0.61	H0.81	H0.99	-	----	--	--	---
5-----	----	--	- -	1.20	1.37	-	--	----	--
8-----	-	.90	1.04	1.19	1.41	1.16	--	----	----
9-----	--		1.01	-	--	---	-	----	----
11----	--	- --	- -		1.37	- -	--	---	- --
15----	---	- -	-- -		1.37		--	--	
17----		1.06	1.06	1.22	1.40	----	----	- -	
21----		-- -	- -	1.09	1.27	.97	.75	.59	.46
24----	--	- -	1.02	1.18	1.33	--	-	----	.63
26----	0.60	.70	.84	-	----	----	----	----	----
29----	H.71	H.80	H.93	H1.09	---	---	----	----	----
Averages	(.66)	.75	.96	1.14	1.35	1.06	(.79)	(.65)	.56
	ALBUQUERQUE, N. MEX.								
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
	NO DATA DURING MAY 1956								

* Extrapolated
H Haze
SK Slight smoke

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

MAY 1956

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-------------	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys-- -----	71	149	133	137	74	137	127	118	139	78	137	75	151	26	147	116	161	140	153	101	185	170	170	154
Date--- -------	27	28	29	30	31	1	2																	
Langleys- -----	33	148	168	128	128	139	145	127																

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-----------	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys- ------	63	224	418	413	69	404	141	248	167	77	386	65	429	82	220	204	314	347	231	121	433	426	338	316
Date------------	27	28	29	30	31	1	2																	
Langleys--------	25	270	409	143	232	269	142	213																

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date------------	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys--------	56	149	309	302	59	305	218	200	209	73	273	71	281	74	252	176	262	266	244	118	253	234	193	224
Date------------	27	28	29	30	31	1	2																	
Langleys--------	19	149	260	106	205	256	143	163																

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date------------	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys--------	134	204	467	257	120	267	299	250	297	85	255	159	277	93	409	225	471	429	411	128	464	319	163	340
Date------------	27	28	29	30	31	1	2																	
Langleys--------	27	209	426	159	196	413	197	232'																

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date------------	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys--------	106	265	100	177	119	176	244	170	279	134	141	133	163	149	201	171	168	140	258	204	161	198	222	193
Date------------	27	28	29	30	31	1	2																	
Langleys--------	57	---	148	218	202	163	271	(185)																

Note: Langley is the unit used to denote one gram calorie per square centimeter.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

MAY 1956

1956	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island, Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.	Dodge City, Kans.
May 6------	363	806	666	317	424	192	640	261	343	135	394	134	716	613	526	155	254	521	396	176
May 7------	534	789	508	518	609	449	373	387	---	340	269	421	700	427	708	426	834	257	462	150
May 8------	544	744	380	583	646	488	393	467	672	762	551	754	741	---	490	545	811	337	684	539
May 9------	224	760	411	622	364	717	396	428	699	667	705	654	780	303	539	651	115	315	468	638
May 10------	626	808	658	749	528	710	601	284	78	132	315	225	583	---	395	575	98	477	270	464
May 11------	686	761	624	714	682	651	568	244	732	695	406	655	656	622	742	660	647	520	531	720
May 12------	664	747	435	730	581	682	740	307	448	425	557	463	593	526	381	666	659	676	706	678
Average-------	520	774	526	605	547	556	530	340	495	451	457	472	681	498	540	525	488	443	502	481
May 13------	609	818	108	738	712	660	581	(516)	321	418	741	433	691	580	375	661	527	503	725	736
May 14------	600	688	70	667	756	607	467	611	568	144	733	101	539	623	303	714	655	490	718	488
May 15------	557	809	63	754	759	645	477	429	593	673	717	665	553	610	721	720	237	463	704	724
May 16------	567	813	204	680	751	665	496	490	685	166	713	165	554	597	95	694	387	662	676	748
May 17------	501	808	476	783	714	727	539	629	741	704	650	678	707	539	598	733	141	709	602	754
May 18------	526	776	675	748	498	707	516	351	744	168	526	146	716	596	665	709	467	634	640	706
May 19------	429	650	696	726	260	692	565	758	767	587	608	609	733	---	379	653	833	667	662	727
Average-------	541	766	328	728	636	672	520	(540)	631	409	670	400	642	591	448	698	464	590	675	698
May 20------	413	722	479	708	528	631	464	702	750	653	690	663	563	513	405	517	791	476	696	744
May 21------	363	663	57	699	799	578	473	436	742	737	670	701	669	---	392	520	711	609	701	680
May 22------	262	783	213	701	860	667	690	716	698	572	723	607	610	608	507	609	657	628	705	696
May 23------	275	592	560	702	---	687	419	458	663	239	367	265	719	586	115	696	779	478	651	378
May 24------	257	614	203	700	505	558	764	529	294	761	403	746	615	(525)	683	468	901	716	717	167
May 25------	444	581	61	600	723	131	778	613	432	647	539	675	571	584	638	160	814	281	722	389
May 26------	719	628	416	667	387	257	441	362	686	460	436	418	520	---	656	745	624	256	698	549
Average-------	390	655	284	682	634	501	576	545	609	581	547	582	609	(563)	485	531	754	492	699	515
May 27------	491	832	136	584	680	582	538	494	562	58	231	71	623	579	367	559	417	578	745	494
May 28------	621	835	699	604	769	612	360	453	174	356	586	423	556	445	203	642	860	137	724	642
May 29------	513	842	736	711	771	563	553	309	334	737	624	714	579	598	761	536	673	601	634	680
May 30------	193	840	547	745	630	408	595	440	441	229	705	235	648	607	131	---	566	501	671	711
May 31------	237	828	435	611	241	545	559	422	808	489	708	475	648	566	199	598	314	670	570	509
June 1------	507	598	178	647	597	408	533	416	762	678	723	664	679	588	227	580	135	619	722	747
June 2------	692	498	530	763	366	750	523	576	615	291	748	386	726	596	316	621	365	720	718	655
Average-------	465	753	466	666	579	553	523	444	528	406	618	424	637	568	315	589	476	547	684	634

1956	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grandby, Colo.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.
May 6------	96	136	523	764	768	446	530	347	380	577	555	749	646	471	170	493	464	815	194	497
May 7------	743	402	709	708	695	327	700	506	353	450	504	759	386	337	523	235	544	780	665	575
May 8------	750	723	524	742	748	182	529	532	444	568	535	588	351	674	527	829	713	825	787	658
May 9------	95	679	710	698	504	262	687	399	604	568	278	52	295	732	703	742	352	759	461	645
May 10------	155	218	609	(805)	362	467	647	613	707	174	340	---	392	618	779	755	537	801	141	559
May 11------	334	704	(339)	808	232	496	627	339	730	696	755	---	421	610	752	664	528	829	231	651
May 12------	414	364	641	788	531	423	(632)	667	751	677	616	344	448	681	726	803	617	854	599	646
Average-------	370	461	(579)	(759)	548	372	(622)	486	567	530	512	498	420	589	597	646	536	809	440	604
May 13------	401	350	---	803	696	---	675	718	757	352	472	---	709	676	700	623	663	839	302	658
May 14------	471	168	571	803	820	490	453	743	804	487	544	---	360	623	688	790	373	875	496	723
May 15------	135	640	685	787	790	563	(603)	728	746	535	634	---	697	464	735	774	65	862	553	354
May 16------	584	174	787	795	798	502	738	569	598	724	782	---	736	629	730	733	680	809	202	741
May 17------	191	697	753	770	728	579	727	299	758	701	737	---	763	642	802	819	---	343	384	717
May 18------	576	169	743	786	342	563	722	665	803	710	658	---	720	743	777	808	731	843	346	703
May 19------	774	477	746	772	731	494	721	676	717	723	438	---	697	665	793	810	723	871	461	---
Average-------	447	382	712	788	701	532	(663)	628	740	605	610	---	669	635	747	765	539	778	392	649
May 20------	368	604	648	645	619	476	720	704	729	(600)	571	---	638	691	697	347	741	846	698	690
May 21------	592	714	801	667	704	274	691	702	579	704	546	---	704	560	709	821	322	819	635	703
May 22------	689	640	799	694	535	---	685	(664)	720	662	382	---	714	524	693	715	557	825	533	706
May 23------	539	146	766	776	511	476	614	673	719	651	506	---	---	516	751	766	628	838	207	---
May 24------	743	727	266	729	674	---	222	704	521	464	494	---	267	605	493	(576)	780	739	778	580
May 25------	462	754	801	767	585	699	702	691	470	509	588	---	555	654	173	864	719	848	794	638
May 26------	327	646	576	756	683	616	637	709	441	666	464	---	475	538	325	801	-	832	573	650
Average-------	531	604	665	719	616	508	610	(692)	597	(608)	507	---	559	584	549	(699)	624	821	603	661
May 27------	331	58	824	823	223	409	(369)	747	814	377	264	---	329	416	733	702	179	881	172	532
May 28------	738	348	791	806	553	565	504	733	634	110	619	---	586	442	679	576	361	865	220	264
May 29------	513	749	541	801	---	577	477	662	796	426	793	---	736	341	674	766	573	841	741	383
May 30------	615	226	843	750	822	109	653	733	734	448	716	---	669	440	606	792	258	866	326	561
May 31------	647	644	846	671	840	433	339	743	728	797	734	---	750	619	701	780	332	888	283	527
June 1------	265	370	651	---	807	433	752	742	---	709	545	321	489	301	512	778	392	879	135	662
June 2------	451	---	641	785	794	551	711	597	---	619	586	---	560	301	830	657	651	566	239	767
Average-------	509	399	734	773	673	440	(543)	708	---	498	608	---	588	409	676	721	392	826	302	517

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

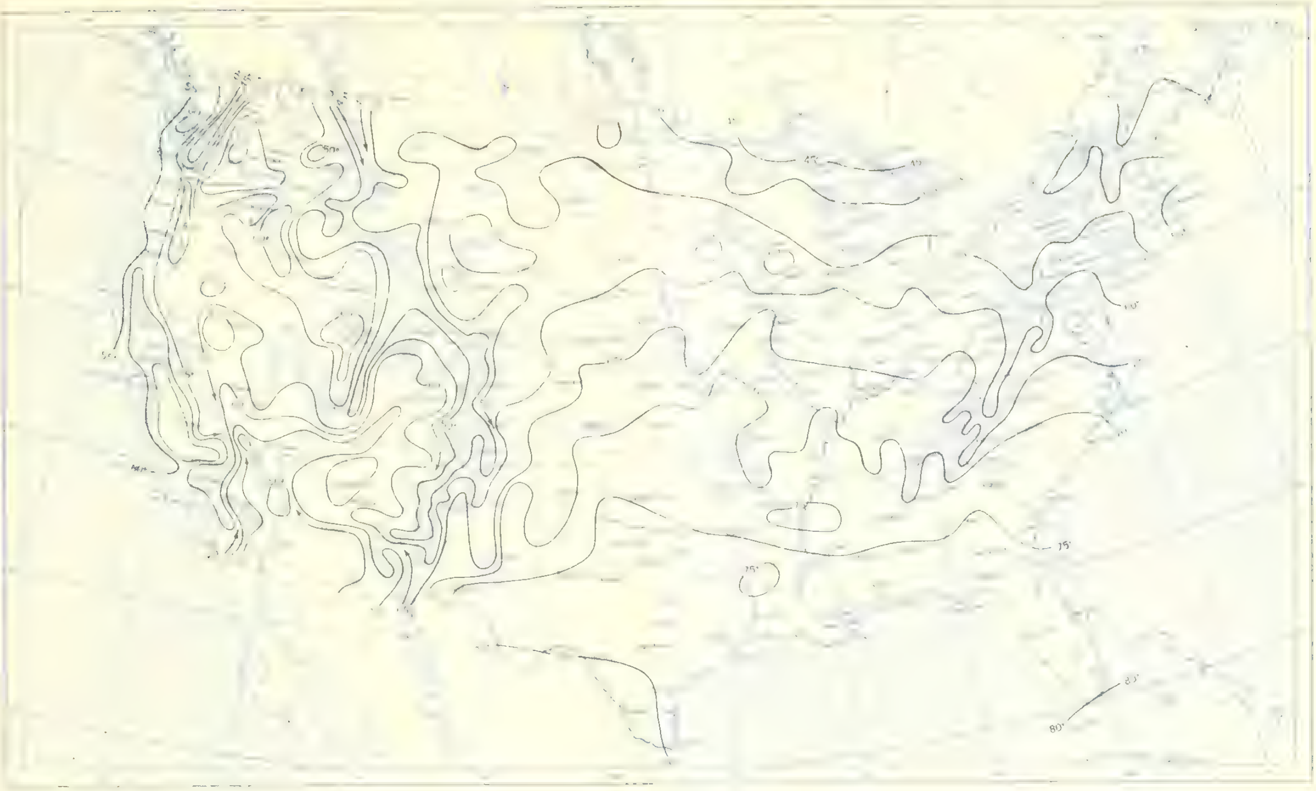
SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.- Continued

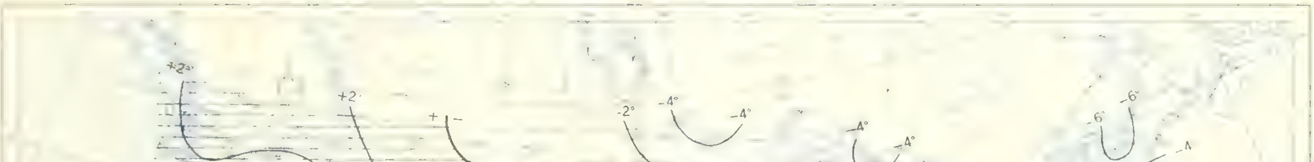
1956	Lander, Wyo.	Las Vegas, Nev.	Lemont, Ill.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash.	Seattle, Wash. (U. of W.)	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
May 6------	668	767	374	567	591	425	129	254	313	603	---	380	188	450	250	688	678	757	246	252	684	552	520	649	551	503	189	509	570	616	415	390	632	493	211	750	478	577	681
May 7------	561	795	776	515	714	645	739	---	293	455	---	336	328	135	321	582	(757)	759	700	300	702	704	676	722	785	149	440	84	627	652	533	274	488	617	731	773	161	111	702
May 8------	710	578	775	573	560	524	715	---	280	422	---	735	790	761	751	647	771	720	762	649	581	573	725	327	735	796	635	732	593	563	404	793	523	340	701	673	801	757	119
May 9------	454	685	193	508	102	---	128	437	537	430	---	682	---	612	721	647	393	515	677	614	439	467	685	420	151	683	468	645	434	444	500	477	590	511	188	617	701	738	347
May 10------	543	759	137	448	673	423	53	338	170	543	---	579	269	300	649	652	531	758	237	(369)	566	163	685	---	695	353	102	319	569	290	270	116	614	612	310	784	---	327	427
May 11------	615	783	360	513	498	---	621	507	513	551	---	677	747	626	758	617	431	748	728	(576)	618	651	529	657	158	687	452	316	425	353	612	105	571	556	246	757	---	346	240
May 12------	236	619	586	589	725	673	266	286	594	650	---	710	427	453	660	709	509	770	466	460	698	632	---	791	294	479	441	515	477	610	555	579	667	727	556	775	(525)	410	655
Average-------	541	712	457	530	552	538	379	364	386	522	---	585	458	477	587	649	(581)	718	545	(460)	613	534	637	594	481	521	389	446	542	504	470	391	584	551	420	733	(533)	467	[illegible]
May 13------	683	672	375	455	728	748	223	322	734	676	---	649	461	607	689	639	705	778	541	(226)	802	100	---	787	470	596	407	470	672	629	723	428	500	627	281	773	---	564	(399)
May 14------	828	810	725	197	764	712	666	426	699	676	726	467	202	606	536	---	331	788	78	598	817	682	---	784	630	494	370	639	683	687	685	456	209	614	437	805	---	577	(427)
May 15------	790	821	170	270	742	748	389	333	690	722	726	207	687	572	368	747	620	788	709	532	802	764	---	773	532	622	492	419	692	694	734	327	699	670	311	789	645	284	792
May 16------	796	801	725	683	673	696	445	413	696	634	750	770	212	354	790	750	181	761	56	734	782	333	---	671	741	314	234	---	710	699	733	528	708	736	205	767	326	579	586
May 17------	792	635	629	652	157	210	638	469	686	705	759	722	731	514	759	743	754	723	668	739	333	750	---	393	352	645	452	---	684	665	728	276	701	704	321	755	---	396	719
May 18------	719	741	753	638	724	660	611	572	661	256	765	731	195	84	789	746	733	(608)	338	750	763	685	---	541	148	289	277	---	660	675	669	322	679	741	576	722	223	---	777
May 19------	655	786	771	600	750	737	752	315	614	440	732	457	474	649	663	651	373	680	520	(479)	785	707	---	730	784	653	201	661	538	599	516	560	551	709	610	460	648	707	---
Average-------	752	752	593	499	648	645	532	407	683	587	743	572	423	484	656	713	528	(732)	416	(580)	726	574	---	668	522	516	347	547	663	664	684	414	578	686	392	724	461	518	(617)
May 20------	672	670	456	601	691	715	428	399	712	467	618	670	634	729	707	747	662	743	786	(612)	751	694	---	755	96	698	588	727	522	425	158	755	680	529	456	471	688	760	574
May 21------	527	760	445	592	662	661	585	579	716	628	668	504	767	669	665	566	576	758	690	521	727	721	---	707	755	793	551	622	729	727	773	658	522	551	379	775	---	---	(617)
May 22------	598	712	649	627	367	559	598	398	688	659	514	701	674	639	---	676	612	746	490	(485)	636	683	---	548	657	(691)	403	576	669	671	710	424	629	647	550	773	---	472	526
May 23------	678	731	802	621	341	326	751	468	458	687	466	563	216	175	557	512	799	754	289	(760)	497	715	---	339	804	253	158	285	424	434	531	497	470	547	720	761	---	274	804
May 24------	584	593	754	365	200	180	366	400	---	724	662	227	807	784	239	115	696	722	786	735	428	122	---	562	836	844	575	252	565	432	302	820	66	706	745	745	826	780	774
May 25------	464	786	709	489	213	149	585	---	722	614	609	306	791	714	---	41	708	783	778	442	227	572	---	616	776	826	554	726	537	533	753	782	176	631	624	773	750	600	171
May 26------	438	789	82	495	329	140	238	---	313	501	394	303	553	552	261	270	326	797	739	623	---	423	---	362	89	673	466	574	125	208	472	641	299	565	393	801	646	609	660
Average-------	566	720	557	541	400	390	507	449	601	611	562	468	635	609	486	418	626	758	651	(597)	544	561	---	556	573	(683)	471	537	510	490	528	654	406	597	553	729	723	582	(590)
May 27------	417	799	299	607	342	209	587	424	---	667	756	481	63	50	257	380	(66)	786	46	178	---	481	---	648	657	33	98	43	508	552	559	273	---	704	404	793	60	113	670
May 28------	252	798	192	433	387	163	229	377	716	506	634	583	482	743	510	623	456	781	413	434	---	143	---	579	798	581	258	694	642	683	790	796	---	491	641	792	644	578	136
May 29------	569	787	557	575	289	215	392	441	602	707	680	695	768	683	644	684	640	769	764	821	454	491	---	123	134	782	562	739	707	635	751	735	635	517	547	797	---	768	(636)
May 30------	624	728	613	662	595	452	579	456	345	740	724	696	276	350	658	614	126	800	255	627	626	418	---	248	223	334	140	518	720	713	753	527	---	557	488	810	---	526	123
May 31------	773	771	617	282	737	759	361	---	422	711	---	538	669	607	696	326	424	656	346	749	721	256	---	665	288	710	283	636	235	359	657	578	---	---	480	604	---	694	618
June 1------	747	787	535	732	762	773	718	---	669	402	---	551	551	474	480	748	349	689	659	725	737	754	---	628	666	649	136	364	368	293	315	303	725	480	187	498	---	302	802
June 2------	797	660	795	717	297	482	746	495	682	596	701	747	340	70	506	620	474	(736)	243	638	514	744	---	(759)	780	277	165	69	470	456	699	149	571	693	155	735	338	109	665
Average-------	597	761	515	573	487	436	516	439	572	618	699	613	450	425	536	571	(362)	(745)	389	596	610	470	---	(521)	507	481	234	438	521	527	646	487	---	574	414	719	---	441	(530)

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Chart I. A. Average Temperature (°F.) at Surface, May 1956.

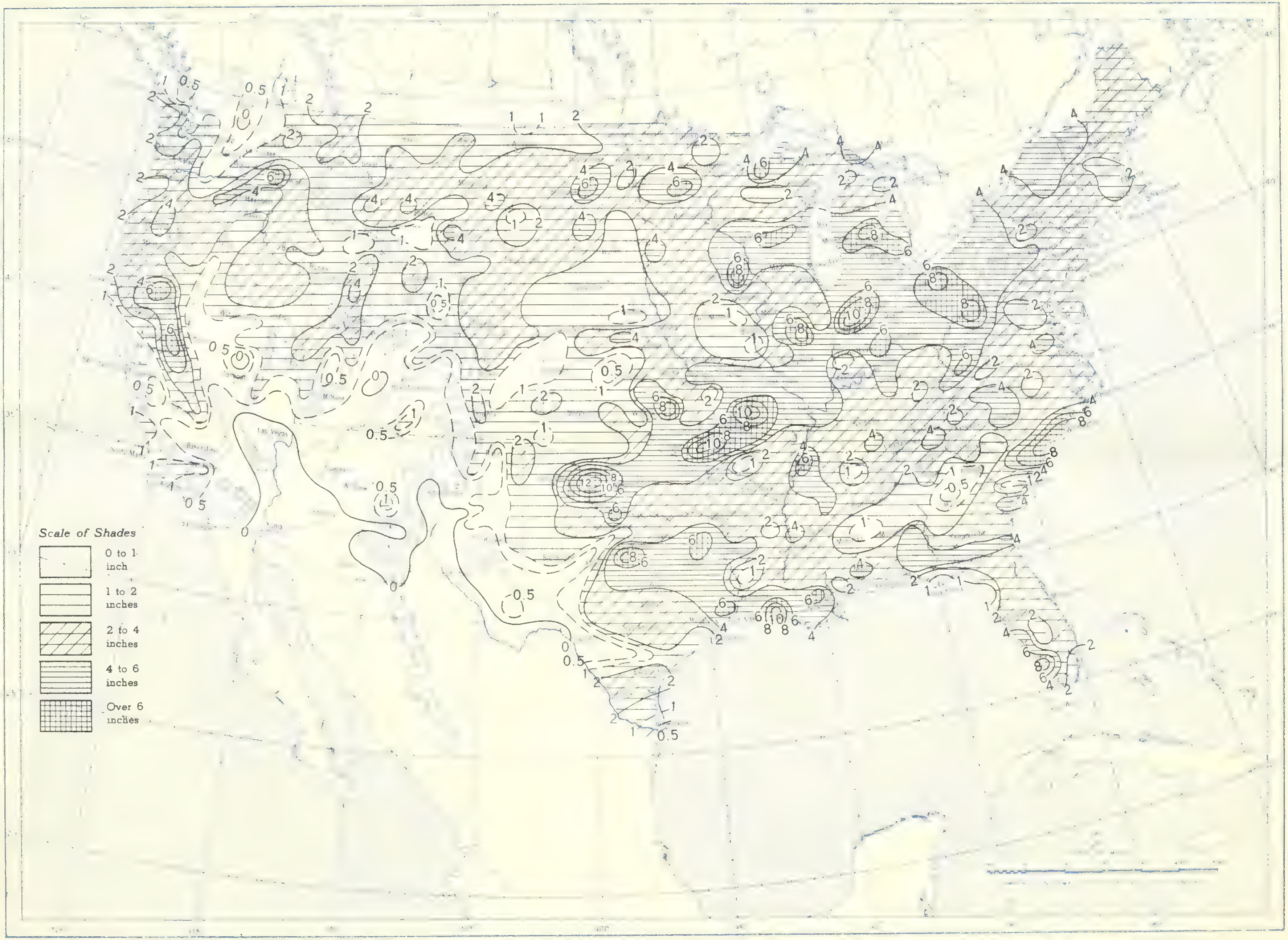


B. Departure of Average Temperature from Normal (°F.), May 1956.



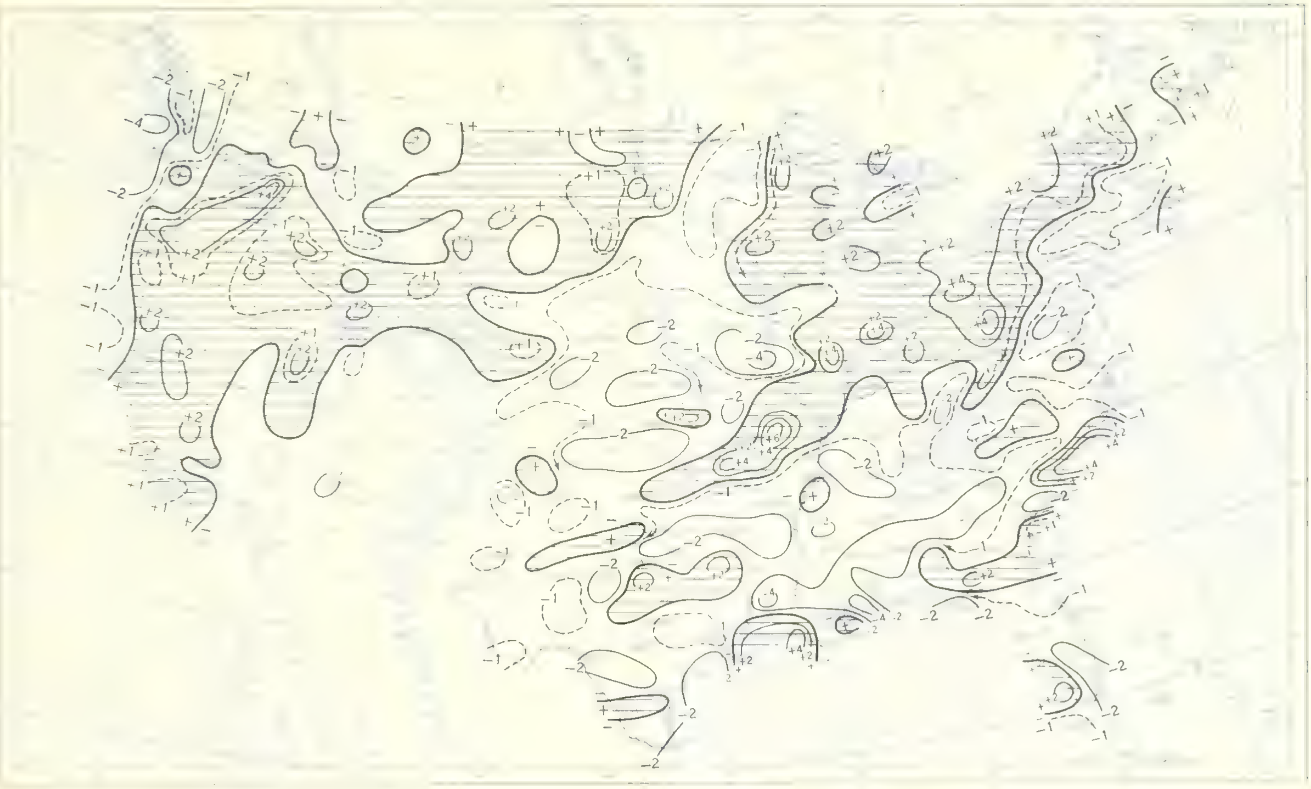
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), May 1956.

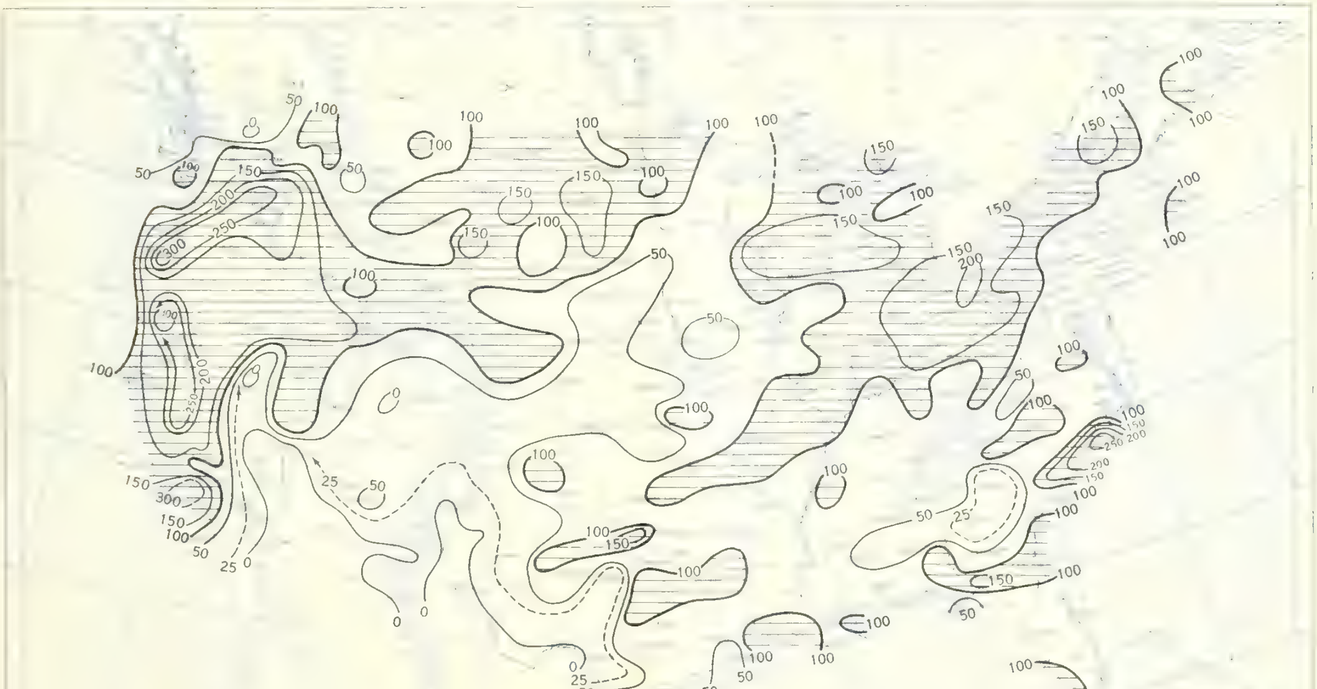


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), May 1956.

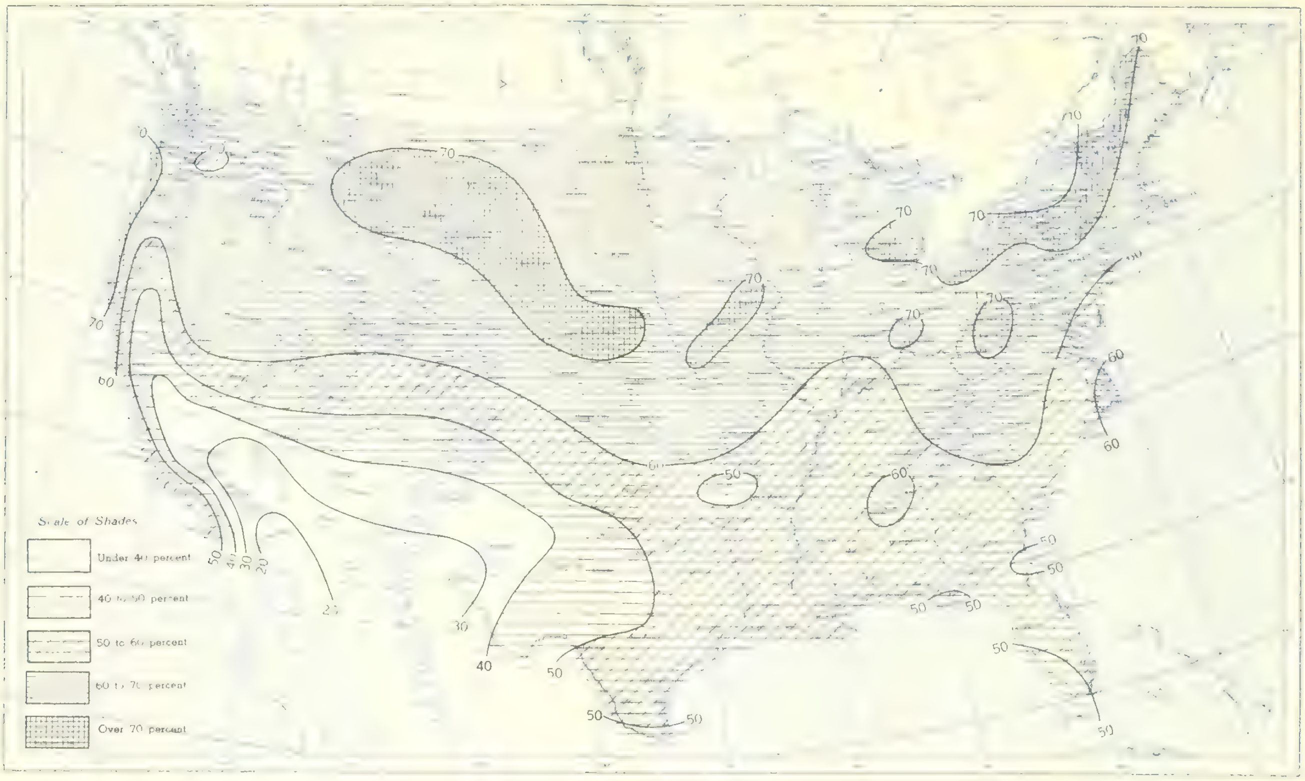


B. Percentage of Normal Precipitation, May 1956.

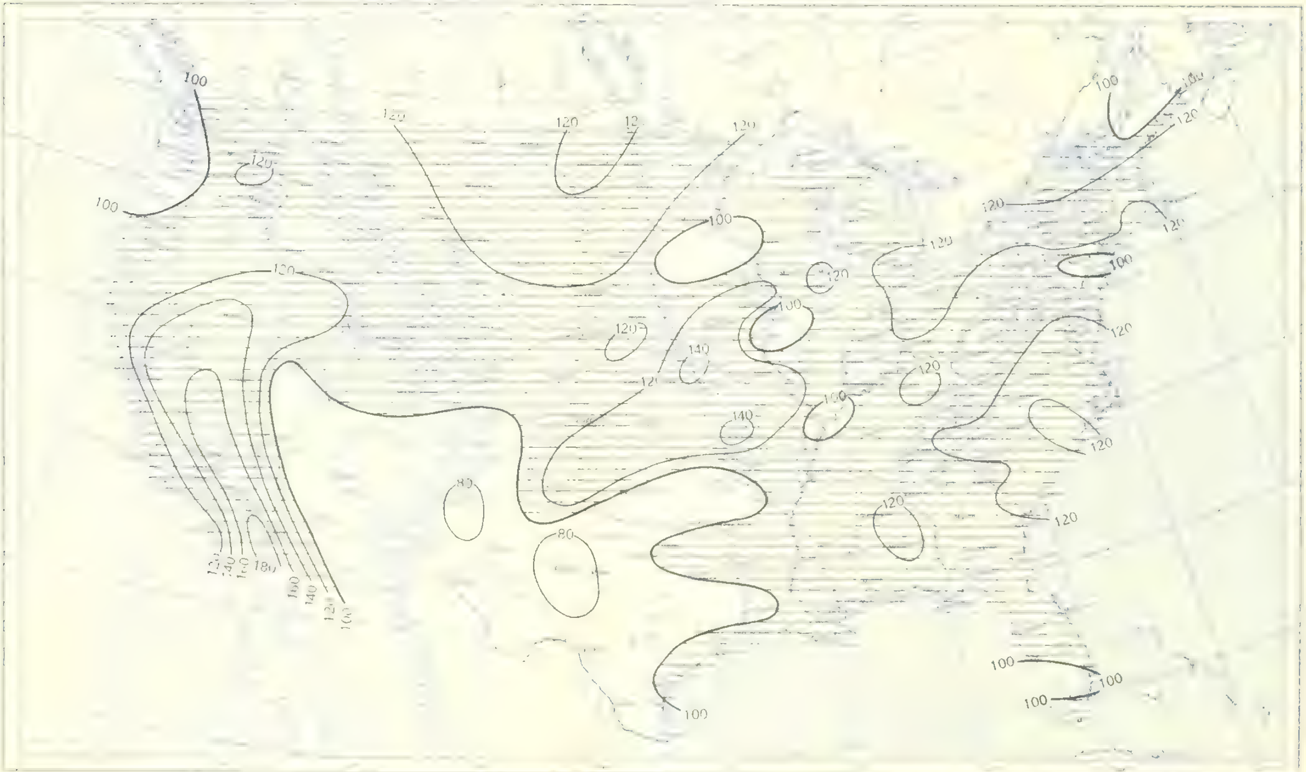


Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, May 1956.

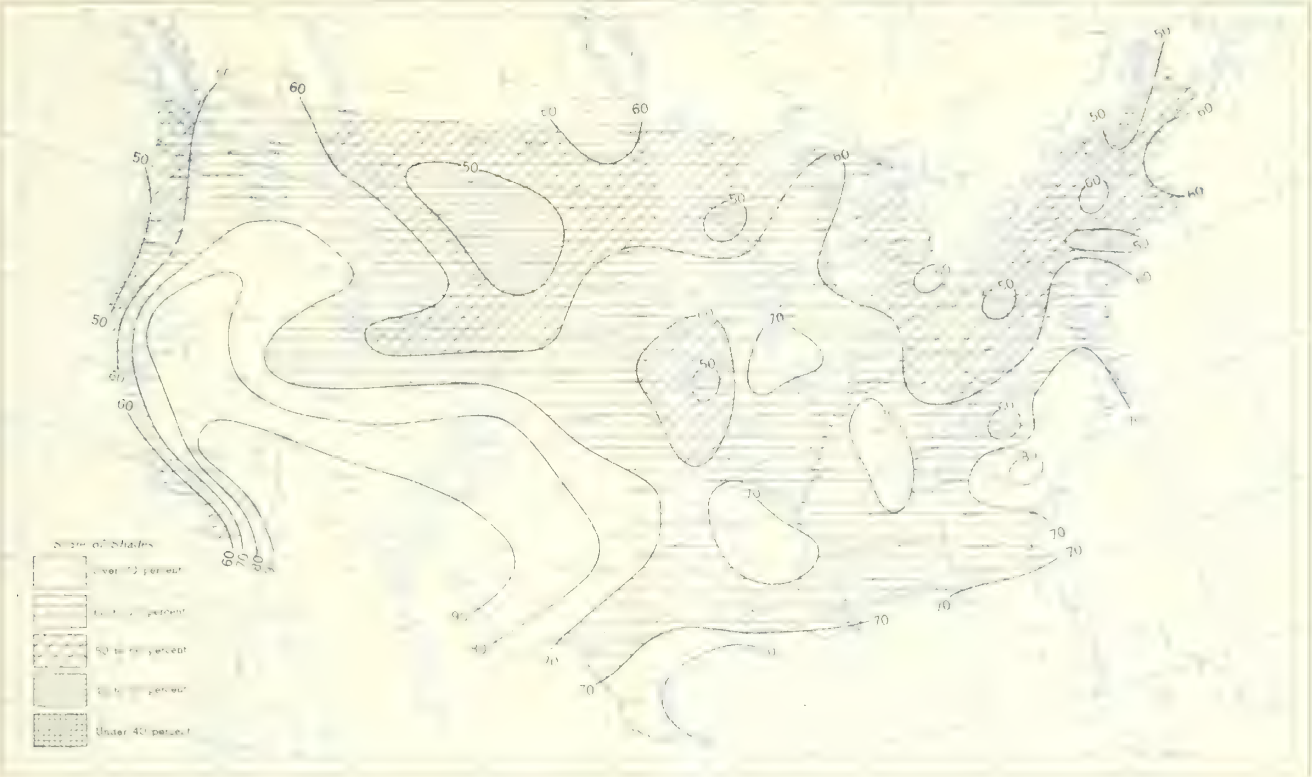


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, May 1956.

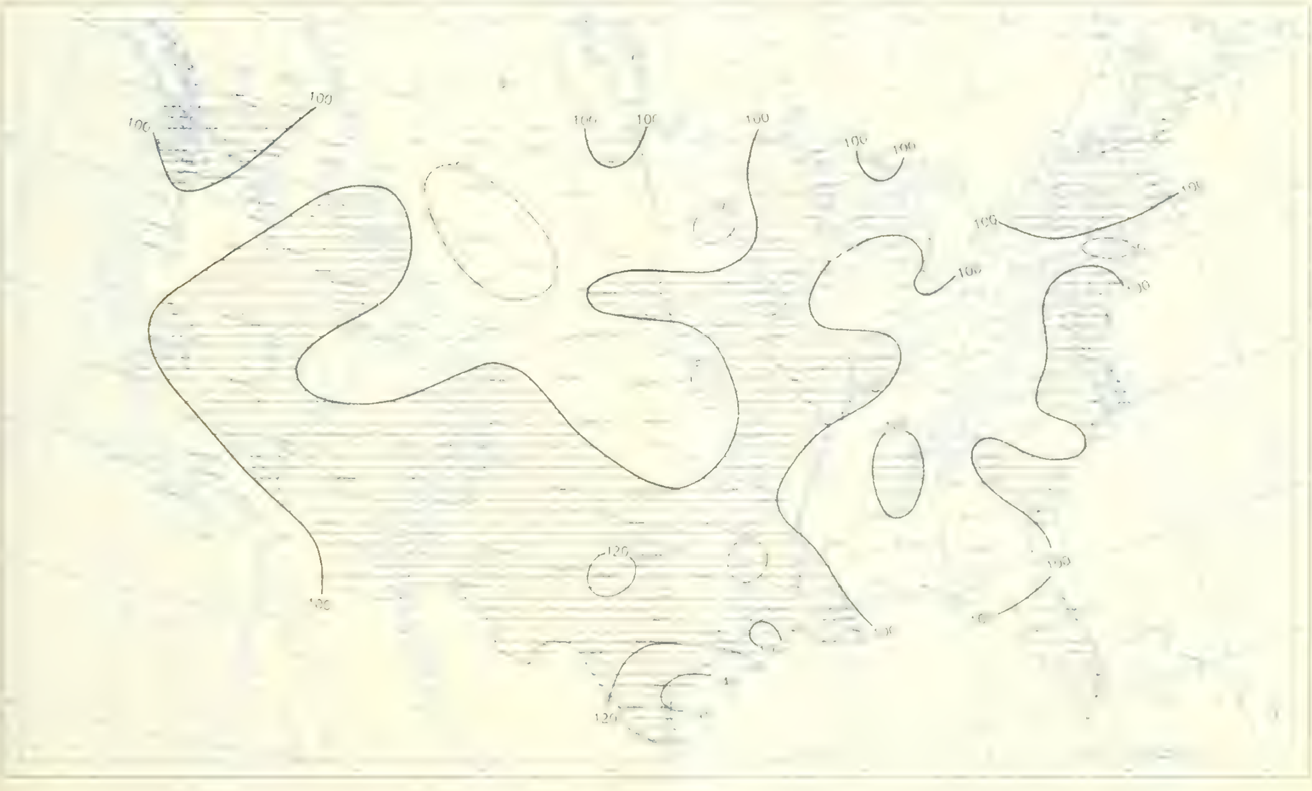


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, May 1956.



B. Percentage of Normal Sunshine, May 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, May 1956. Inset: Percentage of Mean Daily Solar Radiation, May 1956. (Mean based on period 1951-55.)

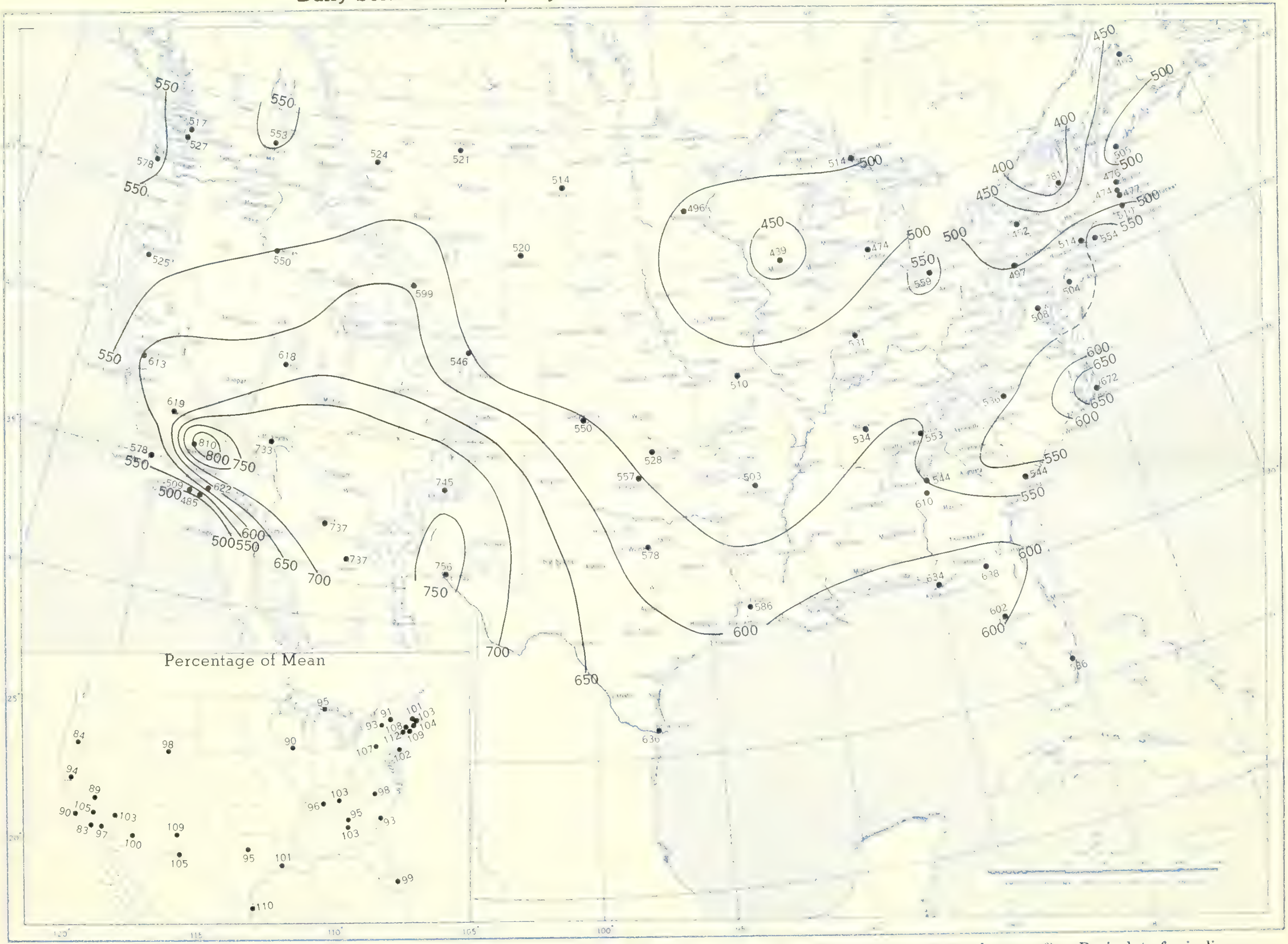
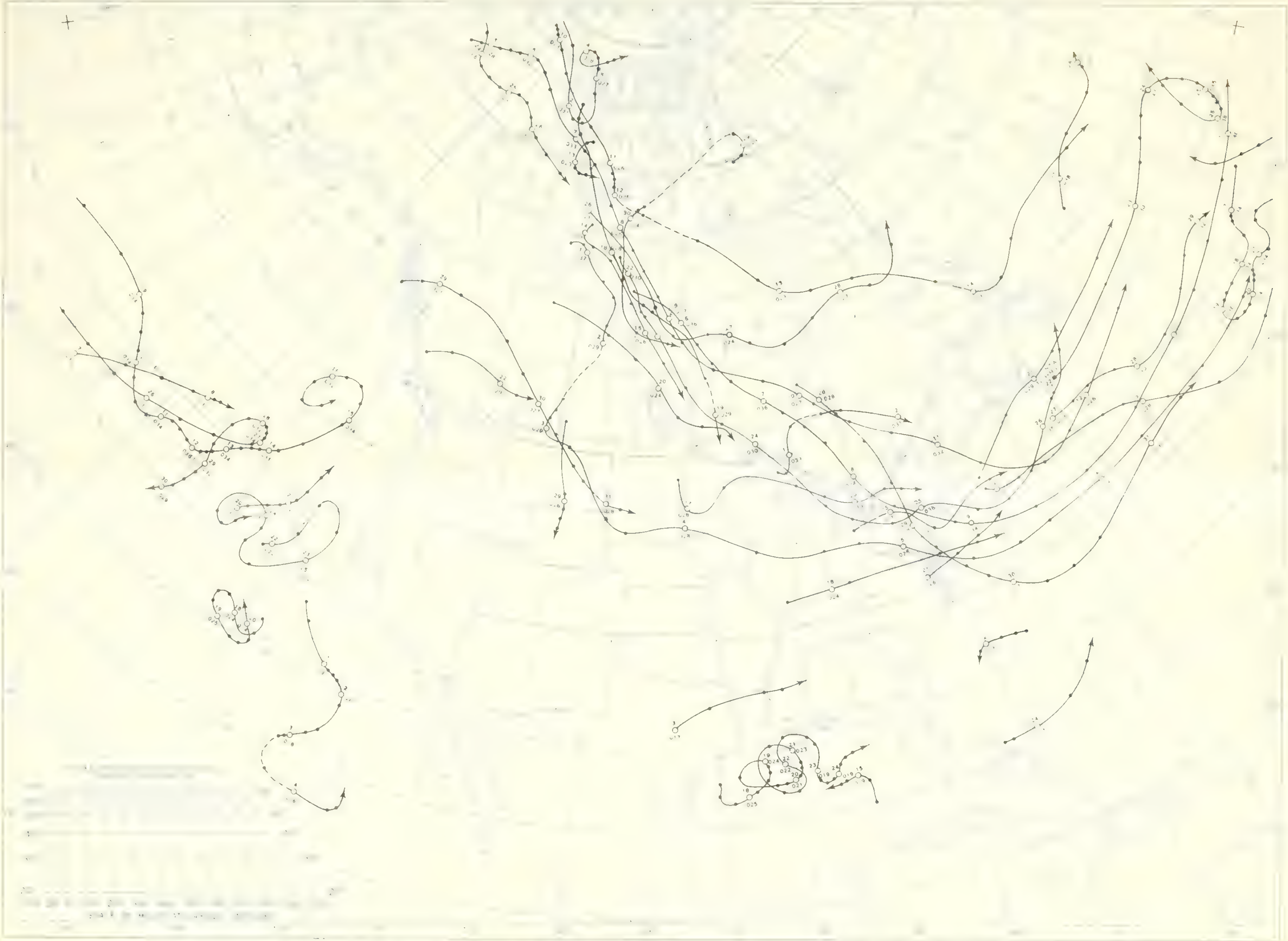


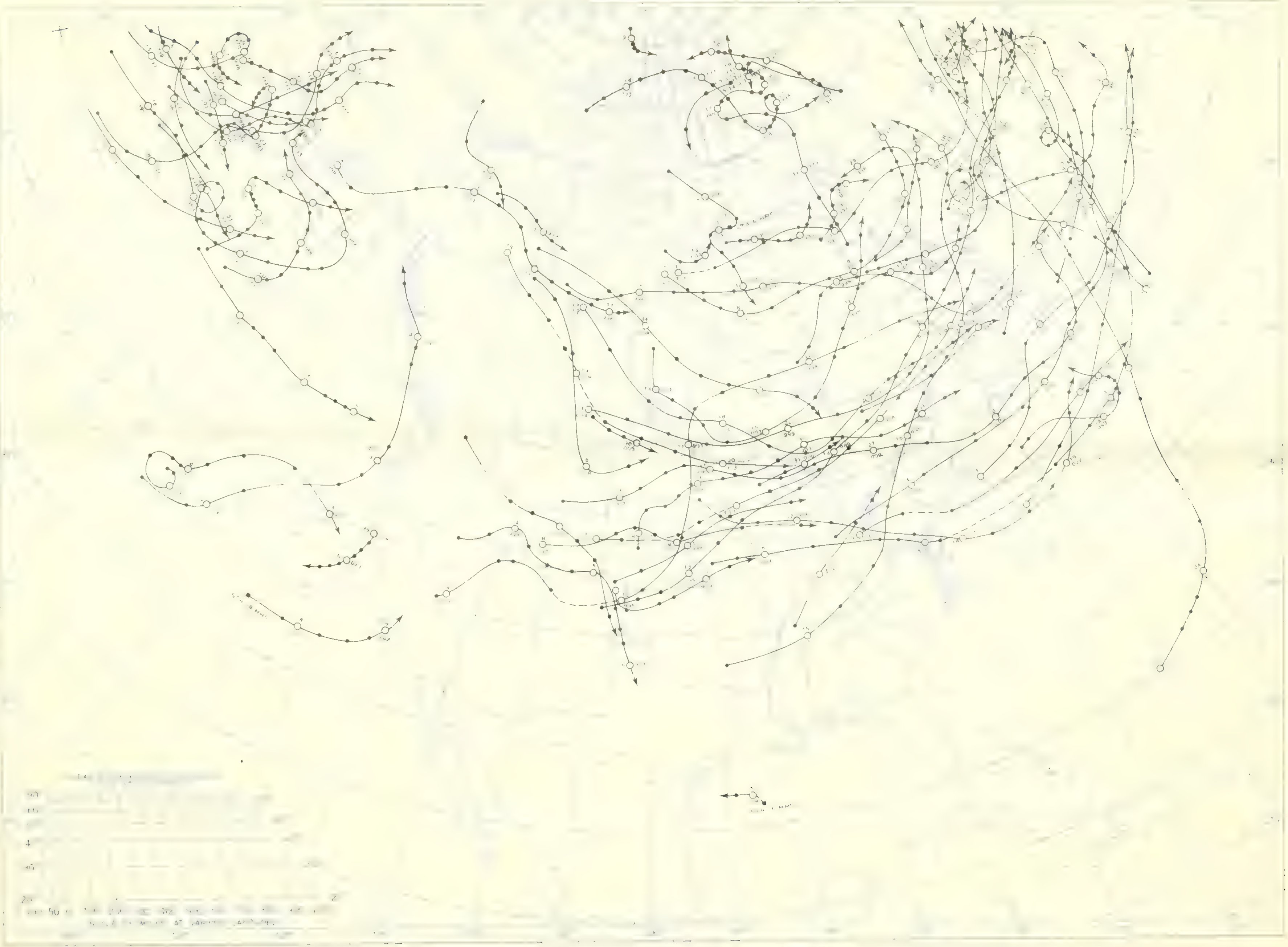
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$). Basic data for isolines are shown on chart. Further estimates are obtained from supplementary data for which limits of accuracy are wider than for those data shown.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, May 1956.



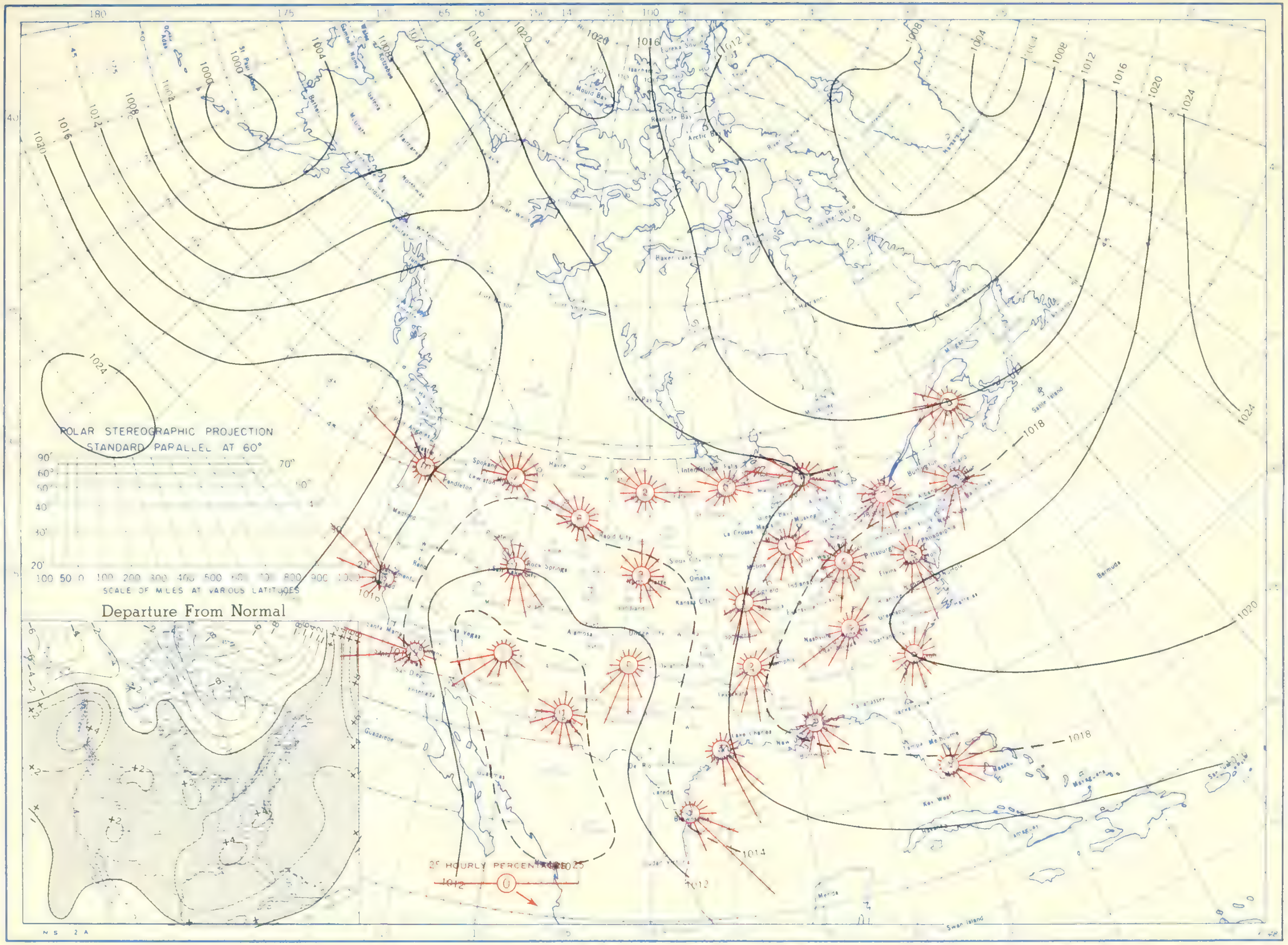
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, May 1956.



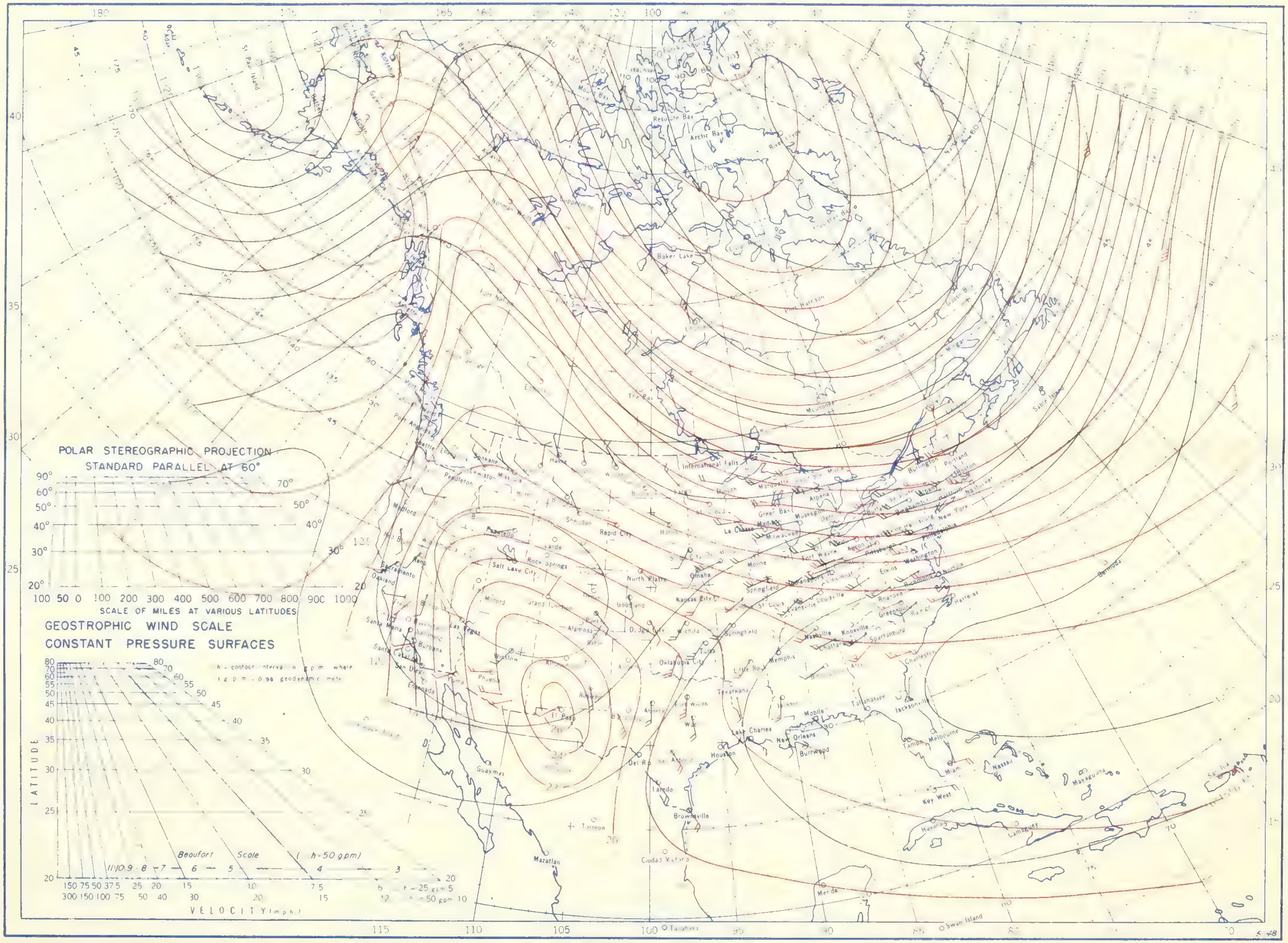
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Average Pressure (mb.) from Normal, May 1956.



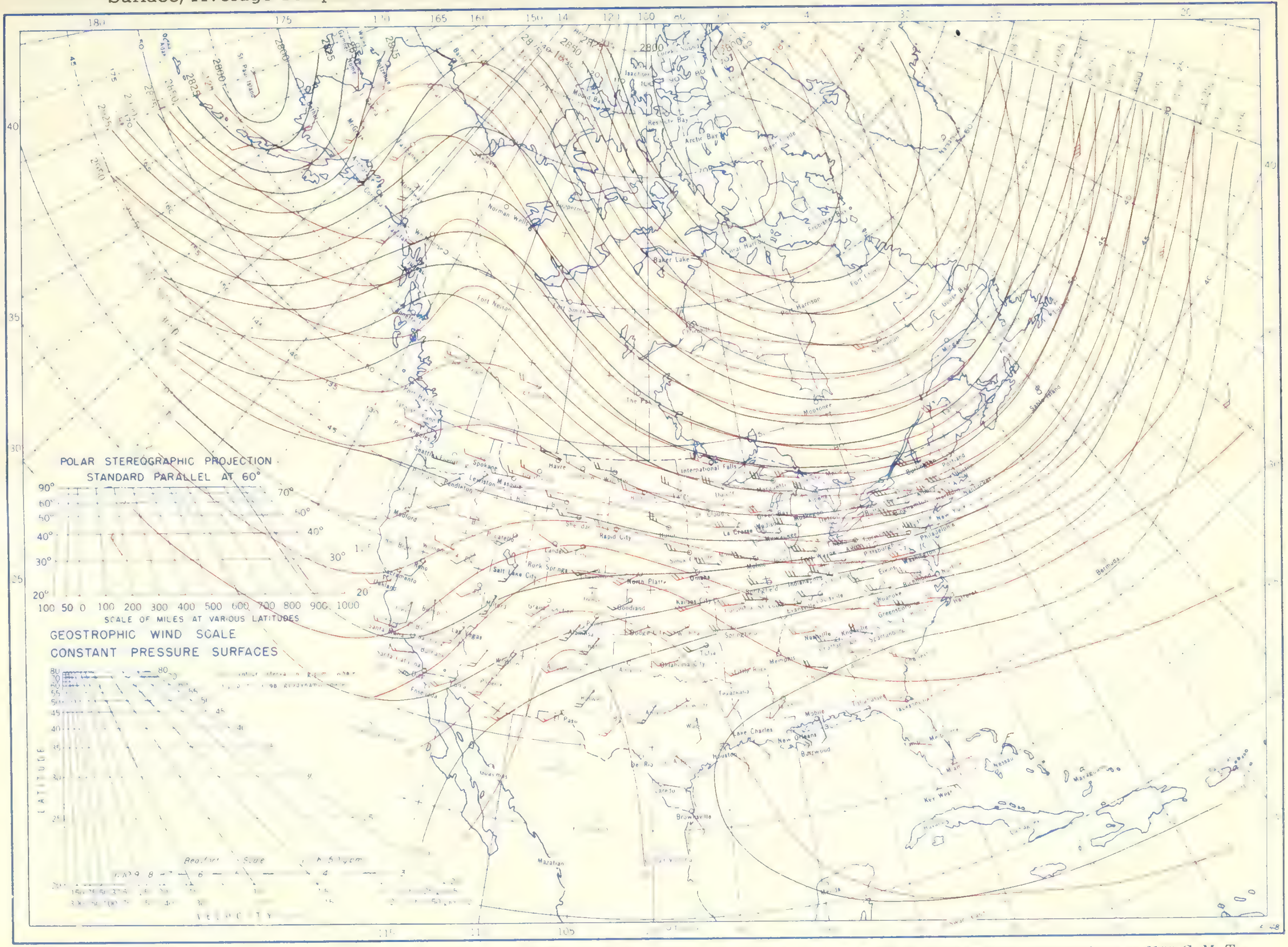
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 850-mb. Pressure Surface, Average Temperature in °C. at 850 mb., and Resultant Winds at 1500 Meters (m.s.l.), May 1956.



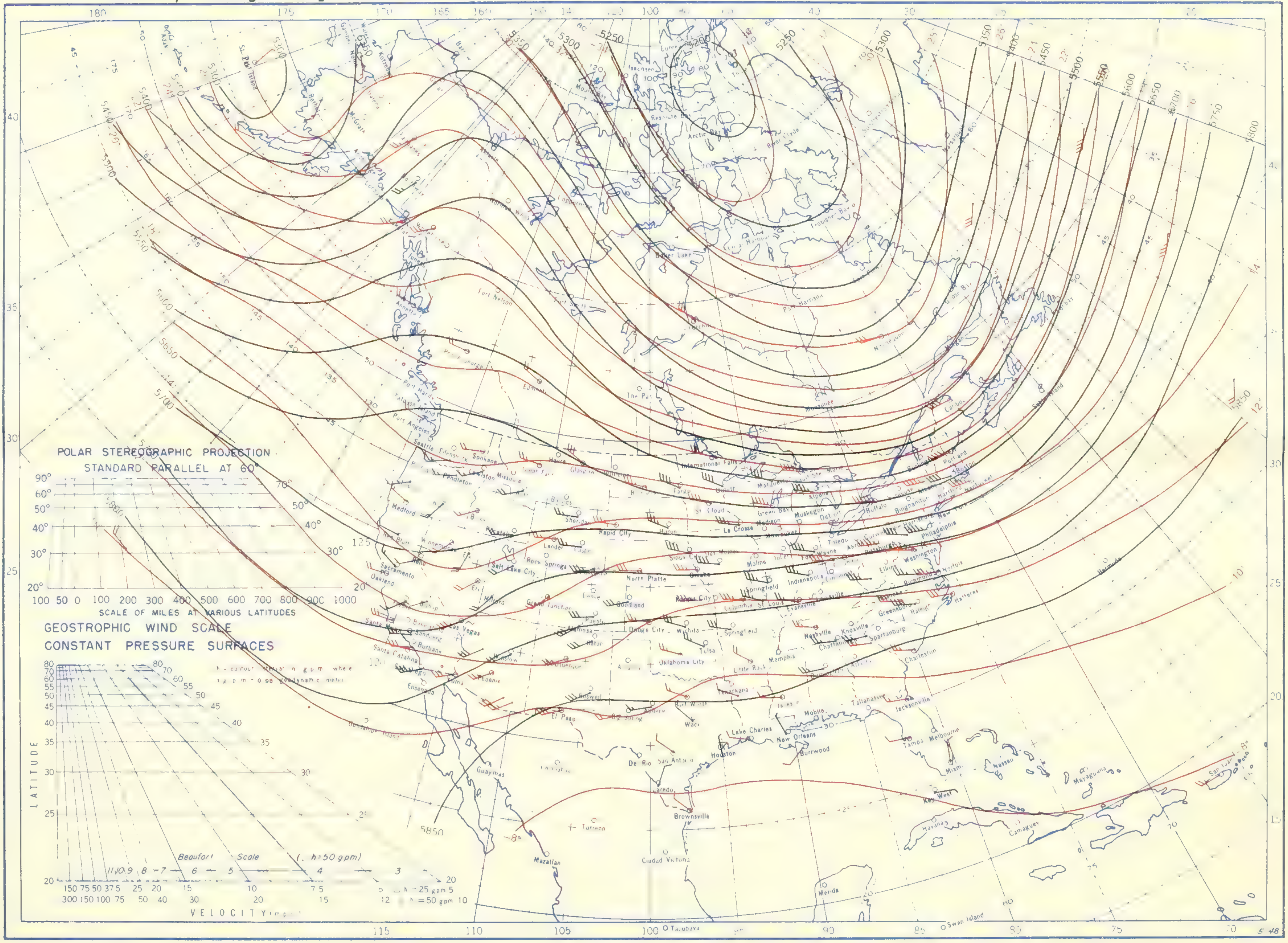
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.;

Surface, Average Temperature in °C. at 700 mb., and Resultant Winds at 3000 Meters (m.s.l.), May 1956.



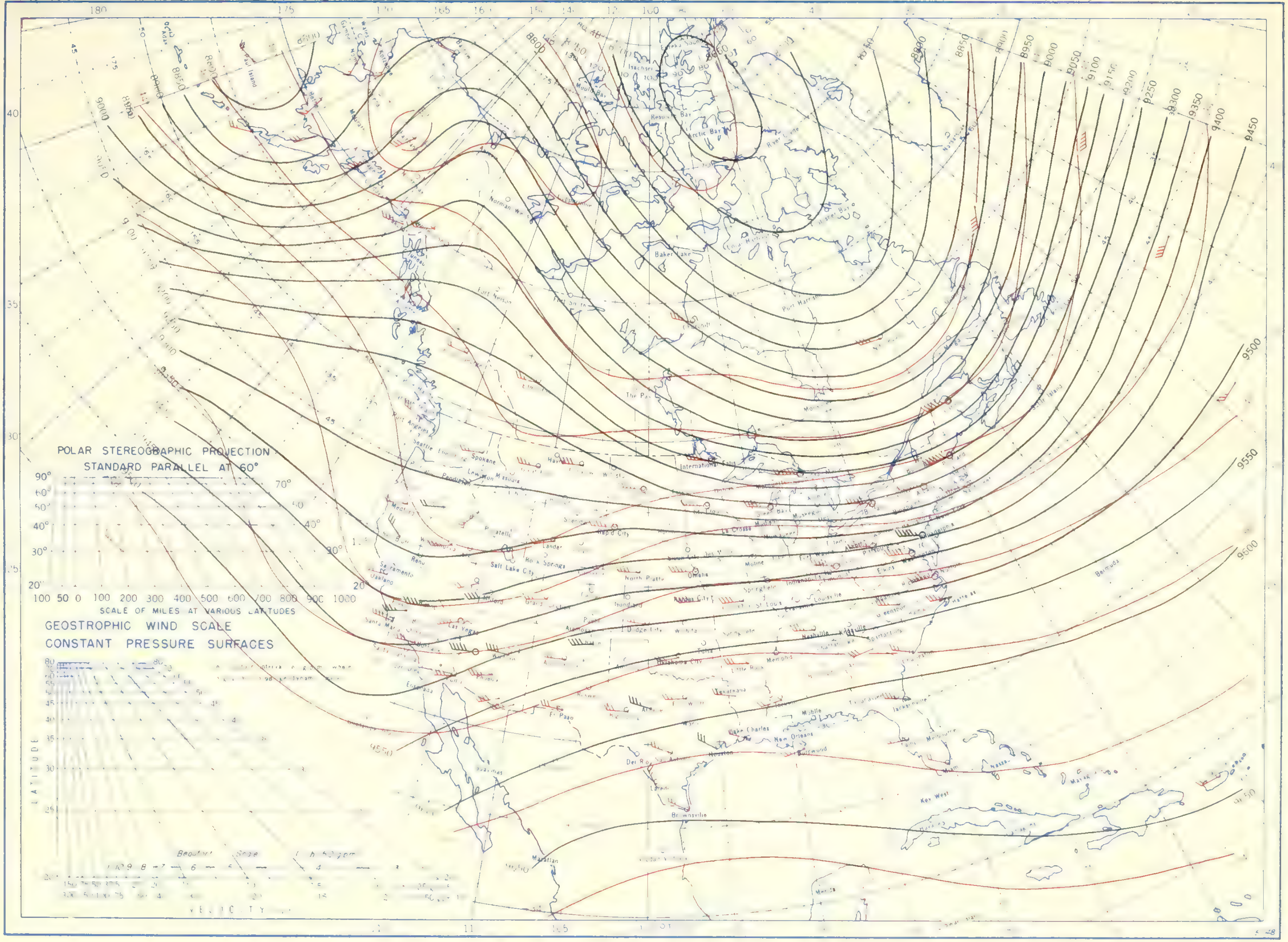
Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins taken at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

Chart XIV. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 500-mb. Pressure Surface, Average Temperature in °C. at 500 mb., and Resultant Winds at 5000 Meters (m.s.l.), May 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.;

Chart XV. Average Dynamic Height in Geopotential Meters (1 g.p.m. = 0.98 dynamic meters) of the 300-mb. Pressure Surface, Average Temperature in °C. at 300 mb., and Resultant Winds at 10,000 Meters (m.s.l.), May 1956.



Contour lines and isotherms based on radiosonde observations at 0300 G. M. T. Winds shown in black are based on pilot balloon observations at 2100 G. M. T.; those shown in red are based on rawins at 0300 G. M. T. Wind barbs indicate wind speed on the Beaufort scale.

U. S. DEPARTMENT OF COMMERCE
SINCLAIR WEEKS, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

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JUNE 1956
Volume 7 No. 6

ASHEVILLE: 1956

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CHARTS I-XV

NOTE.--Beginning with this issue, 200- and 100-mb. charts will be included with the upper air mean charts at the end of each issue. These charts, XVI and XVII, are similar in all respects to Charts XII-XV except that there are no pibal winds at 200 and 100 mb. These are being prepared in answer to the ever increasing interest for information regarding meteorological conditions at higher and higher levels of the atmosphere. Although this need has been apparent for quite some time, the preparation of charts for these surfaces has not heretofore been possible due to the lack of sufficient data on a regular basis. It is believed that data are now being regularly received in sufficient quantity to prepare realistic presentations of climatological conditions at these surfaces.

It should be noted that with this issue there is a change in the manner of plotting the resultant winds on Charts XII-XVII. The winds shown in red are from rawin reports and are for the same level as the contours and isotherms. The winds in black are from pibal reports at 2100 GMT and are for the nearest height level. In addition, wind speeds are indicated in knots: a flag equals 50 knots, a full barb 10 knots, and a half barb 5 knots.

NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 6 JUNE 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

Abnormally hot, dry weather in the Great Plains with intensifying drought which had become quite severe in Texas at the end of the month, sufficient rainfall to maintain good soil moisture east of the Mississippi, and rather persistent abnormally cool weather in the Pacific Northwest which retarded the rate of melting of a record snowpack, thereby preventing disastrous floods, were the most important characteristics of the weather of June. The month was also hot and dry in the Far Southwest where drought persisted in many sections. Many forest fires occurred in Arizona before the hazard was alleviated by showers the last few days, and a number of dust storms were reported in the southwest and western Great Plains.

TEMPERATURE.--Temperatures for the month averaged well above normal in the upper Mississippi Valley, the Great Plains, and Rocky Mountain region and southern California, and well below in the Southeast and Pacific Northwest.

The greatest average above normal departures for June, 8° or more, were centered over western South Dakota and adjacent areas. Rapid City, South Dakota, reported 90° or above on 12 days and a monthly average of 72.8°, both new June records for a period dating back to 1888. Also, daily temperatures were above normal on all but 2 days, averaging 17° above for the exceptionally hot period extending from the 8th through the 13th. Cheyenne, Wyoming, also had its highest June average, 67.2°, exceeding the previous record of 66.8° established in 1881. Although monthly departures were not quite as large in the lower Great Plains, the heat there was equally persistent and the month was among the hottest Junes of record. A good example was San Antonio, Texas, whose 84.7° average was its third highest of record with daily averages above normal on all but one day when it was exactly normal.

In contrast to the persistent hot weather in the Great Plains most days were unseasonably cool in the Southeast. In this area as well as most other areas east of the Mississippi, lowest temperatures occurred on the second and third when light frost was observed in some extreme northern areas and many stations, scattered from the Canadian Border to the Gulf of Mexico, recorded their lowest June temperatures on record. Among these were Baton Rouge, La., 55°; Meridian, Miss., 45°; Birmingham and Montgomery, Ala., 46° and 49° respectively; and Apalachicola, Florida, 58°, all on the 3d; and Evansville, Ind., 41°; and Sault Ste. Marie, Mich., 33°, both on the 2d.

Subnormal temperatures, favorable for preventing floods in the Pacific Northwest, averaged as much as 4° below normal. Burns, Oreg., had a record June low of 28° on the 5th and reported light frost on the 21st. Kalispell, Mont., recorded its lowest temperature, 33°, for so late in the season on the 30th.

PRECIPITATION.--Rainfall exceeded 2 inches from the eastern Great Plains to the Atlantic Coast except in a few relatively small scattered areas. Greatest totals, up to 10 inches, were measured in the Central Gulf area, most of which fell during a tropical storm on the 13th. Falling at fairly well spaced intervals, rainfall east of the Great Plains generally furnished ample soil moisture for good crop growth. Main exceptions were parts of Alabama, Georgia and South Carolina where little rain fell during May and beneficial rains in June did not occur until late in the month.

In the remainder of the country the pattern of rainfall was very uneven. Monthly totals exceeded 2 inches in parts of the Pacific Northwest and portions of the Texas and Oklahoma Panhandles, but were less than ½ inch in most remaining sections of the western Great Plains and parts of the far Southwest. Drought had spread over most of Texas by the end of the month, and during the last week cotton wilted, feed crops curled, and pastures burned as daily maxima exceeded 100°. Crops also declined sharply in drier parts of Oklahoma the last week, and grains suffered in South Dakota and Wyoming.

DESTRUCTIVE STORMS.--Severe thunderstorms (hail, wind, lightning, and heavy rain) were numerous east of the Rockies, yet no individual storms were particularly outstanding relative to the amount of damage.

Some of the most destructive of these storms, based on the amount of damage reported were as follows: in Oklahoma on the 3d; in New Jersey and eastern Pennsylvania on the 10th; to crops in South Carolina on the 13th; in eastern Colorado on the 17th; in the Judith Basin of Montana by hail on the 15th; in North Carolina on the 18th; in eastern Ohio and in southwestern Minnesota on the 21st; and in lower Michigan on the 24th.

Severe dust storms occasionally occurred in the western Great Plains. Particularly severe was the one in southwestern and south-central Kansas on June 25 - 26 when visibility at times was reduced to zero. In Syracuse and Hamilton Counties, Kansas, the storm moved in as a black roller duster, a familiar sight in the dust bowl during the 1930's.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	100	10+	2 Stations	37	3	Mobile WB Airport	11.92	Gainesville	0.79
Arizona	Davis Dam	119	27	Fort Valley	26	16	Flagstaff WB AP	2.79	21 Stations	.00
Arkansas	Monticello 3S	103	25	4 Stations	41	1+	2 Stations	8.63	De Queen	1.38
California	Cow Creek	125	28	White Mountain 2	17	15	Crescent City 7ENE	2.68	374 Stations	.00
Colorado	Holly	106	30	Fraser	18	7	Julesburg	4.45	Rangely	.00
Connecticut	Hartford Brainerd Fld.	98	14	Mansfield Hollow Dam	35	19	Woodbury 3W	4.68	Bridgeport WB AP	1.69
Delaware	Bridgeville 1NW	98	14	Georgetown 5SW	43	20	Newark College Farm	4.99	Middletown 2S	3.11
Florida	Inverness	100	24	Sanborn Tower	48	3	DeFuniak Springs	13.63	Captiva	.49
Georgia	2 Stations	101	21	Blairsville Exp. Station	34	3	Doctortown 1WSW	11.53	Carlton Bridge	.69
Idaho	do	103	27+	Obsidian 4NNE	21	5+	Cambridge	4.26	Idaho Falls 16W WB	.02
Illinois	Quincy	101	21	Morris 3NE	34	3	Danville	6.70	Bradford CAA AP	.25
Indiana	2 Stations	99	12+	2 Stations	32	2	Indianapolis Mon. Cir.	8.66	Logansport WSAL	.55
Iowa	do	104	19	Inwood 2W	34	1	Swea City	6.24	Toledo	.33
Kansas	Lincoln 2ESE	114	30	Burr Oak	37	1	Clay Center	8.56	Geneseo	.00
Kentucky	Fords Ferry Dam 50	99	21	7 Stations	39	2+	Gest Lock 3	10.73	Fords Ferry Dam 50	.36
Louisiana	Arcadia	102	28	3 Stations	47	2+	Buras 2NNW	14.80	Sugartown	.02
Maine	Portland	98	15	4 Stations	31	19	Ripogenus Dam	4.26	2 Stations	1.12
Maryland	2 Stations	100	13	Oakland 1SE	36	5	Merrill	7.10	Keedysville	1.47
Massachusetts	3 Stations	99	13+	West Cummington	30	19	New Salem	6.17	Provincetown 3N	.79
Michigan	Huron Mountain	100	12	Cornell 8NW	25	2	2 Stations	6.30	Grand Haven Fire Dept.	.37
Minnesota	Red Wood Falls CAA AP	104	13	2 Stations	28	1	Faribault	12.02	Remer	.48
Mississippi	Bay Springs	99	10	Newton Exp. Station	40	3	Saucier Exp. Forest	12.11	Vance	1.16
Missouri	Warsaw No. 1	103	21	4 Stations	39	1+	Cassville Ranger Sta.	9.95	Sumner 2SW	.87
Montana	Miles City	106	9	Lakeview	25	22	Cut Bank AP	4.75	Argenta	.02
Nebraska	8 Stations	104	13+	Ewing	31	1	Hardy	9.33	Mitchell 5E	.46
Nevada	Overton	117	28	Gibbs Ranch	21	5	Jarbidge	1.56	15 Stations	.00
New Hampshire	3 Stations	97	13+	Fabyan	25	19	Mount Washington	6.90	Northwood	1.45
New Jersey	2 Stations	100	14	2 Stations	35	19	Belleplain	8.86	Deepwater	2.51
New Mexico	do	107	14+	do	25	16+	Montoya 10SE	4.23	6 Stations	.00
New York	Rifton 1N	102	15	do	28	19	Seager	5.94	Hooker	.46
North Carolina	Goldsboro	101	24	Banner Elk	31	4	Whiteville 5N	8.40	Patterson	.48
North Dakota	Watford City 14S	103	10	Arvilla State Park	27	1	Riverdale	7.29	Bowman 11SE	.38
Ohio	Toledo Blade	99	13	2 Stations	37	2	Senecaville Dam	9.09	Springfield	.87
Oklahoma	Blackwell	110	30	Bartlesville 2W	41	2	Tahlequah	6.53	Eldorado	.13
Oregon	2 Stations	101	27	2 Stations	21	5+	Cloverdale 1NW	6.00	Mc Dermitt 26N	.11
Pennsylvania	Columbia	99	13	Coudersport 3NW	30	19	Slippery Rock	11.07	Everett 1SW	1.00
Rhode Island	Greenville	96	14	Kingston	39	19	Kingston	2.31	Block Island WB AP	1.50
South Carolina	Tilghman Forest Nurs.	104	26	Caesars Head	40	3	Marion	11.95	Rainbow Lake	.42
South Dakota	Faulkton 1NW	108	12	Canton	25	1	Bryant	7.00	Fort Thompson 3ENE	T
Tennessee	2 Stations	99	24	Crossville CAA AP	33	3	Bolton	6.91	Murfreesboro Sub. Sta.	.78
Texas	Presidio	113	15	Bronson	49	2	Gary	6.43	McCamey	.00
Utah	Zion NP	110	27	Hardware Ranch	26	7	Boulder	1.92	7 Stations	.00
Vermont	Bellows Falls	100	15	Lemington	28	19	West Hartford	4.24	South Newbury	1.52
Virginia	Waverly	99	26	Monterey	32	4	Davenport 2NE	6.62	Chilhowie 1S	1.00
Washington	2 Stations	98	9+	Rainier Paradise RS	23	11	Spruce	9.87	Quincy	.17
West Virginia	3 Stations	97	13+	2 Stations	30	4	Parsons 1SW	11.75	Alderson	1.85
Wisconsin	Alma Dam 4	101	11	do	26	1+	Spring Valley	10.29	Port Wing	.71
Wyoming	Albin	103	13	Kendall	18	22	Upton 12S	2.82	5 Stations	.00
Puerto Rico	2 Stations	95	7+	Garzas Dam	52	2	Rio Blanco 1800 Ft.	16.69	Puerto Real	2.28

+ And also on a later date or dates

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

Table 2

JUNE 195

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind									
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No of days		Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No. of days		Snow, Sleet		Average hourly speed	Prevailing direction	Fastest mile			No of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												Max. 90° F or above	Min 32° F or below						.01 inch or more	With thunderstorms	Total	Max depth on ground			Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In.	In	M p h		M p h			0-3	4-7	8-10	0-10	%
ALABAMA																																
Birmingham	610	992.7	1017.6	88	65	76.5	-0.9	96	24	46	3	13	0	63	67	1.69	-2.52	0.44	8	9	0.0	0	7.3	NE	33	S	15	5	15	10	6.2	62
Mobile	211	1009.0	1016.9	88	69	78.4	-1.2	97	9	56	3	15	0	67	75	11.92	5.83	3.25	11	11	0	0	8.6	SW			-	6	11	13	6.3	-
Montgomery	198	1009.7	1017.0	90	67	78.5	-1.1	96	28+	49	3	17	0	66	70	3.69	1.00	1.44	11	6	.0	0	6.5	W	30	NW	8+	3	16	11	6.2	63
ARIZONA																																
Flagstaff	6993	-	--	81	41	61.0	2.7	91	27	30	16	1	1	-	-	2.79	2.26	2.79	2	4	.0	0	---			-		21	3	6	2.5	-
Phoenix	1114	969.9	1007.9	101	72	86.9	3.0	109	10+	66	7+	30	0	43	24	.01	.05	.01	1	1	.0	0	6.3	W	*29	S	29	23	1	6	2.5	97
Prescott	5014	846.9	1010.7	89	56	72.7	2.6	100	27	48	16	13	0		-	.95	.72	.35	4	4	.0	0	12.1	SSW	54	SW	20	20	7	3	2.5	91
Tucson	2558	922.8	1008.0	101	71	86.2	4.1	109	11	63	8	29	0	41	23	.36	.06	.34	2	3	.0	0	7.4	W	34	SE	11	16	6	8	3.8	91
Winslow	4880	850.7	1008.0	94	58	76.0	4.6	100	27	51	16	27	0	28	21	.37	.08	.22	3	4	.0	0	11.4	WSW	*43	WSW	4	21	3	6	2.9	-
Yuma	199	1002.7	1007.7	106	72	89.0	1.2	117	12	65	6+	30	0	39	21	T	.01	T	0	0	.0	0	9.0	SSE	38	S	28	24	3	3	1.6	94
ARKANSAS																																
Fort Smith	458	998.6	1013.7	88	67	77.6	.7	100	30	50	2	15	0	67	74	3.95	.36	1.26	9	8	.0	0	7.4	ENE	28	NE	27	9	13	8	5.1	70
Little Rock	257	1003.1	1015.7	88	69	78.2	-.3	96	8+	54	2	15	0	66	70	5.08	1.65	1.73	8	5	0	0	8.8	SSW	*52	WNW	26	11	9	10	5.2	68
Texarkana	361	-	-- ---	89	69	79.0	-.9	98	27	54	2	19	0	-	-	3.67	.18	2.14	10	7	0	0	---	-						--	--	--
CALIFORNIA																																
Bakersfield	489	994.6	1012.2	93	62	77.7	.8	109	28	53	5	20	0	46	35	.00	-.09	.00	0	0	.0	0	7.2	NW	*25	NNW	14	29	0	1	.7	
Bishop	4108	871.7	1009.8	93	50	71.3	1.9	105	28	41	1+	20	0	-	-	.00	-.10	.00	0	0	.0	0			-			27	3	0	.9	-
Blue Canyon	5280	839.8	1013.2	70	50	59.7	.7	86	27+	31	4	0	1	--		.08	.96	.08	1	0	.0	0	---		-			22	5	3	2.4	-
Burbank	699	986.8	1012.9	82	58	69.9	2.4	98	26	50	1	5	0	54	66	T	.07	T	0	0	0	0	4.7	S	*14	S	1+	16	13	1	3.1	--
Eureka (U)	43	1016.6	1019.0	60	50	55.0	.6	67	9	46	30	0	0		-	1.71	1.05	.82	9	0	0	0	7.1	---	23	NW	30	13	7	10	5.0	68
Fresno	331	1000.3	1012.0	91	58	74.3	1.4	107	28	48	5	20	0	46	41	.00	-.11	.00	0	0	0	0	7.7	NW	28	NW	14	27	2	1	.8	100
Los Angeles (U)	312	-----	------	80	60	69.8	2.0	90	12	55	1	1	0	56	68	T	-.07	T	0	0	0	0	5.4	--	22	W	14	20	9	1	3.0	75
Los Angeles	99	1009.5	1013.1	74	59	66.3	1.6	88	28	55	1+	0	0	56	74	T	.07	T	0	0	.0	0	7.4	W	%30	W	14	11	17	2	4.2	
Mt. Shasta (R)	3544	892.3	1015.1	74	45	59.2	.6	91	27	37	6	1	0	-		.93	-1.30	.45	6	2	T	T	--		--	- -	-	22	3	5	2.9	-
Oakland	3	1014.9	1015.2	72	53	62.4	.8	93	27	47	5	3	0	51	70	T	-.15	T	0	0	.0	0	10.5	W	*29	W	3	25	4	1	1.9	--
Red Bluff	341	1000.0	1012.5	90	62	76.3	.3	109	28	53	1	17	0	45	36	.58	.12	.37	3	2	.0	0	9.1	SSE	35	SE	3	25	3	2	1.9	94
Sacramento	17	1011.5	1012.4	88	56	72.1	1.8	106	27+	48	4+	13	0	48	49	T	-.11	T	0	0	0	0	9.6	SW	35	SW	18	25	4	1	1.1	98
Sandberg	4517	862.5	1011.5	78	55	66.2	1.4	92	27+	40	5+	3	0			T	-.04	T	0	0	0	0	16.5	-	*46	NNW	14	29	0	1	.5	--
San Diego	19	1009.8	1013.1	72	60	66.3	.7	80	2+	55	1	0	0	56	73	T	-.04	T	0	0	0	0	7.7	SSW	19	NW	2	11	15	4	4.4	65
San Francisco (U)	52	-	- -	66	52	58.9	.2	85	26	50	3+	0	0	-	--	.02	-.13	.01	2	0	0	0	11.6		34	W	14	22	7	1	1.8	89
San Francisco	8	1014.6	1015.3	71	52	61.3	1.6	97	27	46	11	2	0	51	75	T	.13	T	0	0	0	0	14.1	WNW	37	WNW	15+	24	5	1	1.8	--
Santa Maria	238	1005.8	1014.6	69	48	58.7	1.4	81	27+	42	7	0	0	50	77	T	-.14	T	0	0	0	0	7.8	WNW	*24	NW	15	23	7	0	2.4	--
COLORADO																																
Alamosa	7538	774.8	1017.0	82	45	63.1	4.5	87	14	36	7	0	0			.16	-.33	.15	2	8	.0	0	----	-	-	-	-	10	16	4	4.5	-
Colorado Springs	6173	812.1	1011.3	87	54	70.3	4.8	95	29	47	1+	8	0	38	36	.41	1.38	.15	7	12	.0	0	12.1	SE	*40	WNW	5	7	19	4	4.7	-
Denver	5292	837.8	1010.1	89	58	73.4	7.0	96	13	50	7	10	0	38	33	.44	-1.20	.18	5	8	0	0	12.8	SSW	47	S	15	10	16	4	4.4	82
Grand Junction	4849	857.4	1009.3	90	61	75.4	4.2	98	13	53	7+	19	0	27	20	.30	-.15	.14	4	6	.0	0	11.3	ESE	56	SW	15	21	4	5	3.0	80
Pueblo	4639	856.1	1010.6	93	59	76.3	7.2	101	29	53	1+	22	0	41	35	.48	-.92	.30	4	9	0	0	9.7	W	40	SW	4+	13	12	5	4.3	82
CONNECTICUT																																
Bridgeport	7	1015.3	------	78	59	68.7	1.8	93	13	52	9	3	0			1.69	-1.78	1.11	7	6	.0	0	---	---	-	---		9	11	10	5.4	-
Hartford	169	1009.6	1015.1	81	56	68.5	-.4	97	14	45	19	5	0	57	71	3.63	.01	1.86	10	5	.0	0	9.6	S	37	SE	8	9	11	10	5.6	70
Middletown (U)	133	----	-----	80	55	67.7	- -	97	14	44	19	6	0	-	--	3.84	---	2.25	8	4	.0	0	7.9	---	%40	SE	3	--	-	--	---	--
New Haven	6	1014.8	1015.2	76	58	67.0	1.2	92	13	45	19	1	0	-	-	2.38	1.43	1.44	8	5	.0	0	5.9	-	21	W	28	9	12	9	5.6	70
DELAWARE																																
Wilmington	73	1012.5	1015.8	82	61	71.7	.1	96	13+	48	20	6	0	61	71	3.58	.44	.78	12	8	0	0	6.7	NW		---	--	7	14	9	---	-
DIST. OF COLUMBIA																																
Washington (U)	72	-	-	84	64	74.3	.4	97	13+	52	3	12	0		--	3.81	.39	1.74	12	4	.0	0	5.9	--		---	--	--	--	-	--	--
Wash. Nat'l AP	14	1011.8	1016.3	83	64	73.3	-.1	95	13	52	3	9	0	60	66	2.66	-.75	.97	12	3	.0	0	8.0	WNW	47	NW	24	8	13	9	5.5	69
FLORIDA																																
Apalachicola (U)	13	1015.5	------	85	73	78.7	1.2	91	8	58	3	1	0	-		4.08	-1.39	1.32	9	12	.0	0	6.4	- -	23	N	9+	6	10	14	6.5	55
Daytona Beach	31	1016.0	1017.5	88	68	78.1	1.0	94	22+	63	7+	8	0	68	79	7.41	.72	1.80	15	14	.0	0	8.6	E	*29	NE	28	6	9	15	6.7	--
Fort Myers	15	1016.6	------	90	69	79.6	1.0	94	9	63	8	23	0		-	4.67	-4.53	2.02	6	13	.0	0	6.8		32	SW	10	8	11	11	6.0	--
Jacksonville	24	1016.6	1017.6	89	70	79.3	1.0	96	19	58	3	14	0	69	75	7.87	1.05	1.82	12	11	.0	0	8.8	SE	49	N	26	4	8	18	7.1	50
Key West (U)	9	1015.4	- ----	90	76	82.6	0.0	92	7+	67	10	17	0	-	--	1.85	-2.16	1.47	7	5	0	0	6.6	---	27	SW	10	6	9	15	6.7	72
Lakeland (U)	22	----	------	90	70	80.0	.1	96	9	66	6+	16	0			5.77	-2.34	2.45	8	13	0	0	6.5	- -	--	--	-	6	14	10	6.2	76
Miami (U)	8	-----	--- --	85	73	79.3	-1.0	89	25	67	7	0	0	--	-	4.88	-.67	1.56	10	11	.0	0	9.9	---	38	S	15	7	9	14	6.4	66
Miami	8	1015.8	1016.8	89	73	80.7	-.6	92	25	67	8	8	0	70	74	3.93	-2.89	1.32	9	10	.0	0	9.9	ESE	28	ESE	15	6	10	14	6.5	-
Miami Beach	9	---- -	------	86	76	80.8	.7	91	25	71	8	2	0	--	--	3.38	-1.65	.90	10		.0	0	-	--		---	-	6	10	14	---	--
Orlando	106	1013.6	1017.7	91	69	79.9	-.9	95	9+	64	7	21	0	68	74	5.41	-2.44	2.27	12	12	.0	0	7.8	S	*32	NE	4+	4	16	10	6.3	--
Pensacola (U)	13	1014.7	----	85	72	78.2	-1.4	93	8	59	3	7	0			10.78	5.61	4.14	13	13	0	0	9.0	-	29	SE	13	-	--	--	--	49
Tallahassee	64	1014.3	1016.9	88	68	78.2	1.5	94	8	56	3+	14	0	67	76	7.32	.60	1.56	13	16	0	0	5.5	SE	-		--	3	6	21	7.5	--
Tampa	19	1016.3	1017.5	89	70	79.6	.8	93	10	64	4	10	0	68	71	2.86	4.91	1.13	5	10	.0	0	8.5	W	*25	ESE	10	8	11	11	5.8	66
West Palm Beach	15	1015.8	1016.7	89	72	80.3	.3	94	9+	65	8	11	0	70	75	1.94	5.95	.60	11	12	.0	0	9.3	ESE	*29	SSW	10	5	9	16	6.7	-
GEORGIA																																
Atlanta	975	976.9	1017.4	88	66	76.8	.9	96	29	46	3	14	0	62	65	2.21	1.81	1.01	11	9	0	0	10.3	NW	45	SW	15	4	18	8	6.0	61
Athens	798	988.3	1017.0	89	64	76.7	2.2	98	29	47	3	17	0	62	66	2.99	-.85	1.69	7	9	.0	0	8.4	NW	*23	NW	1+	6	17	7	5.8	-
Augusta	143	1009.8	1016.1	92	65	78.3	.9	101	24	53	3+	20	0	64	67	2.75	-.99	1.58	5	11	.0	0	6.8	W	*42	WNW	24	7	12	11	6.0	--
Columbus	385	1003.2	--- -	90	66	78.1	.9	97	29	44	3	17	0	-	-	2.71	1.24	.91	10	9	.0	0	- --	---	-	---	-	5	10	15	7.0	--
Macon	356	1003.3	1016.6	91	67	79.2	-1.7	98	29	48	3	21	0	64	65	4.80	1.05	1.96	9	12	.0	0	8.7	WNW	31	NW	22	6	15	9	6.0	65
Rome	637	994.4	------	90	62	75.7	1.7	99	28	44	3	20	0	-	--	2.34	-1.73	.97	9	14	0	0	----	---	-	---	-	4	13	13	6.6	-
Savannah	48	1014.4	1016.7	89	67	77.9	1.8	95	24	55	3	14	0	68	76	9.01	3.84	3.17	11	13	.0	0	8.3	SW	31	NW	25	4	14	12	6.4	69
Thomasville	283	------	-----	90	69	79.4	-.3	96	10	54	3	18	0	--		7.51	2.66	1.39	14	14	0	0	----	---	-	-	--	-	--		--	--
IDAHO																																
Boise	2842	918.4	1013.4	79	51	64.5	-.6	97	27	37	5	4	0	41	48	.80	.04	.57	7	1	0	0	8.9	NW	31	NW	14	17	6	7	3.5	86
Idaho Falls 46W (R)	4933	848.0	1013.2	79	43	60.7	1.1	93	28	30	17+	3	2		-	.02	.79	.01	2	5	.0	0	10.9	--	a34	WSW	4	--		--	---	--
Idaho Falls 42NW (R)	4790	- - --	------	81	42	61.6	2.0	94	28	28	22	5	2	--		.09	.99	.04	3		--	--	----	- -	--	- -	-	--	--	-	-	-
Lewiston	1413	963.4	1014.7	76	50	62.7	-3.6	91	27	40	11+	1	0	.		2.32	.57	1.72	9	3	.0	0	----	--	-	---	--	9	10	11	5.9	-
Pocatello	4444	861.8	1012.6	80	48	63.9	.9	95	28	36	17	4	0	37	41	.03	.99	.02	2	2	.0	0	13.5	SW	42	W	4	17	10	3	3.4	87
ILLINOIS																																
Cairo (U)	314	1003.4	- ----	87	67	77.1	.7	98	24	51	2	13	0	--	-	5.61	1.77	1.66	10	9	.0	0	6.6	---	34	NE	21	11	11	8	5.0	78
Chicago	610	992.9	1015.4	84	64	73.9	4.5	97	12	44	3	10	0	57	58	.78	3.37	.28	9	5	0	0	7.8	SW	32	NW	27	12	13	5	4.8	78
Moline	589	993.2	1015.3	86	62	74.0	3.2	94	10+	42	3	12	0	60	65	1.55	3.08	.70	8	6	0	0	9.4	S	36	W	21	13	10	7	4.6	75
Peoria	654	993.6	1015.7	85	63	74.1	3.2	94	11	43	3	11	0	61	62	.98	2.90	.49	7	7	0	0	9.3	-	32	NW	21	10	16	4	4.7	73
Springfield	589	992.9	1015.8	85	64	74.6	2.7	93	11+	43	2	9	0	62	66	3.09	1.09	1.05	10	10	.0	0	8.8	SSW	54	SW	26	10	10	10	5.4	78
INDIANA																																
Evansville	383	1001.0	1016.6	87	63	74.8	.2	95	12	41	2	13	0	62	67	2.60	1.27	1.21	11	6	.0	0	7.2	SW	29	S	12+	12	11	7	4.7	72
Fort Wayne	801	985.4	1016.0	84	60	72.1	3.1	96	13	38	2	8	0	58	64	2.26	1.30	.82	7	8	.0	0	9.1	S	38	SW	24	5	17	8	5.8	68
Indianapolis	793	987.5	1017.0	82	62	72.1	.7	92	11+	39	2	5	0	61	69	3.48	-.73	1.83	8	8	0	0	8.6	SW	40	NW	24	9	11	10	5.5	70
South Bend	768	988.2	1015.9	83	60	71.4	2.7	94	11+	35	2	7	0	59	67	1.41	2.42	.86	5	9	0	0	9.5	SSW	*27	NNW	1	7	18	5	4.9	

See footnotes at end of table

Table 2—Continued

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	With thunderstorms	Snow, Sleet: Total	Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F	°F	°F	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
IOWA																																
Burlington	694	990.5	1016.0	87	62	74.8	1	96	19	41	2	14	0	61	65	1.79	-4.05	0.60	8	7	.0	0	7.9	SSW	16	NW	19	8	19	3	4.7	86
Des Moines	948	983.7	1013.6	88	64	76.0	5.4	100	19	46	1	15	0	59	60	1.29	-3.70	.41	11	8	.0	0	11.3	S	47	W	26	9	14	7	5.1	81
Dubuque	1065	989.5	1015.1	83	60	71.6	.8	92	21	41	2	5	0	59	62	1.41	-3.58	.71	5	5	.0	0	--	---	-	-	-	12	13	5	4.7	--
Sioux City	1094	971.9	1012.6	90	64	76.9	6.6	100	13+	41	1	18	0	57	71	3.30	-1.11	1.62	10	10	.0	0	14.6	S	57	NW	25	13	14	3	4.2	62
Waterloo	870	-	-	85	62	74.0	4.8	96	20	41	2	11	0		-	2.07	-2.69	1.21	5	7	.0	0	11.3	--				-	--	-	---	--
KANSAS																																
Concordia (U)	1375	960.4	----	91	66	78.3	4.4	109	30	41	1	17	0	-	58	4.03	-.20	1.15	9	11	.0	0	6.1	--	33	NW	26	15	7	8	4.2	87
Dodge City	2594	925.5	1011.0	93	66	79.3	5.8	104	30	52	1	17	0	56	50	1.20	-1.81	.45	4	8	.0	0	16.3	SSE	53	S	23	19	8	3	3.0	87
Goodland	3645	886.9	1010.4	91	60	76.8	8.3	101	4+	48	1	25	0	50	45	.59	-2.43	.34	3	8	.0	0	14.2	S	*40	NNW	6+	16	12	2	3.9	--
Topeka	877	979.3	1014.4	87	65	76.8	3.0	99	30	47	1	15	0	63	66	5.32	.78	1.69	9	11	.0	0	11.1	SSE	56	N	27	11	11	8	5.1	71
Wichita	1321	965.1	1012.7	92	67	79.3	4.0	106	30	47	1	20	0	62	56	1.28	-3.71	.72	5	8	.0	0	13.6	SSE	34	S	17	10	10	10	5.3	74
KENTUCKY																																
Lexington	979	981.9	1017.3	83	62	72.5	.3	91	24	[illegible]	4	3	0	62	72	6.80	2.59	2.14	11	10	.0	0	7.8	S	--	-	--	9	8	13	5.3	--
Louisville	474	997.4	1016.5	85	63	73.9	.3	93	11	45	2	9	0	61	70	2.38	-1.68	1.01	11	7	.0	0	7.1	SE	37	N	24	10	13	7	4.8	70
LOUISIANA																																
Baton Rouge	64	1013.5	1016.7	88	69	78.8	-.8	98	9	55	3	13	0	68	75	1.78	-1.24	1.45	10	9	.0	0	7.9	W		--	-	6	8	16	6.6	--
Lake Charles	12	1014.6	1015.7	89	71	79.8	-.9	94	8+	60	3	17	0	69	74	1.94	-3.11	.91	8	7	.0	0	6.1	S	*21	ESE	12	5	13	12	6.2	--
New Orleans (U)	9	1014.2		88	73	80.2	-1.7	96	9	65	2+	15	0	--	-	11.68	6.11	3.71	12	8	.0	0	5.4	---	25	SE	15	6	16	8	5.4	62
New Orleans	3	1014.2	1016.2	86	70	78.7	-1.8	94	8+	61	3	14	0	69	77	6.68	1.05	3.04	9	5	.0	0	7.5	SSW	*29	ENE	27	5	13	12	6.0	--
Shreveport	252	1006.4	1015.4	89	69	79.3	-1.8	98	27	58	2	19	0	67	70	3.11	.47	1.43	8	9	.0	0	7.5	S	--	-	--	12	10	8	5.1	77
MAINE																																
Caribou	624	990.8	1013.9	68	50	59.0	.0	91	14	38	8	1	0	51	76	3.35	-.60	1.40	17	4	.0	0	10.0	WSW	*44	NNW	17	1	10	19	7.8	--
Portland	61	1011.2	1015.3	74	50	62.0	.2	94	13+	38	19	2	0	53	73	1.51	-1.81	.92	11	6	.0	0	8.5	S	34	E	8	5	14	11	6.5	65
MARYLAND																																
Baltimore (U)	14	----	- --	87	67	75.9	1.6	100	13	58	2+	9	0	--	-	[illegible]	1.31	1.11	11	-	.0	0	--	--	-	-	-	.	--	--	--
Baltimore	146	1011.2	1016.6	82	61	71.9	-.3	97	13	51	5	10	0	61	70	2.11	-1.41	.94	10	5	.0	0	7.8	WNW	40	W	23+	7	15	6	5.4	61
Frederick	294	-- -	--	82	59	70.8	-1.8	96	13	49	5	7	0	-		2.68	-1.28	1.70	6		.0	0	-		--	-	-		-	-	-	--
MASSACHUSETTS																																
Blue Hill Obs (R)	629	992.2	1015.3	77	57	65.6	1.6	93	14	44	9+	3	0	--	73	2.57	-1.61	1.24	11	3	.0	0	12.8	S	55	NW	13	6	10	14	6.4	61
Boston	15	1010.1	1014.7	78	60	68.9	1.7	97	13	47	10	5	0	55	66	2.03	-1.45	1.11	6	2	.0	0	13.2	SW	*52	WNW	13	7	12	11	6.0	72
Nantucket	43	1015.5	1016.1	66	54	60.8	-.1	77	16	45	7+	0	0	55	83	2.29	-.95	1.19	9	3	.0	0	12.0	SW	33	NE	18	3	13	14	6.9	65
Pittsfield	1153	973.5	-	76	52	63.9	.9	90	11	38	19	1	0	--	-	1.76	-2.83	1.00	9	1	.0	0	--	---			--	-		--	-	--
MICHIGAN																																
Alpena (U)	587	993.2	-- -	71	54	62.7	1.2	94	13	38	1+	2	0	-		2.57	.02	.87	11	3	.0	0	9.5		35	W	27	10	12	8	5.2	71
Detroit	619	989.8	1016.2	79	60	69.8	1.7	96	13	42	1	4	0	57	67	1.61	-1.29	.85	8	7	.0	0	8.4	S	42	W	24	6	12	12	6.1	65
Detroit (Willow Run)	722	987.5	1015.6	81	59	69.9	1.3	97	13	42	1	6	0	56	66	4.87	1.61	3.13	10	7	.0	0	9.5	WNW	*32	WNW	27	6	14	10	6.0	—
East Lansing (U)	856	-----	---- -	81	59	70.2	2.8	95	13	39	2	4	0	--	--	1.80	-1.57	.63	7	7	.0	0	3.8	---	17	W	27	--	--	--	--	77
Escanaba (U)	594	992.6	--	70	54	62.3	1.6	94	12	34	2	1	0	-	--	4.83	2.03	1.79	12	5	.0	0	9.4	---	47	N	13	8	9	13	6.1	61
Flint	761	988.2	1015.8	80	57	68.2	.8	93	13	40	1	4	0	56	67	2.97	-.04	1.35	8	7	.0	0	7.4	S	*37	W	27	9	11	10	5.5	--
Grand Rapids	681	990.2	1015.6	81	58	69.5	2.8	94	13	35	2	5	0	56	65	3.36	.01	2.01	7	6	.0	0	8.8	WNW	38	W	24	9	9	12	5.4	73
Marquette (U)	677	987.5	-	72	52	62.1	2.5	99	13	35	2	3	0	-	67	3.20	-.26	.99	10	5	.0	0	7.0	--	26	S	13	8	6	16	6.6	62
Muskegon	627	992.9	1015.9	79	57	68.1	3.7	91	11	37	2	1	0	56	63	1.13	-1.74	.92	5	5	.0	0	----		--	-	--	14	10	6	4.2	--
Sault Ste Marie	721	993.6	1016.0	72	49	60.1	2.0	90	13	33	2	1	0	52	75	4.22	1.20	2.06	12	5	.0	0	8.3	WNW	*24	SW	7	6	11	13	6.6	51
MINNESOTA																																
Duluth	1409	973.6	1014.8	73	50	61.9	2.2	92	10	32	1	3	1	51	71	1.19	-3.14	.48	10	7	.0	0	12.5	E	42	W	27	7	11	12	6.2	63
Intern'l. Falls	1179	972.9	1013.6	79	51	65.0	4.9	98	11	31	1	3	1	52	65	1.37	-2.36	.81	8	6	.0	0	9.9	SE	-	-	-	5	13	12	6.2	—
Minneapolis	830	981.4	1014.1	84	62	73.4	5.2	100	13	44	1	9	0	58	62	6.58	[illegible]	1.45	14	12	.0	0	11.9	S	38	SW	29	9	13	8	5.2	65
Rochester	1017	977.7	1014.3	84	60	71.9	5.1	96	13	39	2	10	0	60	67	4.46	.13	1.17	10	9	.0	0	9.3	SE	--	---	-	11	14	5	4.5	-
St Cloud	[illegible]	976.3	1013.4	81	57	68.9	3.9	97	11	39	1	7	0	58	71	5.46	1.61	3.11	10	11	.0	0	7.9	E	-	- -	-	10	11	9	5.4	--
MISSISSIPPI																																
Jackson	[illegible]	1004.7	1016.5	87	66	76.6	-3.3	95	10	48	3	15	0	66	73	7.37	3.65	2.97	10	8	.0	0	6.1	SSE	29	SE	10	8	12	10	5.1	63
Meridian	294	1003.2	---	89	65	76.7	-2.4	97	29	[illegible]	[illegible]	17	0	—	-	4.96	.63	1.44	9	4	.0	0	- -	--	--	--	--	9	13	8	5.2	--
Vicksburg (U)	234	1007.3	-	86	69	77.8	-1.7	94	27	56	2	13	0	--	—	2.90	-.41	1.81	6	4	.0	0	7.4	---	27	SE	10+	5	16	9	5.7	71
MISSOURI																																
Columbia	778	987.5	1015.5	87	63	75.0	2.1	97	21	45	2	11	0	63	69	1.98	-2.92	.89	8	9	.0	0	8.0	SSE	26	NE	20+	9	15	6	5.1	86
Kansas City	741	980.7	1015.0	87	68	77.8	2.4	97	24+	50	1	13	0	62	61	3.61	-1.41	1.20	9	8	.0	0	10.6	S	49	NW	27	8	14	8	5.3	82
St Joseph	809	- -	- - -	87	65	76.1	1.7	96	19	45	1	12	0	-	-	4.28	-2.18	1.81	9	11	.0	0	10.4		*35	NNW	30	12	9	9	4.9	--
St Louis (U)	465	995.9	-	86	68	77.0	1.2	94	[illegible]	53	1	9	0	-	-	2.39	-1.41	1.71	9	12	.0	0	9.3	---	45	SW	24	11	15	4	4.6	76
St Louis	552	995.9	1016.1	87	66	76.2	1.1	95	21	48	2	13	0	62	65	3.07	-1.30	1.61	8	7	.0	0	8.6	SW	--	-	--	8	13	9	5.4	-
Springfield	1265	968.8	1015.8	83	64	73.5	.6	93	22	45	2	8	0	64	77	3.63	-1.93	1.42	9	7	.0	0	11.4	S	50	N	27	9	8	13	5.8	62
MONTANA																																
Billings	3568	888.9	1009.9	84	55	69.3	5.3	96	11	45	7	8	0	48	49	.66	-1.95	.43	5	9	.0	0	11.8	SW	41	SE	15	12	15	3	4.0	80
Butte	5530	829.7	1014.8	72	39	55.3	.8	85	29	33	6+	0	0	36	-	1.55	-.73	.64	10	10	T	0	8.4	NW	*36	NW	1	10	15	5	4.8	—
Glasgow (U)	2277	936.7	[illegible]	82	54	67.6	4.0	97	9+	44	7	5	0	44	48	1.68	-1.80	.77	10	8	.0	0	12.2	ESE	*40	WSW	9+	9	13	8	5.2	--
Great Falls	3664	884.9	1011.2	76	52	63.8	3.1	93	10	41	30	4	0	37	46	2.58	-.38	.97	10	7	.0	0	15.4	SW	52	SW	10	9	15	6	5.0	75
Havre	2488	923.1	1010.8	80	53	66.0	3.1	98	10	41	7	6	0	43	49	1.75	-1.23	1.09	8	4	.0	0	9.7	---	36	SW	15	10	10	10	5.7	64
Helena	3893	872.3	1012.2	77	48	62.2	2.8	94	10	39	7	3	0	40	50	1.80	-.35	1.00	9	9	.0	0	10.6	WNW	49	S	9	7	17	6	5.1	70
Kalispell	2965	-	---	70	45	57.3	-1.1	90	10	33	30	1	0	-	-	2.92	.49	1.99	13	6	T	0	-	--	--		.	6	13	11	6.5	--
Miles City	2629	928.9	1009.8	87	59	73.0	7.8	101	20	50	7+	11	0	46	--	.98	-1.86	.49	8	10	.0	0	13.3	SE	*40	SSW	15	16	9	5	4.1	--
Missoula	3200	901.5	1015.0	73	45	59.1	-1.1	90	9+	37	12	2	0	43	60	2.87	1.00	.93	13	7	.0	0	7.2	NW	51	S	3	6	12	12	6.1	64
NEBRASKA																																
Grand Island	1841	947.5	1012.1	89	64	76.2	4.6	99	21	41	1	15	0	61	62	3.51	-.15	1.37	9	12	.0	0	13.8	SSE	--	--	--	16	11	3	3.4	--
Lincoln (U)	1166		.	89	65	77.2	4.4	103	21	45	1	15	0	-		3.93	-.17	.98	12	15	.0	0	10.7	--	60	SW	6+	13	12	5	4.2	86
Norfolk	1544	958.0	1012.6	89	62	75.3	6.0	102	21	39	1	14	0	59	56	3.89	-.89	1.47	13	16	.0	0		---	--	--		12	12	6	4.3	--
North Omaha	[illegible]	966.1	-	88	64	76.0		101	19	41	1	15	0	—	--	2.74		1.15	9	12	.0	0	- -		--	--	-	-	--	-	--	-
North Platte	2779	914.3	1010.7	89	60	74.0	5.2	99	12+	41	1	14	0	57	59	5.25	2.33	2.89	10	16	.0	0	10.7	SE	47	SE	15	15	11	4	3.6	83
Omaha	978	974.3	1013.6	89	66	77.6	5.0	102	19	43	1	16	0	60	58	2.67	1.84	.70	10	9	.0	0	11.0	SSE	57	SW	21	11	13	6	4.6	80
Scottsbluff	3950	877.4	1009.3	90	57	73.4	6.9	101	13	46	23	12	0	48	47	1.30	-1.48	.28	8	11	.0	0	10.8	ESE	--	- -	--	16	10	4	3.8	-
Valentine (U)	2587	921.1		90	59	74.6	7.3	103	13	37	1	12	0	-	-	1.72	-1.44	.81	8	13	.0	0	12.0	---	36	S	15+	17	10	3	3.8	82
NEVADA																																
Elko	5075	844.2	1014.0	80	40	60.1	-.2	95	28	28	5	3	3	35	45	.58	-.12	.49	3	2	.0	0	5.5	WSW	*32	W	23	21	5	4	2.6	--
Ely	6257	809.3	1012.9	81	40	60.5	.9	93	28+	31	6	2	1	27	31	.38	-.12	.38	1	5	.0	0	11.8	---	47	SW	4	20	8	2	2.9	88
Las Vegas	2162	943.1	1006.7	101	70	85.5	1.9	114	27+	61	6	30	0	24	12	.00	-.13	.00	0	0	.0	0	12.6	SW	*45	SW	14	27	2	1	.8	97
Reno	4397	861.8	1014.1	82	42	61.7	.2	99	27+	33	5	5	0	35	41	.02	-.40	.02	1	1	.0	0	7.0	WNW	38	SW	4	23	5	2	2.2	99
Winnemucca	4299	867.3	1014.0	81	41	61.2	-2.8	98	27	24	5	6	3	32	38	.05	-.74	.03	2	0	0	0	8.4	W	35	W	4	20	6	4	3.0	85
NEW HAMPSHIRE																																
Concord	339	1004.1	1014.9	79	52	65.4	1.3	96	14+	37	19	4	0	55	71	1.69	-1.93	1.21	8	3	.0	0	5.8	NW	28	NE	8	6	14	10	5.9	61
Mt Washington	6262	806.2	--	51	39	45.1	.7	66	14	23	18	0	4	--	91	6.90	.64	2.55	15	2	T	T	27.4	■	%78	N	11	3	6	21	8.0	42

See footnotes at end of table

CLIMATOLOGICAL DATA

Table 2-[illegible]

State and station	Elevation Ft	Pressure: Station Mb.	Pressure: Sea level Mb	Temperature: Average maximum °F.	Average minimum °F	Average °F.	Departure from normal °F	Highest °F	Date	Lowest °F	Date	No. of days: Max 90° F or above	No. of days: Min 32° F or below	Average dew point °F	Average relative humidity	Precipitation: Total In.	Departure from normal In.	Greatest in 24 hours In	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total In.	Snow, Sleet: Max depth on ground In.	Wind: Average speed M p. h.	Prevailing direction	Fastest mile: Speed M p. h.	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear 0-3	Partly cloudy 4-7	Cloudy 8-	Average sky cover 0-10	Percent of possible sunshine
NEW JERSEY																																
Atlantic City	[illegible]	1013.[illegible]	---	74	[illegible]	68.8	0.1	[illegible]	[illegible]	[illegible]	4+	[illegible]	[illegible]			4.12	1.13	1.50	[illegible]	[illegible]	0.0	0	13.0		34	[illegible]	9	[illegible]	[illegible]	[illegible]	5.8	[illegible]
Newark	1	1014.4	1015.7	82	[illegible]	71.9	1.4	[illegible]	14	[illegible]	20	[illegible]	[illegible]	[illegible]	[illegible]	3.31	-.49	1.24	[illegible]	[illegible]	.0	0	[illegible]	SSW	*29	[illegible]	27	[illegible]	[illegible]	[illegible]	5.6	
Trenton (L)	56	1008.4	1015.2	8[illegible]	6[illegible]	71.7	.9	[illegible]	14	61	20	[illegible]	[illegible]		-	5.01	1.14	[illegible]	9	6	.0	0	[illegible]	---	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	5.4	[illegible]
NEW MEXICO																																
Albuquerque	[illegible]	848.6	[illegible]	94	[illegible]	78.9	4.0	100	13	[illegible]	[illegible]+	26	[illegible]	40	[illegible]	[illegible]	-.29	.28			.0	0	[illegible]	[illegible]	41	SE	27	17	[illegible]	2	3.3	[illegible]
Clayton	[illegible]	845.9	1011.4	89	[illegible]	73.6	4.0	98	[illegible]	[illegible]	11	14	[illegible]	-		1.00	-.91	[illegible]	[illegible]	12	.0	[illegible]						14	13	[illegible]	3.9	
Raton	6379	807.3	[illegible]	87	[illegible]	69.0	5.1	92	14+	[illegible]	29	7	0	--		.65	-1.07	[illegible]	11	[illegible]	[illegible]	0						9	[illegible]	[illegible]	4.7	
Roswell	[illegible]	892.0	1009.7	[illegible]	[illegible]	81.1	4.3	[illegible]	15	[illegible]	13+	29	0	50	39	.04	-1.43	.02	3	[illegible]	.0	[illegible]	11.1		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3	[illegible]	
NEW YORK																																
Albany	[illegible]	[illegible]	1015.0	79	[illegible]	67.3	.3	[illegible]	14	39	19	[illegible]	0	55	[illegible]	1.86	-1.51	.65	[illegible]	[illegible]	.0	0	7.6	S	[illegible]	NW	22	6	12	[illegible]	[illegible]	74
Binghamton	[illegible]	957.2	1015.8	[illegible]	55	65.1	.9	89	13	[illegible]	[illegible]	1	0	53	68	3.17	-.48	.89	[illegible]	7	.0	0	10.0	SW	43	N	23	4	[illegible]	12	6.3	[illegible]
Buffalo	693	988.1	1016.2	76	57	[illegible]	.9	[illegible]	15+	[illegible]	19	2	[illegible]	[illegible]	[illegible]	.99	-1.71	.45	[illegible]	0	.0	0	11.6	SW	36	W	27	[illegible]	9	12	5.8	[illegible]
New York (L)	10	1014.3		79	63	71.2	1.4	[illegible]	14	53	9	3	[illegible]			3.45	-.25	1.62	10	5	.0	0	[illegible]		36	SW	[illegible]	7	16	7	5.7	[illegible]
New York	[illegible]	1013.9	1015.9	81	[illegible]	72.4	1.4	[illegible]	[illegible]	[illegible]	[illegible]	6	0	58	64	2.76	-.62	1.23	9	[illegible]	.0	[illegible]	10.1	S	[illegible]	SW	28	[illegible]	[illegible]	9	5.9	-
Rochester	[illegible]	996.4	1015.6	77	[illegible]	66.6	.0	92	[illegible]	12	19	3	[illegible]	55	69	.97	-1.88	.50	6	2	.0	[illegible]	[illegible]	SW	35	W	27	7	[illegible]	10	5.7	64
Schenectady	217		--	79	[illegible]	68.3	.3	[illegible]	[illegible]	[illegible]	19	3	0			1.84	-2.02	[illegible]	[illegible]	3	.0	[illegible]						[illegible]	[illegible]	2	3.3	
Syracuse	[illegible]	[illegible]	1016.0	78	56	67.0	-.8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.71	[illegible]	.69	[illegible]	1	.0	[illegible]	7.6	WSW	[illegible]	W	12	[illegible]	[illegible]	[illegible]	5.3	[illegible]
NORTH CAROLINA																																
Asheville	2203			82	[illegible]	70.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			2.21	-1.31	.67	[illegible]	[illegible]	.0	0	6.0		[illegible]	S	29	[illegible]	[illegible]	11	6.2	[illegible]
Charlotte	727	989.3	1016.9	[illegible]	[illegible]	76.8	.2	100	[illegible]	[illegible]	4	[illegible]	[illegible]	[illegible]	65	1.22	-2.29	.59	7	[illegible]	[illegible]	[illegible]	[illegible]	NNE	31	[illegible]	[illegible]	7	[illegible]	7	5.7	[illegible]
Greensboro	891	985.8	1017.4	86	[illegible]	73.8	[illegible]	[illegible]	25	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	1.34	[illegible]	[illegible]	.0	0	6.3	[illegible]	31	[illegible]	26	3	16	[illegible]	6.3	67
Hatteras (R)	1	1015.6	1016.3	[illegible]	70	74.7	[illegible]	85	[illegible]	62	3	[illegible]	0	[illegible]	[illegible]	5.51	[illegible]	2.95	[illegible]	11	.0	[illegible]	14.7	[illegible]	36	N	7	[illegible]	8	[illegible]	7.5	62
Raleigh	[illegible]	1003.0	1016.6	87	63	74.9	[illegible]	[illegible]	23+	[illegible]	[illegible]	14	0	[illegible]	71	4.43	.34	3.03	8	[illegible]	.0	0	[illegible]	[illegible]	[illegible]	N	18	6	[illegible]	[illegible]	5.4	[illegible]
Wilmington	[illegible]	1015.4	---	86	67	[illegible]	.8	[illegible]	21+	[illegible]	3	11	[illegible]			4.36	-.13	1.19	12	9	.0	[illegible]	[illegible]		[illegible]	NE	29	[illegible]	[illegible]	9	6.0	70
Winston Salem	967	982.3	[illegible]	[illegible]	[illegible]	74.7	[illegible]	97	25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.31	-1.29	1.78	[illegible]	1	.0	[illegible]	5.9	NE	[illegible]	NNW	2	6	15	[illegible]	5.9	-
NORTH DAKOTA																																
Bismarck	1650	951.9	[illegible]	84	[illegible]	70.1	[illegible]	99	10	[illegible]	1	4	[illegible]	55	[illegible]	2.36	-.97	[illegible]	6	[illegible]	.0	[illegible]	12.9	SSE	56	W	30	12	9	[illegible]	4.4	79
Devils Lake (L)	1471	959.7	---	79	57	67.9	5.5	[illegible]	10	40	1	[illegible]	0			5.95	2.77	3.41	[illegible]	[illegible]	.0	[illegible]	8.7		[illegible]	NW	[illegible]	[illegible]	[illegible]	7	5.2	
Fargo	[illegible]	978.7	1012.7	82	59	70.7	6.1	[illegible]	12	[illegible]	1	4	[illegible]	57	[illegible]	2.85	-.19	1.07	[illegible]	10	.0	[illegible]	14.7	SE	42	SE	[illegible]	[illegible]	9	[illegible]	5.4	[illegible]
Williston (L)	1877	943.8	1010.3	81	56	68.5	5.5	99	[illegible]+	16	[illegible]	3	[illegible]	49	[illegible]	3.24	-.35	2.53	[illegible]	[illegible]	.0	[illegible]	8.7	-	34	SE	15	9	9		5.7	[illegible]
OHIO																																
Akron	[illegible]	979.4	1017.5	77	57	67.0	-1.4	91	13	44	2+	1	[illegible]	[illegible]	74	3.68	-.16	[illegible]	11	9	.0	[illegible]	9.3	SW				[illegible]	[illegible]	[illegible]	5.9	--
Cincinnati Obs.	761	---	---	83	[illegible]	72.6	-.2	[illegible]	[illegible]	[illegible]	2	5	0			3.62	-.43	.81	12	7	.0	0	4.2		17	SW	13+					[illegible]
Cincinnati	869	[illegible]5.2	1016.8	82	62	72.1	.3	[illegible]	12	[illegible]	2	4	0	[illegible]	[illegible]	4.98	.94	1.91	[illegible]	7	.0	[illegible]	7.6	SSW	[illegible]	WNW	24	[illegible]	[illegible]	[illegible]	5.7	
Cleveland	787	988.9	1016.6	79	[illegible]	68.7	-.7	[illegible]	13+	[illegible]	1+	5	[illegible]	[illegible]	72	4.14	1.09	1.66	[illegible]	9	.0	0	11.1	S	[illegible]	[illegible]	[illegible]	[illegible]	11	11	5.9	[illegible]
Columbus (L)	724	-	-	81	[illegible]	71.8	-.2	[illegible]	13	47	2+	5				1.62	-2.04	1.12	[illegible]	9	.0											
Columbus	815	987.3	1017.0	83	[illegible]	71.1	.4	[illegible]	13	[illegible]	[illegible]+	10	[illegible]	59	[illegible]	3.22	-1.11	1.28	8	9	.0	[illegible]	7.0	SSW	[illegible]	NW	24	7	11	[illegible]	6.0	62
Dayton	1002	980.9	[illegible]	[illegible]	[illegible]	71.3	.4	[illegible]	13	46	[illegible]	4	0	[illegible]	[illegible]	2.29	-1.61	1.47	5	7	.0	[illegible]	9.4	SW	35	[illegible]	13	9	8	13	[illegible]	[illegible]
Sandusky (L)	603	994.4		79	61	69.8	-.1	[illegible]	13	[illegible]	1+	6	0			4.48	[illegible]	1.46	[illegible]	[illegible]	.0	[illegible]	5.8	-	[illegible]	W	[illegible]	9	[illegible]	[illegible]	4.8	68
Toledo	[illegible]	991.0	1016.2	81	59	69.8	-	95	12+	43	1+	6	0	[illegible]	[illegible]	3.65		2.50	[illegible]	[illegible]	.0	[illegible]	8.7	W	[illegible]	W	23	7	[illegible]	13	6.1	73
Youngstown	[illegible]	974.9	1017.1	78	56	66.7	-1.3	[illegible]	14	44	1+	2	0	57	75	[illegible]	1.20	1.33	14	[illegible]	.0	0	9.2	SW	*30	N	24	8	12	[illegible]	5.8	--
OKLAHOMA																																
Oklahoma City	1280	970.5	1013.1	89	67	[illegible]	.6	100	30	54	1	15	0	[illegible]	[illegible]	[illegible]	-1.47	[illegible]	7	8	.0	0	13.6	SSE	42	NE	27	16	[illegible]	[illegible]	4.4	82
Tulsa	672	990.2	1014.0	90	[illegible]	78.8	1.3	102	27	[illegible]	2	16	[illegible]	[illegible]	67	2.03	-3.12	1.22	7	[illegible]	.0	[illegible]	9.2	SSE	[illegible]	NW	[illegible]	9	[illegible]	[illegible]	5.5	64
OREGON																																
Astoria	[illegible]	1018.3	1019.1	[illegible]	49	55.2	-2.4	70	[illegible]	42	21	0	0	50	82	4.64	1.98	1.59	18	[illegible]	.0	0	7.0	NW				1	7	[illegible]	8.4	-
Burns (L)	[illegible]	873.0	1014.8	73	42	57.7	[illegible]	[illegible]	27	[illegible]	5	1	1	35	47	.47	-.38	.31	4	1	[illegible]	[illegible]						[illegible]	[illegible]	[illegible]	4.3	
Eugene	[illegible]	1005.[illegible]	1019.1	71	45	58.0	-3.3	85	[illegible]	35	11	0	0		--	1.05	-.32	.39	8	[illegible]	.0	[illegible]	7.9	-	--		-	9	5	[illegible]	6.1	--
Meacham	1050	--	--	64	40	51.6	-2.5	81	27	31	[illegible]	0	2			1.42	-1.19	.47	[illegible]	[illegible]	2.0	2						11	7	12	5.4	
Medford	1312	969.9	1017.2	77	[illegible]	61.8	-3.1	95	27	39	11	3	0	46	[illegible]	.80	-.17	.45	6	0	.0	0	6.4	[illegible]	[illegible]	WNW	10	[illegible]	6	[illegible]	4.3	
Pendleton	1492	962.1	1015.5	76	50	63.2	-3.5	[illegible]	27	43	4+	2	0	42	[illegible]	.56	-.65	.27	[illegible]	2	.0	[illegible]	11.8	W	*62	WNW	[illegible]	[illegible]	9	9	4.9	-
Portland	[illegible]	[illegible]	1018.5	68	50	[illegible]	-3.6	[illegible]	26	46	[illegible]	0	[illegible]	49	[illegible]	2.03	.31	.66	11	1	.0	[illegible]	7.7	WNW	[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	7.7	[illegible]
Roseburg	505	[illegible]	[illegible]	72	[illegible]	58.5	-3.6	[illegible]	27	36	11	0	0	-		1.48	.13	.56	9	1	.0	[illegible]	5.0		[illegible]	N	29	[illegible]	9	11	5.2	58
Salem	195	1010.5	1018.5	71	46	58.5	-4.3	[illegible]	27	[illegible]	24	[illegible]	[illegible]	48	[illegible]	1.20	-.02	.29	11	0	.0	0	7.7	S				8	[illegible]	20	7.0	--
Sexton Summit (R)	3836	-	----	64	[illegible]	53.5	-2.5	[illegible]	[illegible]	[illegible]	4+	0	0			1.01	-.49	.50	9	[illegible]	[illegible]	T		-				15	[illegible]	[illegible]	4.5	
PENNSYLVANIA																																
Allentown	376	1002.3	1016.4	81	58	69.7	.1	[illegible]	13	49	[illegible]+	[illegible]	0	59	71	4.85	[illegible]	2.70	8	6	.0	0	8.6	WSW				[illegible]	[illegible]	[illegible]	5.7	--
Harrisburg	335	1002.5	1016.2	82	60	71.0	-.1	[illegible]	13+	50	[illegible]	4	[illegible]	[illegible]	[illegible]	2.66	-.98	.69	[illegible]	5	[illegible]	[illegible]	6.6	WSW	32	NW	24	7	[illegible]	[illegible]	5.6	70
Philadelphia (L)	26	--	---	81	[illegible]	72.8	.2	94	14+	[illegible]	[illegible]+	3	[illegible]		--	5.45	1.48	1.08	11		0	[illegible]		-								
Philadelphia	10	1011.3	1015.7	82	[illegible]	72.3	.2	95	13+	51	20	[illegible]	0	60	[illegible]	3.86	-.01	1.02	[illegible]	5	.0	[illegible]	7.9	WSW	[illegible]	W	16	6	14	[illegible]	[illegible]	65
Pittsburgh (L)	749	------	--	80	[illegible]	70.4	-1.3	[illegible]	13+	[illegible]	[illegible]+	3	0			4.13	.30	[illegible]	[illegible]		[illegible]								-			[illegible]
Pittsburgh	1151	986.6	1017.1	78	58	67.7	-.9	91	13+	[illegible]	2	2	[illegible]	[illegible]	72	[illegible]	.12	1.12	[illegible]	[illegible]	.0	0	8.8	WSW	*31	NW	[illegible]	[illegible]	9	[illegible]	6.3	[illegible]
Reading (L)	266	1003.5	1015.2	82	62	71.8	.5	96	13+	[illegible]	[illegible]+	[illegible]	[illegible]	-	-	6.03	2.27	1.67	14	[illegible]	.0	[illegible]	8.1	-	[illegible]	NW	24	6	[illegible]	[illegible]	6.2	59
Scranton	940	982.4	1016.5	78	[illegible]	67.1	-.7	92	14	[illegible]	19	3	[illegible]	55	[illegible]	4.68	.25	1.17	11	10	.0	[illegible]	7.6	WSW	43	W	[illegible]	[illegible]	12	11	5.9	61
Shippingport (L)	736	-	------	78	[illegible]	67.0	-	91	13+	43	[illegible]	[illegible]	0	--	-	3.34	[illegible]	1.23	13	4	.0	0	[illegible]	--	[illegible]	W	23	[illegible]	[illegible]	[illegible]	-	
Williamsport	527	997.2	--	82	[illegible]	70.0	[illegible]	[illegible]	13	47	4	9	0	--	[illegible]	3.02	-.40	[illegible]	[illegible]		.0	0	-					6	[illegible]	10	[illegible]	-
RHODE ISLAND																																
Block Island	110	1010.9	1015.0	70	55	62.9	-.1	[illegible]	15+	46	18+	[illegible]	0			1.50	-1.36	.75	[illegible]	3	.0	[illegible]			--		--	[illegible]	[illegible]	13	6.1	--
Providence	55	1009.0	1015.1	77	57	67.1	1.5	94	13+	[illegible]	19	5	0	[illegible]	72	1.57	-1.60	.93	[illegible]	[illegible]	.0	0	10.3	SW	*31	SSW	28	8	[illegible]	[illegible]	5.7	67
SOUTH CAROLINA																																
Charleston (L)	9	-	---	85	72	78.5	-1.1	93	24	[illegible]	3	6	[illegible]			4.97	[illegible]	1.79	[illegible]	[illegible]	.0	[illegible]	9.2		[illegible]	NE	24	5	11	11	6.7	74
Charleston	41	1015.4	1017.2	87	67	76.9	-1.0	95	24	[illegible]	3	9	[illegible]	68	[illegible]	7.69	2.97	2.60	[illegible]	[illegible]	.0	[illegible]	10.6	SW				3	17	[illegible]	6.5	
Columbia	217	1007.9	1016.0	[illegible]	66	[illegible]	-.1	102	23+	[illegible]	[illegible]	21	[illegible]	[illegible]	[illegible]	1.70	-2.35	1.29	[illegible]	10	.0	[illegible]	7.1	SW	[illegible]	[illegible]	[illegible]	7	13	10	5.7	[illegible]
Florence	146	1011.0	--	90	[illegible]	78.2	-.8	100	23	[illegible]	3	20	[illegible]	--	[illegible]	4.90	.20	2.07	10	10	.0	0	-				-	[illegible]	11	[illegible]	5.4	
Greenville	1018	979.6	1016.4	87	65	[illegible]	-.5	96	28	51	3	13	0	[illegible]	61	2.44	-.56	.68	[illegible]	[illegible]	.0	[illegible]	9.5	NE	48	N	29	[illegible]	14	[illegible]	6.7	67
Spartanburg	801	-----	-----	88	[illegible]	76.6	-.6	97	26	51	3	12	0	[illegible]	[illegible]	[illegible]	-.77	[illegible]	[illegible]	[illegible]	.0	0	[illegible]	-	[illegible]	NW	1					-
SOUTH DAKOTA																																
Huron	[illegible]	[illegible]	1011.3	[illegible]	61	75.7	7.5	[illegible]	13	[illegible]	1	[illegible]	[illegible]	57	[illegible]	.96	-2.10	.81	[illegible]	[illegible]	.0	[illegible]	14.2	S	41	SE	4	[illegible]	9	7	4.1	[illegible]
Rapid City	3165	899.1	1010.5	88	[illegible]	72.8	9.1	101	11	[illegible]	1	[illegible]	0	[illegible]	[illegible]	1.32	-2.04	.65	[illegible]	[illegible]	.0	0	10.8	NNW	45	SW	20	[illegible]	[illegible]	[illegible]	4.3	76
Sioux Falls	1420	962.1	1012.4	89	62	75.1	7.1	101	13	[illegible]	1	14	0	[illegible]	[illegible]	6.86	2.61	3.48	10	13	.0	[illegible]	11.5	S	*46	NNE	4	14	10	[illegible]	4.2	
TENNESSEE																																
Bristol	1519	963.9	-----	83	[illegible]	71.3	-1.0	91	13+	42	[illegible]	4	0		-	1.39	-2.28	.51	[illegible]	10	.0	0	-	-				6	10	14	6.3	--
Chattanooga	670	990.0	1017.1	88	63	75.3	-.5	95	23+	41	3	16	0	62	71	1.42	-2.79	.40	12	10	.0	0	5.8	S	39	NW	[illegible]	[illegible]	12	[illegible]	5.6	74
Knoxville	950	982.7	1017.7	86	63	74.6	-1.2	92	10+	43	3	13	[illegible]	62	[illegible]	2.69	-.78	1.07	[illegible]	[illegible]	.0	0	6.4	WSW	[illegible]	SW	23	9	[illegible]	10	5.7	66
Memphis (U)	271	-	-----	86	69	77.4	-1.3	92	11+	54	2	12	0			3.29	.04	1.25	[illegible]		.0	0		--				-	-			
Memphis	263	1002.1	1016.7	87	67	77.3	-1.0	94	8+	54	2+	15	0	64	70	3.71	[illegible]	1.30	[illegible]	6	.0	0	8.9	SE	[illegible]	W	26	[illegible]	10	10	5.4	71
Nashville	577	997.5	1017.2	88	[illegible]	76.1	-.8	95	11+	44	3	16	0	64	70	2.42	-.77	[illegible]	[illegible]	8	.0	0	7.0	S	[illegible]	W	[illegible]	11	10	[illegible]	5.6	78
Oak Ridge (R)	905	984.[illegible]	-----	85	[illegible]	73.5	-2.3	93	11	43	3	[illegible]	0	--	[illegible]	2.28	-1.63	1.11	[illegible]	[illegible]	.0	0	3.3	---	32	--	25	7	[illegible]	[illegible]	5.5	
TEXAS																																
Abilene	1759	952.3	1011.4	97	73	84.7	4.9	104	15	[illegible]	2	28	0	[illegible]	[illegible]	.12	-2.67	.12	1	2	.0	0	13.2	S	[illegible]	E	[illegible]	[illegible]	6	[illegible]	3.3	79

See footnotes at end of table.

Table 2—Continued

State and station		Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
	Elevation (ground)	Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F	°F	°F	°F.		°F		#		°F	%	In.	In.	In.			In.	In.	M p. h.		M p h			0–3	4–7	8–10	0–10	%
TEXAS (Cont'd.)																																
Amarillo	3590	888.3	1010.3	92	64	78.0	4.4	99	16+	58	1+	23	0	56	51	2.03	-1.22	1.27	8	10	0.0	0	16.7	S	50	N	23	15	9	6	4.2	83
Austin	615	992.9	1014.1	96	73	84.4	2.9	102	28+	67	1	28	0	66	60	.94	-2.26	.47	5	4	.0	0	11.5	S	49	SE	19	16	9	5	3.9	71
Brownsville	16	1011.5	1014.0	89	72	80.3	-2.3	96	11	67	10	8	0	72	80	4.02	.66	2.36	8	4	.0	0	12.9	SE	49	S	24	10	16	4	4.7	73
Corpus Christi	41	1013.2	1014.3	91	73	82.2	.0	97	28	65	4	23	0	71	74	.62	-2.26	.30	4	1	.0	0	10.5	SE	27	SE	15	13	15	2	4.2	94
Dallas	487	995.9	1014.0	94	73	83.2	1.3	101	27+	60	2	25	0	65	58	.50	-2.95	.42	3	4	.0	0	14.0	SSE	30	S	16	18	8	4	3.7	77
Del Rio	1091	978.3	1011.7	99	75	87.0	4.3	107	15	72	1+	30	0	61	46	.03	-2.39	.03	1	0	.0	0	13.9	---	37	E	19	17	12	1	3.2	78
El Paso	3920	884.2	1008.7	97	71	83.9	3.7	102	13+	59	18	30	0	45	28	1.19	.57	.81	5	6	.0	0	13.0	SSE	49	NE	10+	20	7	3	3.0	87
Fort Worth	544	993.6	1013.8	94	73	83.3	1.9	103	30	60	2	23	0	64	57	.88	-2.51	.64	4	5	.0	0	13.3	S	*49	NE	8	19	8	3	3.4	--
Galveston (U)	7	- - --	- ---	85	77	81.1	.4	91	9	67	15	1	0	-	--	.90	-2.45	.36	5	-	.0	0	12.1	-	47	NW	15	--	--	--	---	90
Galveston	5	1013.5	1015.8	86	76	81.2	-.6	90	8+	67	15	2	0	70	71	1.94	-1.41	.83	5	6	.0	0	14.4	S	--	---	-	11	13	6	4.7	--
Houston (U)	41	1010.2	-----	91	73	82.0	.2	99	28	64	15	19	0	-		4.41	.33	1.49	8	7	.0	0	9.4	---	38	NE	15	14	11	5	4.4	77
Houston	50	1012.5	1015.1	91	71	80.8	.3	98	9	65	3+	21	0	69	72	4.07	.38	1.42	4	7	.0	0	9.7	SSE	--	- -	-	9	15	6	4.8	--
Laredo	500	997.3	1012.1	99	75	86.9	1.1	106	15	73	3+	30	0	66	57	.34	-1.75	.31	3	2	.0	0	14.9	SSE	*28	ESE	6+	18	10	2	3.4	--
Lubbock	3243	902.1	1010.5	94	66	80.0	3.6	103	16	60	10	26	0	58	52	3.26	.73	1.05	9	12	.0	0	14.8	S	*40	W	2	14	10	6	4.1	--
Midland	2854	914.3	1010.7	96	70	83.0	2.9	106	15	64	1	29	0	55	42	1.40	-.56	1.24	2	4	.0	0	9.7	SSE	*30	NNW	9	16	8	6	3.8	--
Port Arthur	16	1014.9	1016.0	89	70	79.7	-.4	94	8+	63	2+	16	0	70	76	2.04	-2.74	1.05	6	10	.0	0	9.9	S	32	N	9	6	14	10	5.8	66
San Angelo	1903	946.2	1011.8	96	72	84.0	3.4	104	15	64	11	29	0	58	45	.07	-1.75	.04	2	2	.0	0	11.7	S	*29	ENE	8	19	9	2	2.8	--
San Antonio	792	989.2	1013.6	96	73	84.7	2.7	101	15	68	1	30	0	65	58	.27	-2.93	.16	3	2	.0	0	10.9	SSE	31	E	19	14	15	1	3.4	81
Victoria	110	1009.8	1014.2	94	72	83.0	-.1	99	28	67	7	28	0	69	67	1.18	-2.06	.66	7	3	.0	0	10.8	--	%37	ESE	17	12	13	5	4.2	--
Waco	500	993.2	1013.8	95	72	83.8	2.0	100	30	63	2	26	0	66	59	.37	-2.82	.35	3	6	.0	0	14.6	S	--	---	--	9	16	5	4.6	--
Wichita Falls	1020	976.3	1012.2	95	72	83.6	4.0	105	30	61	1	24	0	63	52	1.51	-1.89	.73	6	7	.0	0	12.4	SE	*29	SE	16	17	9	4	3.6	--
UTAH																																
Milford	5028	843.2	1011.0	89	50	69.5	3.7	100	28	40	6+	17	0	--	-	.73	.28	.73	2	2	.0	0	- -	---	—	-	--	20	8	2	2.5	--
Salt Lake City	4220	865.6	1010.6	86	54	69.6	2.5	99	28	43	7+	13	0	39	38	.63	-.28	.59	3	2	.0	0	9.8	SE	29	SE	4+	18	9	3	3.0	92
VERMONT																																
Burlington	331	999.9	1014.5	76	54	64.9	-.6	92	14	38	19	2	0	53	67	2.92	-.65	.85	12	5	.0	0	7.2	S	29	S	21	3	11	16	7.1	61
VIRGINIA																																
Lynchburg	947	983.1	--	83	61	72.1	.7	93	14+	42	3	11	0	--	--	1.65	-2.23	.63	8	6	.0	0	6.5	- -	32	S	26	4	17	9	6.2	61
Norfolk	26	1015.5	1016.7	84	66	75.3	.6	96	14+	55	3	11	0	65	74	2.07	-2.09	1.77	5	8	.0	0	7.8	SW	29	N	19	6	11	13	6.1	70
Richmond	162	1010.7	1016.7	86	63	74.7	.4	96	15+	51	3+	11	0	63	70	3.28	-.59	2.81	8	6	.0	0	6.7	SW	23	SW	26	8	17	5	5.2	73
Roanoke	1174	975.7	1017.4	84	60	72.3	-.4	95	13	43	4	13	0	60	69	1.72	-1.98	1.10	10	10	.0	0	5.8	W	-	---	--	3	16	11	6.3	--
WASHINGTON																																
Olympia	190	1010.5	1018.1	66	47	56.7	-2.2	81	26	38	21	0	0	46	70	2.57	1.29	.70	14	1	.0	0	7.5	SSW	*24	SW	22	3	4	23	8.3	--
Seattle (U)	14	- --	-- --	66	52	58.9	-2.9	79	26	47	11	0	0	--	--	2.66	1.41	.82	13	1	.0	0	9.3	- -	34	SW	10	1	10	19	8.1	29
Seattle	14	1017.3	1018.1	-	--	---	- -	--	-	-	- -	-	- -	48	69	---	----	---	-	--	-		7.8	S	-	-	--	-	--		-	--
Seattle-Tacoma	376	1004.4	1018.7	65	49	56.9	-3.0	77	26	42	11	0	0	48	76	2.47	1.17	.52	11	0	.0	0	12.3	SW	*30	SW	4+	1	5	24	8.5	--
Spokane	2357	946.2	1015.0	71	47	58.9	-2.5	85	27	38	11	0	0	41	55	1.18	.01	.56	8	2	.0	0	10.0	SSW	36	SW	10	5	16	9	6.2	59
Stampede Pass (R)	3958	880.1	1019.0	53	38	45.6	-4.8	68	26	32	4+	0	3	-	--	3.59	-.38	.73	18	1	1.0	41		---	--	-	--	1	5	24	8.7	--
Tatoosh	101	1014.9	1018.1	57	50	53.3	-.7	61	18	47	7+	0	0	49	87	6.31	3.73	2.45	22	0	.0	0	11.4	W	46	S	8	3	3	24	8.4	28
Walla Walla (U)	949	979.3	1014.9	76	53	64.6	-3.3	93	27	45	4	1	0	-	--	.74	-.47	.35	6	0	.0	0	-- -	---	--	--	--	12	7	11	5.0	--
Yakima	1061	976.3	1015.1	75	47	61.3	-4.1	91	27	36	5	1	0	43	51	1.81	1.22	1.21	8	3	.0	0	7.4	NNW	-	---	-	10	6	14	5.8	--
WEST VIRGINIA																																
Charleston	950	981.8	1017.1	81	59	70.0	-2.0	90	13+	41	4	2	0	60	75	2.70	-1.23	.60	11	7	.0	0	4.8	SW	22	SE	14	4	11	15	6.8	--
Elkins	1970	- --	---	77	53	64.9	-1.6	87	13+	40	4	0	0	57	--	5.95	.69	1.95	13	8	.0	0	4.8	---	18	WNW	28	5	10	15	6.9	--
Huntington (U)	565	- --	----	84	61	72.3	-1.8	94	13	46	4	8	0	--		3.07	-1.27	1.58	10	-	.0	0	- --	---	--	- -	--	--	--	--	---	--
Parkersburg (U)	615	-----	----	81	60	70.9	-1.5	93	13	47	3	5	0	-	--	3.39	-.79	1.28	12	7	.0	0	4.1	--	27	SW	26	11	10	9	5.4	67
WISCONSIN																																
Green Bay	689	992.6	1015.2	78	54	66.0	1.3	93	13	33	2	2	0	57	76	3.90	.33	1.44	12	9	.0	0	9.6	SW	37	NW	27	11	9	10	5.1	69
La Crosse	652	989.8	1014.1	84	62	73.3	4.7	97	13	42	2	10	0	60	62	2.75	-1.12	1.30	8	8	.0	0	10.5	SE	*24	WNW	27	13	11	6	4.7	--
Madison	857	980.4	1015.1	85	59	71.8	4.4	96	10	35	2	10	0	57	63	3.24	-.78	1.52	7	8	.0	0	9.6	S	40	W	27	13	8	9	4.7	88
Milwaukee	672	990.9	1015.7	79	58	68.7	3.8	95	12+	38	2	5	0	57	68	3.87	.65	1.66	7	7	.0	0	11.2	SSW	52	W	20	14	7	9	4.5	73
WYOMING																																
Casper	5322	836.1	1008.8	85	51	68.3	6.3	95	12+	41	22+	9	0	39	30	.03	-1.45	.02	2	6	.0	0	14.2	WSW	*51	WSW	5	19	5	6	3.4	--
Cheyenne	6131	812.4	1011.0	83	52	67.2	6.9	94	13	42	7	5	0	38	79	.99	-1.11	.36	7	16	.0	0	12.7	W	54	SE	15	14	14	2	3.9	73
Lander	5563	834.7	1010.8	83	51	67.1	5.6	92	12+	39	22	7	0	36	34	T	-1.35	T	0	3	.0	0	8.2	---	42	SW	15	18	11	1	3.3	87
Sheridan	3942	881.8	1010.7	83	52	67.2	5.8	96	20	43	7+	5	0	46	49	1.07	-1.53	.58	3	9	.0	0	8.7	WNW	42	NW	27	16	11	3	3.5	80
PACIFIC AREA																																
Canton Island	9	1009.8	1010.3	88	78	82.6	-1.7	90	9	74	23	1	0	73	76	1.71	-1.09	.58	7	0	.0	0	---	- -	--	---	--	7	13	10	5.8	--
Hilo	31	1016.9	1018.3	81	66	73.5	-.9	83	16+	61	26	0	0	66	81	9.78	3.03	1.22	27	0	.0	0	8.2	WSW	*27	ENE	5	0	11	19	8.2	33
Honolulu	7	1017.6	1017.9	82	71	76.7	-1.2	84	6+	69	15	0	0	64	67	.14	-.09	.03	10	0	.0	0	14.2	ENE	37	NE	12	4	17	9	6.3	67
Koror (R)	94	1006.1	1010.1	88	75	81.5	.3	90	4+	71	13	3	0	76	85	15.71	3.26	5.41	22	7	.0	0	---	---	--	---	--	0	6	24	8.7	--
Lihue	115	1013.5	1018.8	83	71	76.9	.7	84	8+	69	5+	0	0	67	73	.98	-.67	.21	20	0	.0	0	13.9	ENE	26	NE	11+	0	12	18	7.7	42
Majuro	10	1009.5	1009.8	85	77	80.7	---	87	10+	74	1+	0	0	75	83	11.50	----	1.71	22	5	.0	0	----	---	--	---	--	0	12	18	8.1	--
Ponape (R)	118	1004.7	1010.2	87	73	79.9	-1.1	89	12+	70	8	0	0	75	88	13.41	-2.96	2.17	28	6	.0	0	-- -	-	--	--	-	0	8	22	8.5	--
Wake Island	11	1014.2	1014.6	86	76	81.3	.0	88	4+	72	4+	0	0	73	78	1.52	-.28	.29	21	1	.0	0	14.0	E	-	- -	-	11	10	9	5.3	--
Yap (R)	53	1007.5	1010.0	89	75	81.8	-.3	92	11+	72	7	10	0	76	83	11.45	1.06	1.66	22	1	.0	0	- -	--	--	---	--	0	6	24	8.9	--
WEST INDIES																																
San Juan, P.R. (U)	47	--	--	83	74	78.9	-.6	90	7	69	16	2	0	-		11.44	6.28	3.32	18	5	.0	0	---	---	--	---	--	--	--	--	- -	--
San Juan, P. R.	15	1014.4	1016.5	86	72	79.1	--	90	7+	69	20	2	0	72	81	9.30	- --	2.45	20	6	.0	0	10.3	ENE	32	NE	15	3	13	14	6.8	64
ALASKA																																
Anchorage	92	1006.4	1011.5	60	45	52.4	-1.3	69	26	41	15	0	0	39	60	.52	-.37	.25	5	0	.0	0	7.7	S	*21	S	11+	0	5	25	8.8	39
Annette	110	1010.5	1014.7	56	46	51.2	-3.1	69	13	43	7+	0	0	44	80	10.40	5.62	2.74	20	0	.0	0	11.3	SSE	*35	SE	8	2	3	25	8.7	—
Barrow	22	1014.2	1014.9	34	27	30.6	-3.3	55	27	14	1	0	28	28	90	.29	.01	.16	5	0	.5	5	11.5	ENE	28	E	3	2	2	26	8.7	--
Bethel	10	1008.1	1009.5	59	44	51.5	-1.1	74	7	37	1+	2	0	43	74	.30	-.90	.15	7	0	.0	0	9.7	NW	*23	SSE	2+	1	8	21	8.5	--
Cold Bay	90	1007.8	1011.6	49	38	43.4	-2.3	55	9	33	23	0	0	39	85	2.40	-.24	1.02	9	0	T	0	15.9	SSE	*53	SSE	2	0	6	24	8.9	--
Cordova	40	1010.8	1012.7	55	39	46.8	-2.5	68	15	30	6	0	3	44	86	1.76	-2.43	.44	13	0	.0	T	4.6	E	*21	WNW	8	0	2	28	9.5	--
Fairbanks	436	991.5	1008.5	69	46	57.7	-1.6	80	29	37	3	17	0	45	63	1.02	-.35	.48	11	2	.0	0	7.0	N	*29	ESE	14	2	7	21	7.6	—
Juneau	15	1011.9	1012.6	59	41	50.0	-3.6	71	14	33	1+	1	0	41	72	3.42	.24	1.10	15	0	.0	0	8.6	N	30	SE	8	4	6	20	7.9	32
King Salmon	44	1008.5	1010.3	56	39	47.0	-4.1	70	10	30	1+	1	4	40	78	.88	-.70	.29	12	0	.0	0	11.1	SSW	*35	E	11	--	--	--	8.7	--
Kotzebue	10	1010.5	1011.1	49	36	42.2	-1.1	68	11	26	2	0	9	38	85	.01	-.48	.01	1	0	T	T	12.6	W	*36	NW	22	8	11	11	5.6	—
McGrath	334	996.6	1009.3	64	45	54.6	-1.1	74	10	32	1	10	1	41	61	1.58	-.48	.87	13	3	.0	0	5.1	W	*18	SSW	22	0	7	23	8.4	--
Nome	13	1009.8	1010.4	55	41	48.1	2.3	71	11	29	1	1	3	39	71	.72	-.36	.33	4	0	T	0	8.0	SW	25	E	3	7	11	12	6.2	64
Northway	1713	945.8	1008.5	64	42	53.2	-2.5	72	15+	34	3	4	0	--	--	1.58	-.42	.72	11	3	.0	0	----	---	--	---	--	0	7	23	8.4	--
St. Paul Island	22	1008.8	1010.0	42	34	38.4	-3.1	49	25	27	8	0	8	36	92	1.77	.46	.47	18	0	T	T	----	---	--	---	--	0	2	28	9.5	--
Yakutat	28	1011.9	1013.1	53	40	46.7	-2.8	63	14	30	3	0	2	43	83	3.79	-1.17	1.05	16	0	.0	0	6.9	ESE	*31	SE	16	2	4	24	8.6	--

Data from airport unless otherwise specified U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates.

% Peak gust.

a Maximum hourly average

Ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication

# Number of days maximum 70° or above for Alaskan stations.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

Table 5A (Base 65°) 1955 - 1956

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
ALABAMA														
Birmingham	0	0	0	185	450	607	719	366	354	173	5	7	2866	2780
Mobile	0	0	0	74	278	370	489	191	183	63	0	0	1648	1612
Montgomery	0	0	0	132	354	513	623	268	274	116	0	0	2280	2137
ARIZONA														
Flagstaff	105	22	219	480	857	958	979	1114	864	723	406	121	6848	7525
Phoenix (U)	0	0	0	0	151	232	219	365	94	47	0	0	1108	1492
Phoenix	0	0	0	1	181	278	271	402	131	55	0	0	1319	1698
Prescott	0	0	40	129	559	693	699	841	547	422	110	0	4040	4533
Tucson	0	0	0	0	198	288	268	468	167	84	0	0	1473	1776
Winslow	0	0	12	139	612	725	725	958	564	372	64	0	4171	4702
Yuma	0	0	0	0	96	202	178	292	72	25	0	0	865	951
ARKANSAS														
Ft. Smith	0	0	0	145	507	769	842	576	407	214	10	4	3474	3188
Little Rock	0	0	0	124	459	693	769	506	386	167	12	0	3116	2982
Texarkana	0	0	0	98	395	600	652	393	334	128	7	0	2607	2362
CALIFORNIA														
Bakersfield	0	0	0	30	331	383	423	494	246	133	26	0	2066	2115
Bishop	0	0	66	198	581	793	793	788	514	357	143	3	4236	4222
Blue Canyon	110	1	163	271	700	903	955	931	780	617	428	191	6050	5719
Burbank	0	0	4	47	185	332	324	392	175	207	91	1	1758	1808
Eureka (U)	291	352	298	386	451	451	487	573	540	458	356	293	4936	4632
Fresno	0	0	1	53	426	455	517	558	340	183	49	4	2586	2532
Los Angeles (U)	0	0	6	58	144	279	271	338	150	191	74	0	1511	1451
Los Angeles	3	0	12	92	167	283	316	351	189	182	95	9	1699	2015
Mt. Shasta (R)	108	6	192	362	798	893	940	936	750	505	345	188	6023	5913
Oakland	139	116	116	169	354	428	485	504	409	301	185	112	3318	3163
Red Bluff	0	0	3	47	395	519	552	538	341	179	84	0	2658	2546
Sacramento (U)	2	0	7	49	361	452	512	486	297	189	70	6	2431	2600
Sacramento	1	0	14	68	397	475	535	515	333	197	68	5	2608	2822
Sandberg (R)	26	0	62	141	497	677	635	764	568	506	309	72	4257	4243
San Diego	0	0	1	54	154	236	290	327	208	182	57	[illegible]	1517	1574
San Francisco (U)	246	256	181	176	273	362	405	390	346	310	235	187	3367	3069
San Francisco	170	163	130	175	325	406	461	486	405	318	208	131	3378	3421
San Jose	32	18	34	98	320	396	403	459	334	234	108	45	2481	2410
Santa Maria	196	129	149	179	318	374	436	530	384	366	228	191	3480	2934
COLORADO														
Alamosa	41	35	274	640	1040	1239	1295	1293	1002	742	354	62	8017	8659
Colorado Springs	0	1	134	369	886	920	1036	1107	838	622	203	1	6117	6254
Denver	0	2	126	336	858	911	955	1072	764	581	143	0	5748	6132
Grand Junction	0	0	33	279	888	900	870	982	695	372	71	0	5090	5796
Pueblo	0	0	80	296	804	887	1088	1070	747	473	98	0	5543	5709
CONNECTICUT														
Bridgeport	0	0	61	229	657	1143	1053	896	922	587	304	24	5876	5896
Hartford	0	8	129	354	754	1256	1113	986	1066	653	340	37	6696	6139
New Haven	0	5	93	285	693	1177	1073	927	959	617	335	39	6203	6026
DELAWARE														
Wilmington	0	0	45	226	645	1081	1021	790	810	456	199	13	5286	4910
DISTRICT OF COLUMBIA														
Washington (U)	0	0	13	169	573	951	926	677	655	335	115	13	4427	4258
Washington	0	0	15	182	578	968	937	685	668	360	121	15	4529	4333
FLORIDA														
Apalachicola (U)	0	0	0	28	164	319	454	141	163	35	0	0	1304	1307
Daytona Beach	0	0	0	21	87	193	381	128	137	40	0	0	987	868
Fort Myers	0	0	0	0	32	84	209	38	53	2	0	0	418	405
Jacksonville (U)	0	0	0	22	136	314	404	94	130	27	0			1113
Jacksonville	0	0	0	26	154	330	454	127	155	38	0	0	1284	1243
Key West (U)	0	0	0	0	0	2	27	0	2	0	0	0	31	77
Miami (U)	0	0	0	0	10	24	135	15	30	0	0	0	214	173
Miami	0	0	0	0	7	17	132	9	23	0	0	0	188	178
Miami Beach	0	0	0	0	5	9	97	3	6	0	0	0	120	123
Orlando	0	0	0	11	62	152	305	80	85	7	0	0	702	650
Pensacola (U)	0	0	0	56	226	329	475	162	183	43	0	0	1474	1435
Tallahassee	0	0	0	78	240	368	496	179	200	72	0	0	1633	1519
Tampa	0	0	0	6	63	154	298	56	76	5	0	0	658	674
West Palm Beach	0	0	0	0	12	29	178	21	32	0	0	0	272	248
GEORGIA														
Athens	0	0	0	167	443	702	712	463	386	202	20	3	3098	2800
Atlanta	0	0	0	138	433	664	724	396	348	164	9	6	2882	2826
Augusta	0	0	0	138	396	611	682	335	319	164	8	0	2653	2138
Columbus	0	0	0	152	370	551	639	312	318	145	3	2	2492	2396
Macon	0	0	1	114	345	540	598	288	269	105	0	1	2261	2049
Rome	0	0	0	239	512	724	789	461	417	235	10	9	3396	3138
Savannah	0	0	0	87	283	507	568	205	253	97	1	0	2001	1710
IDAHO														
Boise	44	0	192	363	875	912	970	1085	710	424	225	92	5892	5890
Lewiston	41	1	184	400	932	1018	989	1066	705	344	205	101	5986	5483
Pocatello	40	0	220	472	960	1026	1120	1308	900	555	253	91	6945	6976
ILLINOIS														
Cairo (U)	0	0	0	186	564	857	942	614	479	236	35	6	3919	3756
Chicago (U)	0	0	34	264	811	1141	1085	984	859	528	231	58	5995	
Chicago	0	0	43	300	864	1205	1123	1025	878	532	212	35	6217	6310
Chicago University	0	0	47	287	846	1184	1116	1008	882	550	247	68	6235	
Moline	0	0	71	356	914	1259	1305	1096	890	537	155	26	6609	6364
Peoria	0	0	41	331	874	1194	1208	1014	801	491	124	26	6104	6087
Springfield	0	0	35	310	806	1121	1204	953	730	464	120	23	5766	5693
INDIANA														
Evansville	0	0	8	258	682	971	1040	703	619	371	73	26	4751	4360
Ft. Wayne	0	2	64	334	861	1185	1226	1020	889	538	225	44	6388	6287
Indianapolis	0	0	29	322	820	1119	1164	906	763	483	162	42	5810	5611
South Bend	0	2	92	338	877	1206	1214	1090	931	584	272	53	6659	6524
IOWA														
Burlington	0	0	56	339	919	1221	1297	1077	822	508	125	21	6385	6101
Des Moines	0	1	70	347	1008	1343	1392	1137	916	523	149	11	6897	6446
Dubuque	0	6	102	425	1015	1425	1404	1235	1038	621	242	32	7545	7271
Keokuk (U)	0	0	31	278	805	1103	1189	970	737	436	83	10	5642	
Sioux City	0	0	97	340	1078	1444	1489	1251	967	587	154	9	7416	7012
KANSAS														
Concordia (U)	0	0	56	240	819	1159	1238	1019	718	449	94	5	5797	5323
Dodge City	0	0	63	190	765	999	1033	976	614	439	87	0	5166	5058
Goodland	0	0	130	324	901	1113	1123	1074	805	590	147	0	6207	6367
Topeka (U)	0	0	28	211	771	1068	1191	898	632	395	59	6	5259	4919
Topeka	0	0	26	241	791	1074	1214	925	655	425	59	10	5420	5209
Wichita	0	0	17	198	716	980	1094	848	602	379	52	4	4890	4571

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

Table 3A-Continued

(Base 65°)

1955 - 1956

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
KENTUCKY														
Lexington	0	0	1	264	696	968	1031	703	660	410	114	33	4883	4979
Louisville	0	0	4	230	653	919	999	680	584	348	90	30	4537	4439
Pikeville (U)	0	0	0	181	554	870	939	538	498	308	23	17	3928	
LOUISIANA														
Baton Rouge	0	0	0	67	251	333	448	215	180	62	0	0	1556	1595
Lake Charles	0	0	0	30	229	304	388	197	157	37	0	0	1342	1543
New Orleans (U)	0	0	0	17	189	301	391	148	103	28	0	0	1177	1175
New Orleans	0	0	0	50	207	314	414	170	124	40	0	0	1319	1317
Shreveport	0	0	0	79	351	493	569	319	267	111	0	0	2189	2117
MAINE														
Caribou	50	85	379	649	1022	1667	1348	1492	1427	865	653	202	9839	10173
Greenville (U)	29	67	316	628	1010	1631	1364	1376	1428	883	625	173	9530	
Portland	5	42	246	501	861	1448	1161	1166	1213	743	516	141	8043	7681
MARYLAND														
Baltimore (U)	0	0	24	167	600	958	903	679	663	335	115	4	4448	4203
Baltimore	0	0	34	224	648	1037	995	758	749	414	172	18	5049	4787
Frederick	0	0	74	304	726	1089	1069	829	808	469	216	24	5608	4854
MASSACHUSETTS														
Blue Hill Obs. (R)	2	16	156	399	800	1290	1181	1043	1077	699	413	85	7161	
Boston	0	5	85	307	685	1181	1057	936	966	575	304	54	6155	5791
Nantucket	7	17	126	299	634	1122	988	902	931	671	501	136	6334	6102
Pittsfield	1	37	242	473	887	1433	1330	1165	1202	761	460	95	8086	7694
MICHIGAN														
Alpena (U)	5	18	227	431	942	1302	1330	1220	1226	800	487	140	8128	8073
Detroit	0	2	80	304	811	1165	1190	1061	1003	573	310	61	6560	6404
Detroit (Willow Run)	0	1	93	326	846	1179	1225	1067	988	569	291	59	6644	6469
East Lansing (U)	0	2	112	327	884	1215	1260	1122	1048	607	302	58	6937	
Escanaba (U)	7	25	220	461	995	1388	1373	1318	1284	853	531	126	8581	8657
Grand Rapids	0	4	142	344	886	1219	1255	1166	1076	627	316	62	7097	7075
Marquette (U)	22	29	260	476	1026	1381	1300	1229	1227	852	560	159	8521	8529
Muskegon	0	2	153	344	868	1203	1236	1141	1091	672	366	72	7148	7089
S. Ste. Marie	12	34	334	517	1049	1477	1498	1348	1381	902	633	172	9357	9475
MINNESOTA														
Duluth (U)	22	27	281	610	1273	1716	1591	1530	1360	913	549	200	10072	9574
Duluth	24	29	313	609	1314	1751	1625	1560	1406	930	526	156	10243	9937
International Falls	24	43	383	652	1419	1923	1756	1723	1527	971	578	77	11076	10600
Minneapolis	0	2	136	423	1173	1631	1615	1444	1205	686	246	12	8573	7853
Rochester	0	9	176	477	1154	1613	1625	1499	1250	729	278	26	8836	8095
St. Cloud	0	7	236	523	1285	1764	1742	1594	1331	788	322	25	9617	8893
MISSISSIPPI														
Jackson	0	0	0	135	385	517	635	314	310	133	0	3	2432	2202
Meridian	0	0	0	150	398	528	647	304	285	132	1	5	2450	2333
Vicksburg (U)	0	0	0	81	353	476	590	289	260	86	0	0	2135	2000
MISSOURI														
Columbia	0	0	31	239	742	1031	1121	882	647	399	75	15	5182	5113
Kansas City	0	0	18	182	740	1020	1143	877	613	377	52	5	5027	4888
St. Joseph	0	0	34	270	863	1142	1241	978	731	444	77	10	5790	5336
St. Louis (U)	0	0	3	215	650	945	1060	776	589	336	66	0	4649	4469
St. Louis	0	0	9	230	692	979	1101	811	615	368	74	12	4891	4699
Springfield	0	0	4	249	695	958	1071	775	606	383	62	16	4819	4693
MONTANA														
Billings	22	0	240	368	1223	1305	1331	1155	908	704	286	16	7558	7106
Glasgow	20	6	282	469	1516	1762	1837	1594	1196	782	315	34	9813	8690
Great Falls	88	8	300	444	1364	1318	1363	1198	960	700	341	94	8178	7555
Havre (U)	56	6	327	498	1539	1605	1681	1436	1008	716	299	55	9226	8213
Helena	93	7	330	532	1355	1427	1495	1344	971	687	331	113	8685	8250
Kalispell	130	68	363	644	1264	1364	1320	1299	1053	638	327	233	8703	8055
Miles City	2	2	214	407	1381	1526	1683	1365	925	695	263	10	8473	7850
Missoula	117	19	324	587	1217	1370	1302	1286	1019	566	296	186	8289	7873
NEBRASKA														
Grand Island	0	1	98	335	980	1358	1371	1159	864	613	168	8	6955	6311
Lincoln (U)	0	0	63	269	914	1233	1303	1083	797	499	111	7	6279	5865
Norfolk	0	0	113	381	1087	1481	1501	1293	949	645	173	11	7634	7065
North Platte	0	0	152	437	1063	1354	1288	1147	855	687	183	5	7171	6546
Omaha	0	0	65	305	964	1284	1354	1121	841	502	114	7	6557	6160
Scottsbluff	0	2	160	430	1038	1210	1175	1136	878	695	192	0	6916	6841
Valentine (U)	0	6	156	430	1162	1458	1405	1318	980	751	241	6	7913	7075
NEVADA														
Elko	47	4	265	545	1034	1173	1062	1290	877	601	356	152	7406	7335
Ely	66	2	263	542	994	1121	1019	1312	901	704	444	146	7514	7443
Las Vegas	0	0	0	17	350	520	497	553	268	105	8	0	2318	2425
Reno	50	8	201	437	762	905	952	1077	723	556	309	123	6103	6036
Tonopah	1	0	125	305	763	940	907	973	712	481	217	27	5451	5813
Winnemucca	49	4	244	476	920	995	933	1047	813	545	309	146	6481	6369
NEW HAMPSHIRE														
Concord	0	23	210	502	857	1446	1216	1144	1218	748	443	81	7888	7612
Mt. Washington	351	416	772	1042	1422	1992	1560	1706	1773	1352	1166	591	14143	
NEW JERSEY														
Atlantic City (U)	0	0	25	157	563	992	978	741	768	533	284	37	5078	4741
Newark	0	0	45	207	639	1101	1013	833	864	516	218	19	5455	5252
Trenton (U)	0	0	52	207	634	1095	1014	806	832	476	209	16	5341	5068
NEW MEXICO														
Albuquerque	0	0	1	139	590	764	736	836	483	288	20	0	3857	4389
Clayton	0	0	63	253	742	777	896	898	660	443	77	0	4809	5138
Roswell	0	0	0	134	500	692	703	795	384	222	6	0	3436	3424
NEW YORK														
Albany	0	12	174	387	821	1377	1279	1123	1145	667	370	40	7395	6962
Binghamton	0	14	197	421	906	1396	1356	1152	1180	722	443	81	7868	7537
Buffalo	0	3	137	338	783	1229	1243	1061	1062	652	376	71	6955	6838
New York (U)	0	0	30	182	627	1069	995	814	836	506	261	20	5340	5050
New York	0	0	21	146	591	1058	991	805	828	493	214	14	5161	4989
Rochester	0	9	169	357	812	1251	1296	1101	1118	677	407	72	7269	6863
Schenectady	0	4	133	350	783	1300	1227	1062	1074	620	308	29	6890	
Syracuse	0	6	141	341	790	1333	1307	1095	1123	656	387	49	7228	6520
NORTH CAROLINA														
Asheville (U)	0	0	11	272	605	845	937	584	550	389	58	40	4291	4072
Asheville	0	0	20	328	656	902	964	614	574	346	69	33	4506	
Charlotte	0	0	1	155	442	748	737	490	430	224	28	2	3257	3205
Greensboro	0	0	12	230	538	890	880	617	554	320	69	22	4132	3810
Hatteras (R)	0	0	0	49	287	645	777	412	418	217	40	0	2845	2392
Raleigh	0	0	5	191	500	850	802	548	506	275	65	9	3751	3369

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

Table 3A-Continued

(Base 65°)

1955 - 1956

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
NORTH CAROLINA (Cont'd.)														
Wilmington	0	0	0	104	349	659	708	347	351	169	25	0	2712	2323
Winston-Salem	0	0	13	179	510	861	837	597	530	288	60	22	3897	3721
NORTH DAKOTA														
Bismarck	9	7	252	501	1494	1820	1867	1618	1281	819	308	13	9989	9033
Devils Lake (U)	14	20	325	591	1520	1955	1936	1739	1527	1000	406	31	11064	9940
Fargo	3	10	231	534	1376	1845	1826	1714	1406	895	361	13	10214	9274
Grand Forks	7	13	300	591	1447	1932	1931	1825	1527	970	396	28	10967	
Pembina	3	18	286	589	1407	1955	1938	1534	1520	973	406	28	10657	
Williston (U)	26	11	279	518	1497	1778	1800	1516	1194	815	338	26	9798	9068
OHIO														
Akron	0	3	82	387	833	1194	1217	1006	946	596	303	73	6640	6203
Cincinnati (U)	0	0	7	205	648	919	1002	702	625	368	92	24	4592	4532
Cincinnati	0	0	17	282	739	1019	1104	789	719	460	135	37	5301	5195
Cleveland	0	1	52	320	785	1127	1151	967	891	566	265	69	6194	6006
Columbus	0	0	29	302	748	1075	1152	845	786	495	186	42	5660	5615
Dayton	0	0	29	314	793	1102	1193	894	811	515	184	41	5876	5597
Sandusky (U)	0	0	36	290	778	1123	1186	979	903	530	265	59	6149	5859
Toledo	0	3	92	347	843	1289	1266	1040	961	575	271	55	6742	6394
Youngstown	0	7	110	392	830	1185	1221	1011	956	596	321	78	6707	6172
OKLAHOMA														
Oklahoma City	0	0	5	151	595	849	888	700	464	257	14	0	3923	3644
Tulsa	0	0	0	129	560	816	905	653	429	245	29	0	3766	3584
OREGON														
Astoria	215	199	250	388	658	720	712	763	683	488	335	289	5700	4995
Burns (U)	105	8	262	475	962	1107	1202	1197	870	536	319	228	7271	6918
Eugene	115	70	189	377	650	702	712	798	636	430	265	206	5150	4779
Meacham	230	89	344	578	1092	1150	1135	1187	983	652	452	397	8289	7888
Medford	51	4	140	303	642	723	747	795	643	339	205	116	4708	4547
Pendleton	41	1	158	372	895	976	953	1054	660	330	181	97	5718	5204
Portland (U)	69	24	106	282	656	729	693	793	589	309	161	135	4546	4143
Portland	80	33	173	346	701	793	770	838	639	364	201	174	5112	4632
Roseburg	94	30	173	341	569	665	716	758	595	397	247	195	4780	
Salem	96	55	172	358	652	731	736	805	647	405	213	200	5070	4574
Sexton Summit (R)	236	82	275	442	792	912	968	951	876	567	416	346	6863	6217
PENNSYLVANIA														
Allentown	0	1	100	299	750	1209	1103	927	928	548	278	26	6169	5880
Harrisburg	0	0	67	257	718	1124	1015	850	824	484	202	19	5560	5258
Philadelphia (U)	0	0	16	156	551	1010	954	764	795	462	163	7	4878	4523
Philadelphia	0	0	32	200	626	1061	1011	790	808	456	170	11	5165	4866
Pittsburgh (U)	0	0	30	275	693	1013	1050	808	759	466	184	44	5322	5048
Pittsburgh	0	2	59	361	775	1115	1149	897	857	540	242	66	6063	5905
Reading (U)	0	0	56	213	657	1092	995	815	820	465	197	13	5323	5060
Scranton	0	0	133	340	813	1277	1222	1007	1033	602	338	47	6812	6047
Williamsport	0	0	105	340	793	1207	1115	959	923	520	280	35	6277	5898
RHODE ISLAND														
Block Island	0	2	74	261	629	1115	1015	904	948	671	464	104	6187	5843
Providence	0	11	116	326	711	1219	1066	941	986	625	365	52	6418	6125
SOUTH CAROLINA														
Charleston (U)	0	0	0	42	225	508	557	228	235	87	4	0	1886	1769
Charleston	0	0	0	104	323	549	610	245	275	117	6	0	2229	1973
Columbia	0	0	0	131	380	648	683	370	333	154	9	0	2708	2435
Florence	0	0	0	106	381	667	672	345	325	147	16	0	2659	2507
Greenville	0	0	2	162	442	740	739	503	417	212	29	6	3252	3060
Spartanburg	0	0	1	157	436	760	745	495	413	219	31	3	3260	3044
SOUTH DAKOTA														
Huron	0	3	169	448	1269	1726	1732	1618	1187	757	232	10	9151	7902
Pierre	0	0	155	409	1268	1688	1642	1458	1079	742	221	6	8668	
Rapid City	0	0	184	415	1203	1331	1294	1180	953	774	270	0	7604	7535
Sioux Falls	0	3	164	418	1212	1639	1663	1486	1155	719	221	11	8691	7848
TENNESSEE														
Bristol	0	0	0	275	654	922	1010	588	555	366	42	33	4445	4148
Chattanooga	0	0	0	230	536	745	828	465	427	231	10	17	3489	3384
Knoxville	0	0	0	226	567	806	890	506	466	279	14	23	3777	3590
Memphis	0	0	0	158	487	695	806	492	425	185	7	1	3256	3137
Nashville	0	0	0	214	574	785	895	518	479	249	21	18	3753	3513
TEXAS														
Abilene	0	0	0	76	374	576	666	511	245	135	0	0	2583	2657
Amarillo	0	0	32	180	641	731	844	851	540	339	24	0	4182	4345
Austin	0	0	0	24	252	384	445	295	168	32	0	0	1600	1713
Brownsville	0	0	0	0	72	105	118	108	52	0	0	0	455	617
Corpus Christi	0	0	0	1	130	204	228	150	95	4	0	0	812	1011
Dallas	0	0	0	54	347	550	615	434	244	84	0	0	2328	2272
Del Rio	0	0	0	21	236	380	423	269	91	20	0	0	1440	1407
El Paso	0	0	0	34	317	477	468	578	238	132	0	0	2244	2641
Ft. Worth	0	0	0	55	356	553	625	445	260	97	0	0	2391	2361
Galveston (U)	0	0	0	4	148	246	291	188	123	19	0	0	1019	1211
Galveston	0	0	0	9	150	245	303	196	123	18	0	0	1044	1233
Houston (U)	0	0	0	12	190	260	320	209	131	30	0	0	1152	1276
Houston	0	0	0	21	196	290	342	219	141	27	0	0	1236	1388
Laredo	0	0	0	0	132	186	227	150	42	11	0	0	748	781
Lubbock	0	0	4	160	528	633	751	761	413	230	7	0	3487	3587
Midland	0	0	0	74	383	512	604	542	263	146	0	0	2524	
Port Arthur	0	0	0	37	237	297	380	215	164	46	0	0	1376	1517
San Angelo	0	0	0	63	341	492	574	450	223	114	0	0	2257	2107
San Antonio	0	0	0	28	224	359	413	275	140	22	0	0	1461	1579
Victoria	0	0	0	13	172	269	305	197	128	7	0	0	1091	1126
Waco	0	0	0	55	306	478	546	379	214	62	0	0	2040	2025
Wichita Falls	0	0	0	86	456	680	759	572	343	152	0	0	3048	3025
UTAH														
Milford	0	0	140	404	832	923	886	1167	771	519	189	16	5847	6445
Salt Lake City	2	0	120	374	873	858	908	1114	694	446	172	35	5596	5866
VERMONT														
Burlington	3	29	234	435	878	1496	1400	1209	1273	719	470	66	8212	7865
VIRGINIA														
Lynchburg	0	0	21	243	595	950	883	667	606	356	108	37	4466	4153
Norfolk	0	0	0	122	433	837	854	546	527	280	121	[illegible]	3722	3454
Richmond	0	0	9	186	555	928	896	631	578	323	107	10	4223	3955
Roanoke	0	0	21	228	606	947	910	662	588	365	87	36	4450	4152
WASHINGTON														
Olympia	160	134	267	453	770	841	833	865	751	458	248	244	6024	5501
Seattle (U)	97	69	171	366	708	730	714	768	669	378	179	178	5027	4438
Seattle-Tacoma	152	125	243	446	776	818	800	844	741	455	260	238	5898	5275
Spokane	92	14	238	549	1101	1179	1114	1223	890	448	252	191	7291	6852

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°)

Table 3A-Continued

1955 - 1956

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
WASHINGTON (Cont'd.)														
Stampede Pass (R)	430	328	474	773	1235	1322	1298	1281	1159	794	557	576	10227	9149
Tatoosh Island (R)	327	317	324	439	706	750	730	763	725	540	410	342	6373	5724
Walla Walla (U)	25	0	126	318	891	949	931	1062	612	288	158	71	5431	4848
Yakima	61	17	201	483	1008	1244	1161	1218	753	361	154	129	6790	5845
WEST VIRGINIA														
Charleston	0	0	6	261	661	963	1049	665	647	415	112	45	4824	4417
Elkins	0	1	71	414	825	1140	1211	783	799	569	233	84	6130	5773
Huntington (U)	0	0	1	231	620	933	1012	647	615	389	188	34	4670	4073
Parkersburg (U)	0	0	12	274	665	990	1072	737	690	438	144	39	5061	4750
WISCONSIN														
Green Bay	4	20	199	462	1028	1488	1456	1369	1265	764	402	82	8539	8259
La Crosse	0	6	118	410	1057	1531	1527	1371	1198	664	242	21	8145	7650
Madison (U)	0	3	109	404	974	1392	1345	1217	1064	619	269	25	7421	7300
Madison	0	4	133	412	998	1398	1357	1229	1076	637	281	30	7555	7417
Milwaukee	0	3	104	373	939	1308	1234	1153	1036	652	370	67	7239	7205
WYOMING														
Casper	1	0	190	442	1167	1163	1161	1177	979	723	278	23	7304	7638
Cheyenne	1	12	221	470	1035	1041	1113	1222	986	758	310	21	7190	7562
Lander	6	0	229	467	1138	1292	1327	1391	996	681	298	39	7864	8303
Sheridan	21	3	244	432	1238	1345	1352	1256	1027	738	308	34	7998	7903
ALASKA														
Anchorage	226	323	554	1029	1664	1758	1854	1584	1403	904	644	369	12312	10789
Annette	273	328	377	652	992	1120	1000	983	899	661	477	406	8168	7096
Barrow	816	1012	1125	1770	2314	2562	2559	2691	2482	1928	1376	1027	21662	19994
Bethel	345	421	594	1175	1506	1828	2147	1887	1791	1313	732	396	14135	12880
Cold Bay	474	472	558	896	897	1108	1444	1152	1297	1036	814	641	10789	
Cordova	350	430	552	869	1264	1413	1467	1387	1279	891	771	540	11213	9615
Fairbanks	144	362	634	1268	2247	2300	2651	2193	1830	1009	505	215	15358	14158
Juneau	247	396	534	809	1289	1447	1396	1247	1144	780	605	441	10335	8888
King Salmon						1816	2111	1711	1549	1123	728	536		
Kotzebue	346	450	713	1377	1993	2081	2420	2219	2026	1553	872	676	16726	16151
McGrath	234	403	646	1339	2163	2284	2573	2122	1842	1159	645	306	15716	14390
Nome	436	484	692	1262	1678	1822	2134	2011	1895	1429	807	501	15151	14086
Northway	178	432	707	1453	2466	2643	2892	2332	1952	1134	644	348	17181	15506
St. Paul	623	557	649	971	929	1081	1328	1308	1456	1259	992	788	11941	10839
Yakutat	327	411	539	829	1176	1376	1244	1198	1179	855	734	541	10409	9354

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

Note: Table 3, Heating Degree Days, has been discontinued in the June issues of this publication, the data appearing therein being shown in the last three columns of the above Table 3A.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

JUNE 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NORTH CAROLINA Durham County	1	Noon						4	Hail	Tobacco and wheat damaged over 3 square miles.
NORTH CAROLINA Cumnock area, Lee County	1	1 p.m.	1	1,000			3	4	Hail	Roofs and crops damaged; egg-size hailstones reported.
MASSACHUSETTS Worcester, Worcester County	1	2 p.m.			0	0			Tornado	Funnel cloud observed by several persons in northern part of Worcester. It did not come near ground and no damage reported.
MASSACHUSETTS Woronoco, Hampden County	1	2:30-2:40 p.m.				5	5	1	Electrical	Lightning prematurely set off 5,000 pounds of dynamite on Massachusetts Turnpike construction project near Woronoco, 1,000 feet west of Turnpike bridge on U.S. 20, injuring 5 workmen and damaging construction equipment to extent of $100,000. As 25 men were within 300 feet of blast center, it almost seems miraculous that none was killed.
MASSACHUSETTS Central portion	1	2:30-4:20 p.m.	75		0	12	5		Tornadoes, wind, rain, electrical, and hail	Tornado at Westfield 200 yards wide and 1 mile long cut swath through tobacco plantation, leveling 5 curing barns and much shade netting and supports with loss of $175,000. Total loss at Westfield over $250,000, affecting powerlines, 3 automobiles, and over 150 trees. Visible funnel without great violence seen in town center, but main tornado described as cloud on ground with no definite funnel shape. Observer 2 miles north of Chicopee Center, 8 miles northeast of Westfield, saw storm approach as funnel cloud aloft, and end of her home exploded outward as it passed overhead. Total damage in Chicopee area estimated at $15,000, occurring at about 3 p.m. Another storm, possible tornado, struck a few miles eastward of this path, in West Springfield and Springfield, with much damage to trees and powerlines. Rotary motion in direction of felled trees evident, but funnel not seen; time near 3 p.m.; damage estimated at $25,000 in this area. A woman narrowly escaped death in Holyoke when chimney fell on her automobile moments after she left it; damage in Holyoke estimated at $5,000; 0.60 inch of rain fell in 5 minutes. Storm continued northeastward with less violence, but at Hubbardston a 500-pound chicken shelter lifted into air and other buildings upended; hail diameter here 3/4 inch, accompanied by low clouds not described as a funnel; time about 3:30 p.m. Over Fitchburg, circus tent "ballooned up" pulling stakes and collapsing to injure 12 or more of the crowd as storm passed at about 4 p.m. At about 4:20 p.m., barn 200 by 20 feet completely demolished and scattered over 1 acre of land, with loss of livestock $200 and property $5,000. Additional damage by fallen trees, etc., brings total damages to about $10,000. This storm is thought to have been tornado, although no funnel seen, based on hit and skip nature, changes of direction of path, and twisting of debris. Other damages along path across State included many phone and powerlines out and trees felled. Phone services particularly hit at Indian Orchard, Chicopee, West Springfield, Ludlow, Agawam, and East Longmeadow. Many buildings struck by lightning, including homes in Westfield, Feeding Hills, and Holyoke. Hail fell at many points across State, mostly of pea size.
DELAWARE Rehoboth Beach, Sussex County	1	3 p.m.			0	0			Tornado	Residents reported tornado cloud over ocean; cloud movement seemed to be in easterly direction.
CONNECTICUT Litchfield to Windham Counties	1	3:30 p.m.					4	2	Electrical, rain, and wind	Storm struck Winsted in space of 10 minutes. Very heavy rains caused flooding of streets and washouts of exposed soils in new housing project. Many trees and limbs blown down with 30 major interruptions in power. Clock factory damaged by rain after wind blew windows in. No immediate estimate of damage to merchandise. Same storm moving eastward forced small plane down on golf course in darkness at Lebanon, New London County, Conn.; no damage or injuries resulted.
NEBRASKA Chappell (3 miles south of), Deuel County	1	3:30-4 p.m.	5	*1			2	4	Hail	Stones up to 1 inch in diameter.
IDAHO Cottonwood, Idaho County	1	Afternoon							Rain and electrical	Much erosion damage to fields, water covered Highway 95, and lightning knocked out several transformers.
SOUTH CAROLINA Juniper Bay area, Horry County	1	Afternoon			1				Electrical	1 person killed while standing near electrical fence.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
SOUTH CAROLINA Parrish's Mill vicinity, Dillon County	1	Afternoon		*2			1	4	Hail, wind, rain, and electrical	Tobacco and cotton severely damaged. Storm moved eastward.
NORTH CAROLINA Pitt County	1	4:30 p.m.						4	Hail	4 square miles damaged, mostly tobacco.
MAINE East Lebanon, York County	1	4:45 p.m.	1/2	10	0	0	4	1	Tornado, wind, rain, hail, and electrical	Tornado moving eastward destroyed barn and slightly damaged house.
IDAHO Carmen, Lemhi County	1	Late afternoon	1/4		0	0			Tornado (suspected)	Violent whirling wind seemed to dip down, cutting swath through cottonwood trees along Carmen Creek for about 1/4 mile, and was last seen as it ascended mountainside to east.
NEW HAMPSHIRE Nashua area, Hillsboro County	1	9-10 p.m.					4		Electrical and wind	Lightning caused fires with loss of $25,000 to commercial and residential property, including $10,000 in suburban Hollis. Direct lightning damage to power and phone equipment estimated at $2,500, while wind damage to communication lines and small buildings accounted for $2,500. Door blown from garage and carried 100 feet after striking an automobile. Also damage at Hudson.
COLORADO Morgan and Weld Counties	1				0	0			Tornadoes	3 tornadoes sighted, 1 touched ground in open field 8 miles northwest of Hillrose, the other 2 spotted 3 miles south of Stoneham. No damage as tornadoes touched ground only briefly in open country.
NORTH CAROLINA Sampson County	1						4		Electrical	Lightning damage to school.
	1									Minor storms also reported at Bridgeville and Milford, Del.; in southern Maine; and at Ogden and Spartanburg, S.C.
NORTH CAROLINA Alleghany, Surry, and Yadkin Counties	2	1-3 p.m.						4	Hail	Scattered damage over 14 square miles.
ARIZONA Tucson, Pima County	2	Late afternoon			0	0	3	1	Dust devil and wind	Pedestrian claims to have been lifted 4 inches off sidewalk by wind; he grabbed iron bars on window to keep from going higher. He said, "It sounded like a bunch of jet bombers going overhead." Storm moved southwestward.
OKLAHOMA Stephens County	3	1-2:15 a.m.	10	*5	0	0	6	4	Hail, wind, rain, electrical, and tornado (suspected)	Severe hailstorm accompanied by strong winds and heavy rain caused extensive damage in Stephens County from Commanche to Marlow. Hail up to size of hens'eggs caused up to 100 percent damage to crops, gardens, and fruit trees. Severe damage also resulted to roofs and automobiles. Lightning set fire to 2 homes in Duncan and several transformers also burned. Near 5-inch rain in 2 hours caused flooding along creeks and resulted in flooding of about 30 homes and numerous business buildings. Unconfirmed tornado reported southwest of Comanche about 1 a.m. Storm moved northwestward.
OKLAHOMA Oklahoma City, Oklahoma County	3	2:52 a.m.					4	1	Electrical	Lightning caused fire which destroyed feed mill and contents.
OKLAHOMA Caddo, Grady, and Canadian Counties	3	3:55 a.m.	2	880	0	0	5	4	Tornadoes, rain, hail, wind, and electrical	Funnel aloft sighted just east of Anadarko in Caddo County traveling northeastward. Heavy rain and hail up to 1-3/4 inches in diameter reported causing damage estimated at $500 to roofs, neon signs, and an auto windshield. Lightning struck and killed 2 head of cattle near Minco. Next damage noted near Mustang in Canadian County where observers indicated twin funnels on ground just west of Mustang formed a single funnel as tornado went over community at roof-top level. Heavy rain and hail preceded and followed tornado. Damage resulted to 42 of the 60 homes in community, and many outbuildings and barns destroyed or damaged. Hail completely destroyed crops in 6-square mile area.
OKLAHOMA Spencer (near), Oklahoma County	3	A.m.				1	4	1	Electrical and rain	Lightning struck home near Spencer causing fire which resulted in complete destruction. Occupant severely burned fighting fire.
TEXAS Rule, Haskell County	3	4 p.m.	1/4	150	1	1	3		Electrical, wind, rain, and hail	Lightning struck man in open field. Localized heavy rain and hail. Wind damaged cotton-oil mill, compress roof, and cotton gin. Storm moved northwestward.
NEW HAMPSHIRE Sullivan County	3	4:30 p.m.					4	1	Rain	Cloudburst hit Plainfield, Cornish, and Claremont areas and caused 2 washouts on Boston and Maine Railroad roadbed near Cornish, resulting in derailments of 1 train and damage to track. Some highways also washed out.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IDAHO Most of State	3	Afternoon-evening			0	Several	3		Wind, hail, tornado, rain, and electrical	Widespread thunderstorm activity south of Salmon River accompanied in many cases by violent winds and in some cases by hail. Structural damage reported at Challis, Salmon, Gooding, Fairfield, and Hill City. Hail damage to gardens in vicinities of Gooding and Hagerman. Small "twister" reported at West Point, southwest of Gooding. Gale struck Thousand Springs area about 1 p.m., uprooting trees, capsizing boats, and overturning car. Large crowd was gathered for boat races and several persons were injured. Extensive uprooting of trees reported, some at Ketchum, Hailey, Challis, Aberdeen, Idaho Falls, and Warm Lake, but greatest damage along South Fork of Salmon River where more than 2 million board feet of timber downed, most of which could be salvaged. Cold front entering northern part of State toward evening brought heavy showers and damaging winds to communities of Kendrick, Craigmont, and Winchester. Hail did considerable crop damage, rain caused much erosion, highways covered with debris, and lightning did several hundred dollars damage to TV cable system at Kendrick.
ARKANSAS Blevins, Hempstead County	3	P.m.			1				Electrical and rain	Youth killed by lightning while leaning against tree.
	3									Minor storms also reported near St. Francis, Kans.; in Worcester County, Mass.; at Missoula and Virginia City, Mont.; and at Cement, Foraker, and Minnekah, Okla.
SOUTH DAKOTA Eastern portion	3-4	6 p.m. 3d-8 a.m. 4th							Hail and rain	Considerable hail from Sioux Falls to Watertown, some reaching golf-ball size. Deepest drifts at Howard, Volga, and Sioux Falls. 2 farmers northeast of Howard estimated over 12 inches of rain in several hours (from filling of stock tanks). No official gages nearby, but unofficial 6-inch capacity gages overflowed. 250 sheep killed by hail or drowning. Local flooding indicated near-record rainfall.
ARIZONA Benson, Cochise County	4	Afternoon			0	0			Dust devil and wind	Dust devil moving northeastward damaged number of buildings (primarily roof damage) in Benson then reportedly skipped to North Benson where it demolished small house and carport.
IDAHO Southern portion	4	Afternoon-evening			4		2	2	Wind and dust	Trees uprooted and broken, also some structural damage at Gooding, Burley, Pocatello, Mackay, and Ashton. Sudden squall on Cascade Reservoir capsized boat and all 4 occupants drowned. Damaging winds hit Bliss and Gooding between 2 and 2:30 p.m., Pocatello 4:30 to 5:30, and Ashton about 7 p.m. Auto wreck occurred in duststorm north of Blackfoot about 7:20 p.m., with damage estimated at $400.
GEORGIA Hahira, Lowndes County	4	7:15 p.m.	3	50-100	0	0	4	5	Tornado, hail, rain, and electrical	Roofs blown from 3 business buildings and 2 nearby residences. Many trees downed, causing damage to other buildings. Utility lines and TV antennas blown down. Tornado damage extended over area about 2 miles long, but hail destruction covered area about 4 miles wide and 7 miles long. Tobacco hit hardest, but cotton, corn, and all truck crops in affected area almost completely destroyed. Storm moved northwestward, then northeastward.
TEXAS Briscoe and Swisher Counties	4	10:20 p.m.	8	*2	0	0	4		Wind, tornadoes, and hail	TV antennas, parts of grain elevators, and barns blown down. 2 funnels not touching ground between Silverton and Kress reported over open country. Storm moved southeastward.
KANSAS Natoma (near), Rooks County	4	Night							Electrical and rain	Bolt of lightning struck church, destroying steeple and damaging roof.
TEXAS Olton (near), Lamb County	4		10-15	*1-2	1				Electrical and hail	Lightning killed farmer, struck house, and burned-out pump motor. Hailstones cut swath through fields.
	4									Minor storm also reported at Woodward, Okla.
COLORADO El Paso, Lincoln, and Elbert Counties	4-5	P.m. 4th-a.m. 5th						2	Rain, hail, and wind	Heavy rains in northeastern El Paso County, in vicinity of Calhan, caused flooding of Big Sandy Creek. Railroad property, bridges, and water mains damaged along creek at Simla, Limon, Hugo, Clifford, and Boyero. Some hail accompanied storm, but no serious damage reported.
OKLAHOMA Woods and Woodward Counties	5	2:10 a.m.			0	0	3	3	Rain, wind, tornado, and electrical	Heavy rains and high winds raked Woods and Woodward Counties. Funnel aloft sighted 10 miles southwest of Alva, but not confirmed. Storm moved southeastward.
OKLAHOMA Faxon area, Comanche County	5	3 a.m.			0	0	3	1	Tornado, electrical, and wind	3 persons sighted funnel aloft 15 miles southwest of Lawton in vicinity of Faxon; minor damage to utility lines resulted from lightning. Storm moved northeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Le Roy (6 miles east of), Coffey County	5	Early a.m.							Electrical	Lightning struck large barn which was completely burned by resulting fire.
ALABAMA Chestnut Grove, Coffee County	5	Afternoon					1	4	Hail, rain, and electrical	
KANSAS Cherryvale, Montgomery County	5	4 p.m.						1	Electrical	Filling station struck by lightning; 1 gasoline pump caught fire. Several street lights put out of order.
ALABAMA Headland, Henry County	5	5:30 p.m.					3	2	Wind, hail, rain, and electrical	Crop damage by hail; other damage by wind.
ALABAMA Malvern-Taylor areas, Houston and Geneva Counties	5	Late afternoon					4	3	Electrical, hail wind, and rain	In addition to hail damage to crops, lightning struck and burned shop with loss of $15,000.
NORTH DAKOTA Coleharbor (near), McLean County	5	6:10 p.m.			0	0	4	1	Tornado (suspected), wind, and rain	Barns and smaller buildings demolished, antennas destroyed, and telephone and electric services disrupted. Black funnel cloud sighted by several persons. Storm moved northeastward.
NEBRASKA Sparks (6 miles east of), Keya Paha County	5	9:40 p.m.			0	0	2	1	Tornado and rain	Frame building picked up, carried 50 feet, and flattened, Car and 2 tractors which were inside building not damaged. Tornado moved northeastward.
KANSAS Hays (6-1/2 miles west of), Ellis County	5	11:50 p.m.						1	Electrical	Bolt of lightning struck oil company wooden gun barrel; fire burned until next afternoon.
KANSAS Pawnee and Edwards Counties	5	Night			0	0			Wind, hail, and tornado (suspected)	High winds and hail caused some crop and property damage in Rozel, Garfield, and Kinsley areas. Some evidence of tornado formation aloft at Rozel.
OKLAHOMA Jay, Delaware County	5				1	1			Electrical	Lightning struck tree as 2 men passed seeking shelter in building. 1 man killed and the other knocked unconsious.
TEXAS Lockney (northeast of), Floyd County	5								Hail and wind	Heavy hail destroyed 300 acres of cotton. High winds blew roofs off barns and carried roof tin 100 yards.
	5									Minor storms also reported at Savannah, Ga.; in Fairfield vicinity, Maine; at Maitland, Mo.; at Columbus, Lincoln, and near Sidney, Nebr.; and at Clinton and Carnegie, Okla.
COLORADO Sedgwick and Phillips Counties	5-6	Afternoon							Hail, wind, and rain	Thunderstorm accompanied by hail and strong wind did considerable damage to wheat. Estimations ranged from 35 to 95 percent losses; amount of acreage not known.
MISSOURI Grant City, Worth County	6	5-7 a.m.					5		Electrical, wind, rain, and hail	Excessive lightning. Damage to houses and buildings estimated at $200,000.
SOUTH CAROLINA Mont Clare area, Darlington County	6	1:30 p.m.	3	880			1	4	Hail, wind, and rain	Damaged crops over 2 square miles. Some damage to utility poles. Storm moved eastward.
NEBRASKA Pleasanton (2-1/2 miles north of), Buffalo County	6	3:30 p.m.	2	500	0	1	4	1	Tornado, wind, and rain	Tornado moved southeastward. Funnel cloud observed. Man blown off haystack and injured. 1 set of farm buildings and contents destroyed, another set damaged.
NEBRASKA Trumbull (south of), Clay County	6	4:30-6 p.m.	5	*2			3	5	Hail	Stones 1 inch in diameter.
NEBRASKA Clay County (northern portion)	6	5:45-6:30 p.m.					6	3	Hail and wind	Several flimsy buildings destroyed or toppled. Several wheat fields ruined by hail. Property damage by wind, crop by hail.
NEBRASKA Geneva area, Fillmore County	6	6:20-7:30 p.m.	16	Narrow	0	2	5	3	Tornado, hail, rain, and electrical	Masonry wall of solid, fairly new building broken outward. Many farm buildings destroyed. Crop damage by hail, property damage by tornado. Funnel cloud observed. Storm moved southeastward.
NEBRASKA Lincoln (9 miles northwest of), Lancaster County	6	7 p.m.					4	3	Electrical and hail	House struck and burned; most contents also lost. Crop damage by hail.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEBRASKA Denton (2 miles west of), Lancaster County	6	7:20 p.m.	3	Narrow	0	0	3	1	Tornado, rain, hail, and electrical	Large, solidly built barn shredded to bits. Granary and corn crib carried over 1 mile. Water sucked from stock tanks. Trees and branches twisted off. Storm moved southeastward.
NEBRASKA Emerald (3 miles southwest of), Lancaster County	6	7:30 p.m.	Short	Narrow	0	0	3	1	Tornado, wind, rain, and electrical	Barn picked up by wind. Storm moved northeastward.
NEBRASKA Walton (2 miles north-northwest of), Lancaster County	6	7:30 p.m.		100	0	0	3	1	Tornado, wind, and rain	Strongly-built corncrib and its concrete foundation demolished, but loose objects on ground nearby not moved. Storm moved northeastward.
NEBRASKA Lincoln, Lancaster County	6	7:38 p.m.				1	4	1	Wind	Widespread moderate damage to wires, trailerhouses, TV antennas, plate-glass windows, and trees.
NEBRASKA Thayer County (southwestern portion)	6	8:30-8:40 p.m.	12	1,200			4	3	Hail and wind	Property damage by wind and hail, crop by hail.
SOUTH DAKOTA Hughes County	6	Evening					3		Hail and wind	Golf-ball-sized hail damaged 9 light planes at Pierre Municipal Airport.
	6									Minor storms also reported at Des Moines and Manning, Iowa; at St. Joseph, Mo.; near Helena, Mont.; and near Humboldt, Nebr.
KANSAS Northern, central, and eastern portions	6-7	5 p.m.-after midnight			0	1			Tornadoes, wind, hail, electrical, and rain	Squall line developing late in afternoon and passing eastward across Kansas during night, left evidence of fury in a number of localities. Storm especially severe from Rawlins to Jewell Counties. First evidence of severity was in wind shift from Rawlins to Norton Counties, where dust reduced visibility to less than 50 feet as storm moved in. Hail ranging in size from peas to hickory nuts fell in area 20 miles long and 2 miles wide across Rawlins County. Some fields of wheat leveled. At Norton, wind did extensive damage to partly constructed wall at grade school and to metal awning at newspaper office. At Kirwin, Phillips County, hail size of golf balls reported. In Smith County, buildings damaged by wind. Jewell County suffered 2 storms, 1 of hail from 6:10 to 7 p.m., over 50-square-mile area with heaviest damage 3 miles south and 1-1/2 miles east of Burr Oak; wheat damage ranged from 20 to 80 percent loss; round hailstones up to 2 inches in diameter, others rather flat and 3 inches across wide side; in Burr Oak many windows broken and roofs damaged. Second storm, severe wind, from 8:15 to 9 p.m., uprooted trees, broke limbs and TV aerials, caused roof damage, and destroyed some small farm buildings. All limbs and other wind-damaged articles blown directly east of original location. No definite reports of funnels or indications of tornado damage. Second area affected by severe winds from about 6 to 10:30 p.m., was in Larned, Great Bend, McPherson areas; some hail fell in this section also, but no great amount of damage resulted; power and telephone circuits out for a while due to wind damages. 4 tornadoes reported, near Frizell, Pawnee County, at 5:55 p.m., aloft, no damage; 8 miles north of Larned, touched ground in open country at 5:55 p.m.; west of Great Bend Airport at 8:25 p.m., no damage; near Inman, McPherson County, during evening apparently aloft as no damage resulted. Reports indicate that thunderstorm produced exceptionally severe lightning as it crossed eastern Kansas. 6 damaging lightning strikes reported at St. George, Pottawatomie County, in late evening, $12,000 loss when lightning struck oil storage tank and burned 2,000 gallons of power fuel, storage tanks, building, and automobile, explosion heard 3 miles distant; at 11:07 p.m., lightning struck farm home near Salina and electricity followed lead-in wire of TV, damage done to side of house, TV set, and housewife injured receiving small cut on her head; at Wellington thunderstorm lasted almost 4 hours and home struck at 4:05 a.m., with some damage; unoccupied frame dwelling in southwestern portion of Fort Scott struck by lightning about 2:30 a.m., house and contents burned rapidly with damage estimated at $3,000; parts of Wichita without lights and power for several hours early on 7th due to electrical storm; lightning struck home about 4 a.m., west of Junction City, setting fire to TV set and flames damaged wall and a portrait.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TEXAS Hockley, Hale, Swisher, and Floyd Counties	7	4:30-5 p.m.			1	0			Electrical, hail, and tornadoes	Lightning killed farmer near Tulia. Heavy hail damaged cotton acreage northwest of Levelland and around Plainview. Tornado funnel not touching ground reported northwest of Plainview and another funnel aloft 15 miles northwest of Lockney.
OKLAHOMA Alva area, Woods County	8	3:30-3:45 a.m.			0	0			Tornadoes, rain, and electrical	1 funnel aloft sighted west of Alva at 3:30 a.m., and second sighted southwest of Alva at 3:45 a.m.
OKLAHOMA Seminole County	8	1:30 p.m.	18	150	0	0	3	1	Tornadoes, wind, rain, and hail	Damage first noted 6 miles northwest of Seminole and funnel first sighted 5 miles northeast of Seminole where observer said funnel split in two, one continuing eastward where damage noted over an additional 6 miles and the other traveled southeastward toward Wewoka with spotted damage over an additional 12-mile path. Second funnel spotted 2 miles northeast of Wewoka by Highway Patrol. Damage included an oil derrick torn from its foundation and foundation pulled from ground. Rig fell across automobile, small truck, and tool shed. Empty oil drums near shed were not moved. Another oil rig blown down a little to northwest of first one. Light plane at airport 3 miles north of Seminole lifted in the air, hovered about 50 feet above ground, then dashed to earth in nearby yard. Other planes at airport were not moved. Other damage included trees being blown over or snapped off several feet above ground, buildings damaged, utility lines blown down, and windows blown out. Unconfirmed reports included several persons sighting funnels or funnels aloft in area.
NEW MEXICO Portales, Roosevelt County	8	2:30 p.m.	4-5	*4-5			2	5	Hail and rain	Storm moved eastward.
ALABAMA Brindlee Mountain, Madison County	8	Early afternoon			0	0	2	1	Whirlwind	Eyewitnesses reported "small tornado" moving along top of Brindlee Mountain. House unroofed and gra arbor overturned. No rain or other disturbances reported by any substation.
OKLAHOMA Logan, Kingfisher, and Oklahoma Counties	8	4 p.m.	1	150	0	0			Tornado, wind, hail, electrical, and rain	Tornado touched ground in field 4 miles northwest of Crescent, Logan County; no damage resulted. It was described as peculiar sight in that it traveled southwestward and protruded from leading edge of cloud, forming an arc to ground. Severe thunderstorm which spawned this tornado traveled path 15 miles wide and about 35 miles long from Hennessey and Dover in Kingfisher County to Edmond and north eastern Oklahoma City in Oklahoma County. Hail u to size of golf balls caused damage of 5 to 100 percent to crops in Hennessey to Dover area (King fisher County) and to Crescent to Cashion area, Logan County. Roof and window damage also result ed from hail. High winds up to estimated 80 m.p. snapped large trees and partially unroofed large barn near Cashion. Lightning struck stack of bales and burned about 40 of them before fire extinguished.
TEXAS Sunray area, Moore County	8	7 p.m.					4		Electrical	Lightning struck refinery 7 miles southwest of Sun ray.
OKLAHOMA Tillman and Jackson Counties	8	7:30 p.m.					2		Hail and wind	Western Tillman and southeastern Jackson Counties hit by hour-long hailstorm which badly damaged cotton and few remaining fields of wheat.
TEXAS Hockley, Floyd. and Palo Pinto Counties	8								Hail, electrical, and wind	Hail cut swath 6 miles long by 2 miles wide throug cropland southwest of Lockney. Lightning struck at Levelland, destroying 210-barrel oil tank. Lightning and gusty winds destroyed roofs and plate-glass windows at Graford.
TEXAS Lubbock County	9								Hail, wind, and rain	Heavy hail swept through 40 square miles of cotton in western Lubbock County. Wind up to 65 m.p.h., with torrential rains which flooded streets and covered roads with water occurred in Lubbock. Power and telephone services disrupted.
	9									Minor storm also reported at Jasper, Tex.
DELAWARE Camden (near), Kent County	10	Midnight						1	Electrical	Lightning struck TV antenna and caused shingles to be torn from roof. Lightning struck in at least 2 other locations in same area. Side of house hi starting fire. Large barn destroyed by fire caused by lightning.
MONTANA Missoula, Missoula County	10	2:15 p.m.	5-10				4		Wind	Plate-glass windows, trees, and several structures destroyed. Storm moved northeastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4–Continued

JUNE 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
VIRGINIA Patrick County (eastern portion)	10	Afternoon							Wind, hail, and rain	
WASHINGTON Eastern portion	10	Afternoon							Wind, hail, and rain	Trees, powerlines, and few farm buildings damaged by high wind and in a few localities hail caused crop losses. Several persons narrowly escaped injury from falling trees in camping areas and from boats capsizing on lakes in northeastern counties. Barn destroyed by wind near Davenport.
NORTH CAROLINA Craven, Catawba, Lenoir, Mecklenburg, Yadkin, and Henderson Counties	10	3-5 p.m.						4	Hail	Damage mostly to tobacco in small areas.
CONNECTICUT Litchfield and Hartford Counties	10	3-9 p.m.					4	1	Electrical and rain	Fire caused by lightning destroyed barn and contents of hay and farm tools at New Milford with estimated loss of $5,000. Lightning also struck 2 homes in Hartford area with small fires resulting.
VIRGINIA Henry County (northern and eastern portions)	10	4-4:30 p.m.	10	880					Wind, electrical, hail, and rain	Damage mainly to young growing crops; no information available covering monetary loss. Hail small. 0.25 precipitation fell. Excessive lightning and thunder. Storm moved eastward.
PENNSYLVANIA Eastern half	10	4-10 p.m.					4	5	Hail, electrical, and rain	Series of thunderstorms set off by cold frontal passage. Thunderstorms which broke out in Susquehanna Valley and moved eastward caused greatest damage in Lebanon, Lancaster, Berks, Monroe, and Montgomery Counties where hail accompanying storms accounted for most damage. It varied in diameter from 1/4 inch in northern sections to 2 inches in Lebanon and Lancaster Counties. Most property damage confined to glass breakage in greenhouses, windows, and automobiles. Crop damage restricted to southern counties where apples, peaches, and tomatoes suffered broken skins in addition to being torn from limbs. Pounding hail flattened many acres of corn, alfalfa, and soybeans. Many communities without electricity temporarily, due to severed wires and burned-out transformers. Minor damage occurred, from felled trees and tree limbs, but was widespread.
NEW JERSEY Hunterdon and Warren Counties	10	6-9 p.m.					5	C	Hail, electrical, wind, and rain	Principal damage due to hail, although some damage caused by lightning and wind. Washington hardest hit in area from Belvidere to Clinton and Flemington. Extensive damage to crops, houses, trees, shrubbery, greenhouses, and automobiles reported. Hailstones varying in size from moth balls to golf balls sighted, and in some places piled 4 to 6 inches high. Storm moved southeastward.
FLORIDA New Port Richey, Pasco County	10								Wind and hail	Local severe thunderstorm with strong winds and hail, size of marbles, broke windows and shredded foliage. Falling trees damaged a number of homes and automobiles.
	10									Minor storms also reported at Mobile and Sand Mountain, Ala.; at Tillar, Ark.; and at Helena, Mont.
NORTH DAKOTA Gladstone, Stark County	11	8:30 a.m.	20				4	3	Wind	Storm moved eastward.
NORTH CAROLINA New Hanover County	11	5 p.m.						4	Hail	5 square miles damaged.
TEXAS Jasper, Hardin, and Jefferson Counties	11					1			Electrical and wind	High wind and lightning disrupted electric services at Jasper and burned out generator. Lightning struck man fishing on Neches River, 45 miles north of Silsbee. Lightning struck powerpole near Beaumont, disrupting service to Silsbee for about 3 hours. Wind blew down drive-in theater screen and damaged roofs at Nome.
	11									Minor storms also reported at Toledo, Ark.; and in Jacksonville and Trinity areas, Texas.
MISSOURI Deering, Pemiscot County	12	Afternoon			1	1			Electrical	
MISSOURI St. Louis	12	Late afternoon					4		Electrical	$12,000 damage to downtown building.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4–Continued

JUNE 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ARKANSAS Leachville, Mississippi County	12	P.m.			2	1			Electrical	2 persons killed and 1 injured by lightning.
MISSOURI St. Louis	12	Late p.m.					4		Electrical	
MISSOURI Deering, Pemiscot County	12				1	2			Electrical	Girl killed by lightning while chopping cotton.
	12									Minor storms also reported near Salamonia, Ind.; at Wellman, Iowa; in Robeson, Scotland, Yadkin, and Cherokee Counties, N.C.; and at New Providence and Ruffin, S.C.
SOUTH CAROLINA Darlington County	13	Afternoon	15	*5				6	Hail, wind, and rain	Series of hailstorms occurred from 6 miles south of Hartsville to near Mont Clare. Most damage reported near Bethel, Philadelphia, Swift Creek, and Mont Clare communities. 2,000 acres of cotton damaged, 1,000 acres of tobacco, much corn, tomato, and watermelon crops. Storm moved northeastward.
MAINE Androscoggin and Kennebec Counties	13	3 p.m.				2	4		Electrical, wind, and rain	Telephone and powerlines hard hit by lightning and wind-felled trees. 2 persons stunned and bruised by lightning bolt at Auburn.
PENNSYLVANIA Pittsburgh area, Allegheny and Jefferson Counties	13	3-6 p.m.			1	2	4	4	Electrical, hail, wind, and rain	Lightning killed 1 man and injured 2 others while they were playing golf near McKeesport just as storm struck. Near Reynoldsville lightning hit barn causing $6,000 fire. Severe hailstorm accompanying thunderstorm in same area caused heavy damage to garden crops. Lightning bolts also struck 2 homes in area, but no fire resulted and damage slight. Some damage throughout area caused by wires burning in wet trees, with some interruptions in service.
MINNESOTA Sandstone vicinity, Pine County	13	3:15 p.m.				1	4	2	Hail, rain, and electrical	Hail reported 5 inches in diameter. At Eagle Head, east of Sandstone, 5.50 inches of rain unofficial report (forest ranger) fell in 1 hour. Vehicle windshields and roofs broken and punctured at Sandstone. Storm moved eastward.
MASSACHUSETTS and NEW HAMPSHIRE	13	4-5 p.m.				1	5		Electrical, wind, hail, and rain	Severe thunderstorms hit many localities in eastern Massachusetts and around Nashua, N.H., causing damage from scores of lightning-set fires; thousands of power and phone outages from lightning and wind. One storm left 12-mile path about 1 mile wide southeastward through Fitchburg which in some spots were suggestive of tornado damage with hail up to 1 inch in diameter. Particularly hard hit also were parts of Lowell, which also had some flash floods, North Chelmsford, Wilmington, parts of Tyngsboro, Dracut, and other nearby areas. Most Greater Boston areas affected and lightning stunned and burned 1 man at Arlington, and at Milton motorman had his clothes scorched when his train was struck. 6 head of steers killed by lightning at Lexington. Several small areas had very heavy rainfall totals in a few minutes time, with local street flooding. Damage of $300 inflicted on building at Methuen by what was locally billed as "twister" but subsequent investigation could not definitely establish it as a tornado. Many towns to south of Boston and as far west as Natick hit. Natick had scores of trees felled and homes struck by lightning. Brockton hard hit. Many plate-glass windows collapsed in suburbs as well as in Boston. In all it is estimated that over 100 homes struck by lightning, starting scores of minor fires and some with considerable damage. Also over 20,000 families lost electrical service for varying lengths of time, and many as well had phone outages. Rush-hour traffic delayed by poor visibility in heavy rain by tree-blocked or flooded streets. Wind reached 84 m.p.h., in a gust at Logan Airport, Boston.
PENNSYLVANIA York area, York County	13	7:45 p.m.			0	2	4	4	Electrical, hail, tornado (suspected), wind, and rain	2 persons injured, roofs of 8 buildings blown off, and 5 cars damaged when severe electrical storm with high winds hit York area. Injured persons were in moving automobile when it was struck by roof blown off nearby store. According to eye witness, "It had a tail like a kite and skipped all around. All at once the whole building shook. There was a sound like an explosion when the roof went off." Accompanying rain did much damage to interiors of unroofed buildings. Widespread damage to trees, utility lines and poles, and crops due to hail. Storm moved eastward.
WISCONSIN Rhinelander area, Oneida County	13	10 p.m.			4				Wind, rain, and electrical	3 drowned from 1 boat and 1 from another during winds up to 100 m.p.h., in gusts reported. Storm moved northeastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
	13									Minor storms also reported at Houston, Ala.; and in Northampton County, N. C.
LOUISIANA Southeastern portion and northeastern corner	13-14	7:15 am 13th -a.m. 14th			1				Tropical storm	Tropical storm developed about 100 miles south of Louisiana coast between midnight and 3 a.m., moved inland over southeastern Louisiana about 7:15 a.m., then northward into Mississippi. Rainfall of 2 to 7 inches over southeastern Louisiana, southwestern Alabama, and most of Mississippi. High wind speed reported at 55 m.p.h., at Grand Isle, La. Lowest observed pressure was 29.66 at Moissant Airport, La., and at McComb, Miss. 1 person drowned in Lake Pontchartrain when his truck skidded on bridge as result of wet pavement. Bridge over Lake damaged by the truck, but more seriously by a loose barge; damage estimated at $12,000. Sulphur mines near coast south of Houma suffered some damage from tide 4-1/2 feet. Storm crossed northeastern corner of State early morning 14th.
MISSISSIPPI Southern and southwestern portions	13-14	Noon 13th-early a.m. 14th			3				Tropical storm	Storm entered State about noon, 13th, moved northwestward from coast across southwestern portion and crossed into northeastern corner of Louisiana early morning of 14th. Rains of 2 to 7 inches over most of Mississippi. Highest measured tide was 4.7 feet MSL from Biloxi. Lowest pressure observed was 29.66 at McComb, Miss., and at Moissant Airport, La. 3 persons drowned off Mississippi coast, when 10 or 12 men jumped from a quarter barge to a tug which then sank. Considerable minor damage to beaches, small boats, and piers along Mississippi coast from high tides.
WISCONSIN Rusk and Sawyer Counties	13-14	Midnight					4	1	Electrical and rain	Lightning struck 2 barns, 1 burned, killing 12 cows. Storm moved northeastward.
MINNESOTA Ivanhoe, Lincoln County	14	1:30 p.m.					4	5	Rain	Unofficial 8 inches of rain in 3 to 3-1/2 hours; much flooding and erosion resulted. Road damage estimated at $50,000. Storm moved eastward.
MINNESOTA Hennepin and Washington Counties	14	3-4 p.m.			0	0	4	2	Electrical, tornado, hail, wind, and rain	At Minneapolis lightning struck home and started fire, damage $5,000. Washington County Sheriff reported funnel-like cloud northwest of Stillwater at 3 p.m. Hail fell eastern Washington County, disrupting traffic and doing some crop damage. Some telephone poles also downed by wind and rain. Storm moved eastward.
PENNSYLVANIA Lock Haven area, Clinton County	14	8 p.m.						1	Electrical and rain	Lightning struck wooded section of Bald Eagle Mountain causing 15-acre forest fire.
MINNESOTA Madison, Lac Qui Parle County	14	P.m.	14	*1-1/2			1	5	Hail, wind, and rain	Crops damaged. No structural damage reported. Storm moved eastward.
NEBRASKA Dawson County (southern and southeastern portions)	14	Evening	12	*2-1/4			1	6	Hail	Hailstones up to size of golf balls.
	14									Minor storms also reported at Minneapolis, Minn.; and between Gramling and Inman, S.C.
COLORADO Eastern portion	15	All day							Wind, hail, rain, electrical, and dust	Strong wind damaged trees, powerlines, buildings, and other property in northeast. In Denver, gusts up to 55 m.p.h., disrupted powerlines, blew out plate-glass windows, and littered streets with large branches of trees. In Greeley outdoor movie screen blown down. Roads closed on eastern plains due to poor visibility, caused by blowing dust. In Manitou area electrical storm accompanied by wind and hail did minor damage by stripping leaves off trees, and washing rocks, sand, and gravel over yards and streets. Hail reported to be about size of pullet eggs.
ILLINOIS Northern and central portions	15	2:20 p.m.					4		Wind, rain, and electrical	Many widely scattered local thunderstorms. Damage resulted from heavy showers, lightning strikes, and heavy winds. Lightning struck judging tower at Chicago racetrack.
WYOMING Southeastern portion	15	Afternoon					5	3	Wind and hail	Small grain damaged, tree limbs broken, and TV antennas blown down.
MONTANA Park and Stillwater Counties	15	3:30 p.m.	25	*2			4	4	Hail and wind	Hail to 2 inches in diameter dented cars, broke windows, damaged roofs, and hurt small grains and hay. Water covered main highways for a time. Storm moved northward.
MONTANA Meagher and Wheatland Counties	15	4:30 p.m.	30	*2			3	4	Hail, wind, and electrical	Hail and wind to about 40 m.p.h. Several hundred windows broken by hail up to 1-1/2 inches in diameter. Storm moved northeastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MONTANA Fergus and Judith Basin Counties	15	5-8 p.m.	12	*1 3/4			4	5	Hail and wind	Hail driven by locally strong wind. Hail diameter up to 1 inch. Windows broken, utility poles blown over, and crops hurt, mostly small grains. Wind gusts estimated by Moccasin observer up to 80 m.p.h. Storm moved northeastward.
MAINE	15	P.m.					4	1	Electrical	Losses due to fires set by lightning in Caribou area; some minor damage to power services elsewhere in Maine, particularly in coastal area.
NEW YORK Steuben County	15	Late p.m.				1	4	2	Electrical, hail and rain	Near Perkinsville barn burned by lightning with $12,000 loss. Near Avoca housewife injured by lightning, and barn burned with $8,000 loss. Rain caused some loss of crops by flooding and erosion.
MONTANA Yellowstone River Valley	15	Evening	Several	*5-6			4	2	Wind, rain, and electrical	Windstorm accompanying frontal passage with thunderstorms. Many trees blown down, a few taking out telephone and powerlines. Most damage in Yellowstone River Valley, where a few storefront windows blown out. Storm moved eastward.
SOUTH DAKOTA Deerfield (near), Pennington County	15				0	0			Tornado (suspected)	Cooperative observer reported small trees uprooted by "small twister" 2 miles northwest of Deerfield.
TEXAS Galveston and Harris Counties	15								Wind and rain	Strong winds and heavy rains caused damage along Gulf Coast. Hardest hit area around Baytown where 2 planes and a hangar destroyed; 2 other light planes damaged; only 1 wall of hangar left standing. Wind moved into Houston about 3:20 a.m., and lasted about 3 hours; highest speed recorded at Houston 62 m.p.h., but Galveston Airport recorded 79 m.p.h. Wind blew down numerous garages and barns throughout Harris County. At Houston wind snapped off tree branches, toppled trees, blew down signs, and knocked out traffic signals. Brief heavy rainfall which accompanied wind flooded streets and underpasses.
	15									Minor storms also reported in Poweshiek County, Iowa; in Chatham County, N.C.; at Lapoint, Utah; and near Glenrock, Wyo.
PENNSYLVANIA Chester Area, Delaware County	16	5-7 a.m.			1	22	3	1	Electrical and rain	Boy killed and 21 other boys and scoutmaster injured when lightning struck Boy Scout Camp near Chester Heights, Delaware County, during violent thunderstorm. Several trees in camp struck by lightning, but otherwise property damage to camp negligible. In surrounding area 2 homes hit by lightning, causing fires resulting in estimated $3,000 damage.
MISSOURI Southwestern portion	16	A.m.							Rain, wind, and electrical	Near 5 inches of rain at Cassville. Much flooding and some lightning damage.
IOWA Britt (1-1/2 miles east of), Hancock County	16	1:30 p.m.					4	1	Wind, rain, and hail	Farm buildings destroyed and phone lines downed. Storm moved eastward.
KANSAS Rawlins County (northern portion)	16	4:30-5 p.m.	10	*3			4	4	Wind, hail, and rain	Driven by high wind, hail from 1/2 to 1 inch in diameter damaged wheat in two 30-square-mile areas 20 to 100 percent. Wind and heavy rain also caused some damage. Storm moved eastward.
COLORADO Boulder area, Boulder County	16	9:35-11:15 p.m.							Rain and hail	On night of 16th, 3 canyons in Boulder area closed by cloudburst and hailstorm. Water came into Boulder, flooding many basements. Buildings and equipment at Colorado University heavily damaged by flood waters. Hail reported to be as large as the end of your thumb, but no serious damage to crops reported.
NEBRASKA Broken Bow (10 miles south of), Custer County	16	10 p.m.	1.2	200	0	0	4	1	Tornado, wind, rain, and electrical	Man in storm cellar reported ears hurt when storm passed over. Farm buildings destroyed. Storm moved northeastward.
MASSACHUSETTS Middlesex County	16	P.m.				2	4	1	Electrical, rain, and wind	2 Tewksbury residents shocked by lightning; considerable highway damage from heavy rain occurred at Acton and several homes damaged by lightning there. Minor electrical troubles caused in Sudbury area. Unusual ball lightning phenomenon observed at Stow, which caused $150 damage. At Framingham 2.02 inches of rain, nearly all thought to have fallen in about 1 hour; if so, that would surpass official Boston 1-hour record rainfall. Hail also fell there. Barn and some equipment destroyed by fire set by lightning at Sherborn. Over 1,000 phone outages reported by telephone company.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MINNESOTA Faribault (near), Rice County	16	P.m.			1				Electrical, hail, and rain	Man killed by lightning in open field. Storm moved eastward.
NEBRASKA Dundy County (northeastern and north-central portions)	16	Evening					1	4	Hail	
NEBRASKA Stratton (northeast of) Hitchcock County	16	Evening					3	4	Hail	
NEBRASKA Chappell (near) Deuel County	16							4	Hail	
	16									Minor storms also reported at McGregor, Iowa; at Coffeyville, Kans.; and at Lawton, Muskogee, Nowata, and Claremore, Okla.
MINNESOTA Goodhue, Rice, Olmsted, and Lyon Counties	16-17	P.m.							Electrical, rain, and wind	Lightning killed cattle near Zumbrota. Boy Scout kitchen and dining hall set afire by lightning near Rochester; complete loss, damage $5,000. Other building in area also hit, damage slight. Heavy rain 4.27 inches at Faribault sent Crockus Creek out of banks, washed out concrete bridge. Police said flooding along creek worst in their memory. Wind leveled barn at west Florence. Storm moved eastward.
ILLINOIS Thomson (north of), Carroll County	17	5:30 a.m.	2		0	0	4	3	Tornado, wind, rain, and hail	2 cottages damaged at Riverview resort area on Mississippi River. Storm moved northeastward.
KANSAS Manhattan, Riley County	17	A.m.					4	1	Electrical	Loss sustained by Eagles Lodge when building struck by lightning.
PENNSYLVANIA Mercer area, Mercer County	17	1-4 p.m.					5	1	Electrical and rain	Bolt of lightning struck oil storage tank at Leesburg (near Mercer) and burned 840,000 gallons of crude oil. Tank also destroyed, with total damage in excess of $100,000.
MINNESOTA Southwestern portion	17	1:30 p.m.					2		Rain, hail, and electrical	Rainfall 8.38 inches at Balaton in 4-hour period. Basements flooded, some field erosion, also crop loss due to flooded fields. Other heavy amounts, Tyler 4.64; Faribault 5.15; Waseca 3.26; and Mankato 3.40 inches. Storm moved eastward.
TEXAS Anton (near), Hockley County	17	3 p.m.			0	0			Tornado (suspected) and rain	Suspected funnel, almost hidden by rain, moved northeastward near Anton, destroying tenant house.
TEXAS Carlisle (2 miles south of), Trinity County	17	3:30 p.m.			0	0			Tornado (suspected) and hail	Unconfirmed tornado dipped down on farm and smashed tractor shed, lifted, then dipped down again 1/4 mile east where it demolished overhead water tank. Hail accompanying storm shredded growing cotton in wide radius.
ALABAMA Lineville, Clay County	17	Afternoon					4		Electrical	School struck by lightning, with resulting fire and other structural damage of $15,000.
COLORADO Eastern portion	17	Afternoon-evening						5	Hail, rain, and wind	Scattered showers over eastern Colorado. 1 shower accompanied by hail, hit Golden, Lakewood, and west Denver and did damage to roofs, windows, and vegetation; ground was white and hail foot deep in places. Same day heavy showers accompanied by hail and wind general in northeastern Colorado from mountains to eastern border. Heavy hail damage estimated at $500,000 to crops throughout Platte Valley from a few miles south of Fort Morgan and Brush to northeastern border. Buildings damaged and many windmills blown down. Old timers in Roggen and Prospect Valley areas say this was the most extensive and damaging hail that ever hit the Valley.
NORTH CAROLINA Beaufort, Hertford, Washington, and Martin Counties	17	4-6 p.m.					3	4	Electrical and hail	3 buildings destroyed by lightning-set fires; hail damaged crops over 5 square miles.
KANSAS Reno County	17	6-7 p.m.	10	*4-8					Wind, hail, and rain	Winds estimated at 70 m.p.h., accompanied by hail 1/2 inch in diameter caused severe damage over about 4 sections of land 3 to 15 miles northeast of Hutchinson. Very angry, twisting clouds observed. Damage also to trees and light poles. Storm moved northeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA Leedey area, Dewey County	17	7 p.m.			0	0			Tornado, wind, hail, and rain	Tornado sighted 3 miles northeast of Leedey, and pilot reported tornado on ground 30 miles southeast of Gage. These were probably reports of same storm. Hangar unroofed at Leedey Airport and debris scattered everywhere. Extensive damage noted southeast of Leedey resulting from high winds and heavy hail. Many holes punched in roofs and crops wiped out over small area. Storm moved northeastward.
	17									Minor storms also reported at Auburn and Bloomington, Ill.; and at Canyon, Hereford, Amarillo, and McLean, Tex.
MONTANA Glendive, Dawson County	18	1-4 a.m.					4	3	Rain and hail	1 bridge washed out, downtown business basements flooded, and construction projects damaged. Only small amount of hail. Crops beaten down by rain. Storm moved northeastward.
KANSAS Lansing area, Leavenworth County	18	6:20 a.m.	3/4	25	0	0	3		Tornado (suspected), wind, rain, and electrical	Trees blown down, large limbs broken off resulting in breakage of power- and telephone lines over area around Lansing. Near and at State Penitentiary narrow strip of damage to roofs and trees over path 3/4 mile long gave evidence of some tornadic winds. Storm moved northeastward.
TEXAS Alice (west of), Jim Wells County	18	8 a.m.			0	0			Tornado	Tornado observed, but dissipated with no damage reported.
MASSACHUSETTS Woburn, Middlesex County	18	1:40 p.m.		5	0	0	1	1	Dust devil	Lifted objects from yard as high as 30 feet into air; moved southward.
NORTH DAKOTA Beulah area, Mercer and Oliver Counties	18	3:15 p.m.	15	100	0	1	5	3	Tornado, rain, and hail	Railway employee injured when caboose and several grain cars lifted 4 or 5 feet off track and dumped into ditch. 1,000-pound feed grinder carried several feet. Storm moved east-northeastward.
OKLAHOMA Tillman County	18	3:30 p.m.							Electrical, hail, wind, and rain	During severe thunderstorm, lightning struck large electric motor at ice plant and burned it out; bricks knocked off high school building and numerous other forms of electrical equipment damaged in Frederick. Strong wind and severe hail damaged outbuildings and caused heavy damage to cotton, melons, and other crops in small area southeast of Tipton.
NORTH CAROLINA Eastern and southern portions	18	4-8 p.m.				4	5	5	Electrical, hail, wind, and rain	2 Pender County children, 1 man at Elizabeth City, and 1 at Camp LeJeune severely shocked by lightning. Several lightning-set fires; numerous instances of minor wind damage to buildings, and hail damage to crops scattered over half the State. 2 aircraft demolished near Fayetteville.
ILLINOIS East-central and north-central portions	18	Late afternoon-evening			1		3	3	Electrical, wind, rain, and hail	Lightning damage reported from DeKalb, Dana, Tuscola, and Mattoon. Lightning killed man near DeKalb.
NORTH DAKOTA Baldwin to Tuttle, Burleigh and Kidder Counties	18	6:30 p.m.	35	50	0	0	5	3	Tornado, rain, hail, and electrical	Tornado traveled east-northeastward mostly over pastureland, but 1 home destroyed, 16 homes and 21 other buildings damaged. Some chickens and a calf killed.
INDIANA Evansville area, Vanderburgh County	18	9:15-10:15 p.m.					4	1	Electrical and rain	Lightning and resulting fire destroyed barn and corncrib just west of Evansville and damaged 2 homes in area.
INDIANA Wayne County	18	P.m.					4	3	Rain	Heavy rain between Centerville and Abington washed out bridge, damaged paved road, disrupted electric power and flooded automobiles parked at Camp Clements.
KENTUCKY Cynthiana, Harrison County	18	P.m.				1	3	2	Electrical	Lightning struck and burned barn; all contents destroyed. Man putting up metal lead pipe from nearby barn to cistern stunned by probably same bolt that hit the other barn.
IOWA Strawberry Point, Clayton County	18	Evening				2	2	1	Wind	House and car damaged and 2 occupants of house injured.
MISSOURI St. Joseph and Maryville areas, Buchanan to Nodaway Counties	18	Late evening							Wind, rain, and electrical	Powerlines and farm buildings damaged.
IOWA Jones County	18						3	4	Wind and rain	Buildings damaged and oat crop flattened.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MARYLAND Hancock (near), Washington County	18							1	Hail and rain	Heavy thunderstorm brought total of 2.73 inches of rain. Hail hit several nearby orchards.
	18									Minor storms also reported in Cass County, Iowa; at Spalding, Nebr.; and at El Paso, Tex.
COLORADO Trinidad (near), Las Animas County	19	Before noon			1				Electrical	Man killed by lightning on farm at El Moro.
TEXAS Sinton area, San Patricio County	19	1:30 p.m.	1/2	300	0	2	2		Tornado (suspected), rain, and hail	6 miles east of Sinton "wind estimated so strong a man could not walk in it." 13x18-foot sheet-iron building destroyed, injuring 2 men. Windmill blown over.
ALABAMA Brooklyn (near), Cullman County	19	3 p.m.			1				Electrical	Farmer standing in doorway of his home struck by lightning.
NORTH CAROLINA Craven and Pender Counties	19	4-5 p.m.						4	Hail	7 square miles damaged.
KANSAS Riley County	19	5:15 p.m.		Few	0	0		1	Tornado, wind, and rain	Small tornado caused light damage at 1 farm, 3 miles north of Cleburne. Wind squall about same time damaged some farm buildings 1/2 mile south of Randolph. Storm moved northeastward.
NEBRASKA Blue Springs (3 miles west of), Gage County	19	5:30-5:45 p.m.					1	4	Hail	Hailstones 1 inch in diameter.
ILLINOIS Central portion	19	Late afternoon					5	4	Electrical, wind, rain, and hail	Many heavy thunderstorms occurred in broad band extending from about Quincy and Monmouth east-southeastward across State. Local flooding occurred near Kawanee. Large oil-storage tank lightning-struck and burned at Martinsville. Other damage resulted from heavy showers, strong winds, and hail.
MISSOURI Northwestern portion	19	Late afternoon-evening			0	0			Tornado (suspected), wind, rain, and hail	Unconfirmed tornado near Maryville. Powerlines downed and trees damaged.
SOUTH DAKOTA Kimball and Dimock areas, Hutchinson and Brule Counties	19	6 p.m.-midnight			0	0	3	4	Tornadoes (suspected), wind, hail, and electrical	Straight winds downed barn, small sheds, and house chimney. Lightning set fire to residence. 2 funnels reported aloft over Kimball at midnight.
IOWA Burlington, Des Moines County	19	7 p.m.				1	4	1	Wind, rain, and electrical	Buildings and utility lines damaged.
ILLINOIS Pike County	19	8 p.m.			0	0	4		Tornado (suspected), wind, rain, and electrical	Radio station WBBA destroyed; cement-block building leveled. Heavy rain, lightning, and other wind damage in area extending from Barry east-southeastward to beyond Pittsfield and south as far as Summer Hill.
MISSOURI St. Charles, St. Charles County	19	10 p.m.					2		Wind and rain	Wind hit 55 m.p.h.
MINNESOTA Cologne (near), Carver County	19	11 p.m.	7	*1			3	4	Hail, wind, rain, and electrical	Hailstones 2 to 3 inches in diameter and wind damaged crops, killed 268 turkeys, caused minor structural damage. Storm moved eastward.
KANSAS Smith Center, Smith County	19							1	Wind	High, gusty winds tore roofing off motel and damaged several small buildings at edge of town; airplane also demolished at airport.
	19									Minor storms also reported at French Lick, Ind.; at Batavia, Cedar Rapids, Colfax, Des Moines, Grinnell, Lorimor, Scranton, Mt. Vernon, Riverton, and in Mahaska, Adams, Greene, Guthrie, and Wayne Counties, Iowa; at Palco, Kans.; and in Fillmore and Saline Counties, Nebr.
COLORADO Fort Morgan area, Morgan County	19 or 20				0	0			Tornado	Small tornado tore roofs off 2 buildings, 1 mile west of Fort Morgan.
MISSOURI St Louis	19-20	Late p.m.-early a.m.							Wind, rain, hail, and electrical	Many powerlines downed.
MISSOURI La Plata, Macon County	20	Afternoon							Rain and wind	7.40 inches of rain fell. Much local flooding.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MONTANA Hysham vicinity, Treasure County	20	4:30 p.m.	4	*1-1/2			3	4	Hail	Hail damaged hay and grain, caused roof damage a well as broken windows. Storm moved northwestward.
MONTANA Martinsdale area, Meagher County	20	4:30 p.m.					3	3	Hail, rain, wind, and electrical	Windows broken and hay damaged by rain and hail to golf-ball size. Storm moved east-northeastwa
NEBRASKA Gibbon (near), Buffalo County	20	4:30 p.m.					1	6	Hail	Hailstones up to 1 inch in diameter.
NORTH CAROLINA Beaufort County	20	5 p.m.						4	Hail	Scattered damage to tobacco.
KENTUCKY Lexington, Fayette County	20	P.m.				1	3		Wind and rain	Wind flattened trees, damaged houses and utility lines, and rain flooded streets. Injury occurre to member of Lexington street crew.
MICHIGAN Tuscola and Huron Counties	20	Evening				1	4		Wind, electrical, and rain	Wind blew down barns near Cass City. Lightning struck several buildings, killed 10 head of catt and caused considerable damage to power- and tel- phone lines; at least 50 power transformers damaged by lightning.
ALABAMA Florence (near), Lauderdale County	20				1				Electrical	Woman standing in edge of field killed by lightni
	20									Minor storms also reported at Atlantic, Iowa; an at Hannibal, Mo.
NEBRASKA Saunders County, (northeastern portion)	21	1:55 a.m.	5	440			4	4	Hail and wind	Ripe wheat shattered by hail and wind. Haystacks scattered.
WYOMING Gillette (21 miles southwest of), Campbell County	21	11 a.m.	15		0	0	3	1	Tornado (suspected), wind, and hail	Windmill blown over. Roofs blown off of house and shed. Storm moved northeastward.
MONTANA Fallon County	21	2 p.m.	14	*4				4	Hail and electrical	Grains and hay damaged by 1/4 to 1/2-inch hail; storm moved northeastward.
WEST VIRGINIA Parkersburg, Wood County	21	2:45 p.m.							Rain and electrical	Heavy rain damage considerable, but unestimated, to streets and especially clogged sewers.
ILLINOIS Danville area, Vermilion County	21	3 p.m.					4	5	Rain, wind, and electrical	A group of heavy thundershowers brought 3 to 7 inches of rain in area extending from west of Danville north-northwestward to Rankin area. Unofficial 7 inches of rain at Rankin. Wind wrecked baseball grandstand at Danville in afternoon. Other structures struck by lightning later.
SOUTH DAKOTA North-central and northeastern portions	21	3-7:30 p.m.			0	0	5		Tornadoes (suspected), wind, and hail	Occurred from Gettysburg to Watertown. Most damage due to straight winds, but funnels reported near Redfield. Numerous barns and granaries flattened. Hail occasionally baseball size in southern Spink and central Clark Counties. Crop hail insurance claims filed for 1,048 sections in Spink, Clark, Codington, and Grant Counties. At Gettysburg, Air Force anemometer read 70 to 103-m.p.h., gusts; circus tent downed. At Redfield, parked airplane overturned. At Watertown carnival equipment wrecked.
VIRGINIA Front Royal, Warren County	21	3:30 p.m.							Rain	Flash flood with 0.33 inch in 30 minutes. Storm drains could not carry water off fast enough, causing water to flood 5 or 6 stores.
INDIANA Shoals (2 miles east of), Martin County	21	Afternoon			1	2			Electrical and rain	2 boys injured by lightning and girl killed when they sought shelter in shed during thunderstorm.
INDIANA Marion County	21	Afternoon					4	3	Electrical, rain and wind	Lightning set fire to church, but structure saved by firemen. Heavy thundershowers flooded basements and streets. Electrical services interrupted by lightning. Damage about evenly divide between lightning and rain.
KANSAS Oberlin (southwest of), Decatur County	21	Afternoon			1				Electrical	Man had dismounted from his tractor on his way to shelter when struck and killed by lightning.
MISSOURI Arrow Rock, Saline County	21	Afternoon					2		Hail and wind	Corn damaged by hail.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MISSOURI Northwestern portion	21	Afternoon							Electrical	Buildings hit by lightning near Bethany and Spickard.
TEXAS Lamb, Hale, and Yoakum Counties	21	Afternoon							Hail, electrical, wind and rain	Hail beat down 500 to 700 acres of cotton north of Amherst, and 250 acres of cotton and grain ruined 7 miles south of Plains. Lightning cut power to Abernathy. Heavy rains closed roads in Sudan and Denver City regions, and another road closed near Abernathy.
PENNSYLVANIA Mercer area, Mercer County	21	4-7 p.m.					3		Electrical, hail, wind, and rain	Lightning from thunderstorm touched off 2 fires in Mercer area causing $4,000 damage to barn, but only $100 damage to private dwelling. Hailstones 1-1/2 inches in diameter damaged crops while wind uprooted trees and felled utility lines.
NEBRASKA Almeria (west of) Loup County	21	4:30 p.m.		Narrow	0	0	3	1	Tornado (suspected), rain, and hail	3 sets of farm buildings damaged. Surrounding country sparsely settled open range.
INDIANA Edinburg, Johnson County	21	7 p.m.				1			Electrical	Man injured by lightning striking nearby.
MINNESOTA Southwestern portion	21	9 p.m.					5	5	Wind, hail, electrical, and rain	At Belgrade and vicinity, Stearns County, strong, straight-line wind blew down 25 barns, a service station, a cafe, and hundreds of trees; damage estimated at $200,000. At Benson, Swift County, $40,000 property damage as TV antennas and TV transmission tower blown down; also other property damage. Near Spicer, Kandiyohi County, 35,000 turkeys killed by falling debris and suffocation, estimated loss $50,000; other property damage estimated over $10,000; some crop damage due to 1/4-inch hail. At Litchfield, Meeker County, lightning struck municipal powerplant doing over $8,000 damage. Hail over Pipestone County, centered near Pipestone, did $150,000 damage to crops, $10,000 to property. In Storden Township, Cottonwood County, hail as large as golf balls accompanied by strong wind did over $50,000 damage to crops. Storm moved eastward.
OHIO Franklin and Fairfield Counties	21	10 p.m.			1	Few	5		Rain, wind, hail, and electrical	Heavy thunderstorm centered in northern Fairfield County caused flash floods on French and Blacklick Creeks, with worst damage in Pickerington and Reynoldsburg; about a dozen houses flooded and highway bridges washed out. Storm moved eastward.
INDIANA Otwell, Pike County	21	P.m.			1	2			Electrical	Man killed and 2 injured when lightning struck tree under which they were standing.
INDIANA Linton, Greene County	21	Evening					4	3	Rain	Approximately 7 inches of rain flooded 500 basements and floors of 3 houses. Electrical services interrupted and 2 State roads closed for a time.
NORTH DAKOTA Gladstone, Stark County	21						4		Wind and hail	Buildings damaged by hail; antennas twisted by wind.
	21									Minor storms also reported in Colbert and Lauderdale Counties, Ala.; at Alpha and Freeport, Ill.; in Bluffton area, near Covington and Newtown, at Dugger, and in Harrison County, Ind.; at Durant, Fort Madison, and near Massena and Rock Rapids, Iowa; at Garden City and Hays, Kans.; in Shelby County, Ky.; at Trenton, Mo.; near Coleridge, Nebr.; in Cumberland County, N.C.; and in Columbia area, Tenn.
KANSAS Rawlins County	22	12:30-1:30 a.m.	4	*2				3	Hail	Hail size of marbles to 1/2 inch in diameter fell in northeastern Rawlins County and about same time in south-central part. Storm moved eastward.
NEBRASKA Elwood (4 miles south of), Gosper County	22	2:30 a.m.	7-8	*2			1	5	Hail	Hailstones 3/4 inches in diameter.
KANSAS Clay and Riley Counties	22	5-7 a.m.							Electrical and rain	Thunderstorms over these 2 counties resulted in a number of lightning strikes that caused damage. Powerlines broken by transformers being hit, and a number of buildings damaged by lightning. Also a number of electrical appliances burned out. Telephone lines north and east of Clay Center also put out of commission.
IOWA Fayette and Clayton Counties	22	A.m.					4	1	Electrical, wind, and rain	Lightning destroyed barns and contents.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MINNESOTA South-central and southeastern portions	22	A.m.							Wind, rain, and electrical	Strong, gusty winds over area accompanied by rain. Damages were: At Windom, 70-foot wall 16 feet high blown down; loss estimated at $4,000; at Odin large cattle barn downed; near Truman 12-foot wide, 1/4-mile long strip of corn downed; Rochester Weather Bureau Airport Station reported gustiness to near 60 m.p.h.; north of Kasson severe hail damage; at Mazeppa 2-cub hangar blown down. Although local people reported tornadoes near Rochester, Weather Bureau Meteorologist who visited areas found evidence of straight-line windstorm only. Storm moved eastward.
ILLINOIS Entire State	22	6 a.m.-evening					4	4	Rain, electrical, hail, and wind	Widely scattered thunderstorm damage. 5 inches of rain at Oregon in morning. Mostly lightning damage early part of day; hail damage to crops later.
INDIANA Evansville, Vanderburgh County	22	2:30-3:30 p.m.					4	3	Electrical, rain, and wind	Lightning and resulting fire destroyed barn and grain elevator. Rain caused some flash flooding.
INDIANA Posey County	22	Afternoon					3	4	Rain	Many acres of farming land flooded by several inches of rainfall, damaging wheat and other crops.
KANSAS Southeastern portion	22	Afternoon			0	0		1	Tornadoes, wind, rain, hail, and electrical	2 tornadoes, heavy rain, hail, severe wind, and lightning occurred in parts of Cowley, Chautauqua, Elk, Montgomery, Labette, and Allen Counties. Greatest fury located in southern and eastern Montgomery County where winds estimated at 75 to 80 m.p.h. Local heavy rains of 5 to 9 inches. Tornado sighted northeast of Winfield, traveling northeastward, no damage resulted. Another tornado sighted near Latham, but did not touch ground.
KANSAS Cheyenne and Rawlins Counties	22	4-4:30 p.m.	15	*3			3	5	Hail, wind, and dust	High wind preceding hail caused severe erosion over wide area. Hail concentrated largely in Burntwood Township, Rawlins County. Hail pea size to 1/2 inch in diameter, but driven by estimated wind speeds up to 60 m.p.h., very destructive to field crops. Storm moved southeastward.
OKLAHOMA Coffeyville (south of), Nowata County	22	4:30 p.m.				1	3	1	Wind, hail, and rain	Severe thunderstorm with winds estimated up to 90 m.p.h., caused damage to roofs, buildings, windows, trees, utility lines, etc. 1 man received minor cuts when plate-glass window was blown in on him. 1/4-inch hail during storm also caused some damage. Storm moved southwestward.
MISSOURI Nevada, Vernon County	22	Afternoon-evening					2		Hail, wind, rain, and electrical	Hail size of golf balls. Much crop damage by hail.
MISSOURI Warrensburg, Johnson County	22	Late afternoon-evening							Wind and electrical	Powerlines downed and farm buildings damaged.
TEXAS Western portion	22	6:45 p.m.			0	3	5		Electrical, tornado, rain, wind, and hail	Turbulent weather moved downstate, extending in band about 10 to 15 miles wide from Kermit, Winkler County, to Sweetwater, Nolan County. Lightning struck 2 large oil storage tanks east of Midland; fire destroyed contents. Small tornado 2 miles west of Big Spring tipped over car and trailer, injuring 1 person. 2 softball players suffered shock when lightning struck near them. Hail, rain, and wind estimated at 50 m.p.h., hit Colorado City smashing plate-glass windows; trees blown down and rain flowed curb deep about 20 miles south of Big Spring, 8 to 10 inches of water standing on Highway 87. Storm moved southeastward.
MISSOURI Schneider, Howell County	22	7:30 p.m.							Electrical	Barn destroyed by lightning.
OKLAHOMA Oakwood, Dewey County	22	P.m.						1	Wind and rain	Strong winds tore down 2 windmill towers and destroyed an automobile. Utility lines also damaged.
KANSAS St. Francis (16 miles northeast of), Cheyenne County	22	Night			0	0			Tornado and electrical	Tornado funnel sighted aloft by aid of lightning.
	22									Minor storms also reported at Columbus, Ind.; at Charles City and Mason City, Iowa; in Shelby County, Ky.; and at Yale, Okla.
OKLAHOMA El Reno (near), Canadian County	23	1:43 a.m.			0	0			Tornado	Funnel aloft reported sighted 12 miles southwest of El Reno moving southward; believed not to have touched ground.
OKLAHOMA Adair County	23	6 a.m.						1	Electrical	Lightning struck and burned a small outbuilding just west of Stilwell. Lightning also struck

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA (Cont'd)										home just south of Westville; hole torn in side of house and through kitchen cabinets, dishes broken and stove clock damaged, and TV antenna downed.
OKLAHOMA Konawa, Seminole County	23	A.m.						1	Electrical	Lightning struck and completely destroyed barn containing several hundred bales of hay.
KANSAS McDonald (3-1/2 miles west of), Cheyenne County	23	3:55-4:20 p.m.			0	0			Tornado and rain	Tornado first observed over plowed field, then raised and came down south of highway and soon disintegrated; moved southeastward.
PENNSYLVANIA Statewide	23	4 p.m.-midnight			2	6	5	1	Electrical, rain, and wind	Thunderstorms which crossed State concentrated their fury on western half, although flood damage at Willow Park near Butztown estimated at $20,000. Extensive damage such as felled trees and powerlines did occur in east portion of State. 2 barns, hit by lightning, destroyed in Camp Run-Zelienople-Harmony areas causing losses estimated at $37,000 with an additional $12,000 equipment destroyed. High water, due to heavy rains, claimed life of youth when he drowned while trying to retrieve floating debris. Water about 3 feet deep in streets. In Pittsburgh man stepped on "live wire" blown down by storm and was fatally injured. Heavy rains caused landslides in Kittanning area and washed out bridge, while along Lake Erie coast 70-m.p.h., winds battered several boats against shore and capsized a few sail boats. Lightning struck barn, setting fire to structure, which burned to ground and destroyed all contents stored inside causing estimated $30,000 loss.
NEBRASKA Ord (southwest of), Valley County	23	5-6 p.m.	13	880			6	3	Hail	Hailstones 1 to 3 inches in diameter.
TENNESSEE Raleigh and Millington areas, Shelby County	23	5-9 p.m.					4	1	Wind, rain, and hail	Wind gusts to 50 m.p.h., ripped off roofing which let rain into furniture store. Power and telephone facilities in Memphis shut off for several hours.
MINNESOTA International Falls (northwest of), Koochiching County	23	7:10 p.m.			0	0	2	1	Waterspout and rain	Waterspout observed at Jack Fish Bay on Rainy Lake, 10 miles northwest of International Falls. Trees downed.
OKLAHOMA Goodwell (near), Texas County	23	8 p.m.	2	50	0	0	3	1	Tornado, rain, and hail	Tornado appeared over a plowed field just above ground, moved over highway sucking top off convertible, and struck farm 2 miles northeast of Goodwell. Considerable damage resulted to outbuildings and doors, windows, and roof of house. Several telephone poles broken off before it dissipated. Storm traveled northwestward.
IOWA Emmet County	23	Night					1	5	Hail and wind	Hail damaged farm crops.
IOWA Hastings, Mills County	23	Night				1	2	1	Wind	Wind damaged farm buildings and injured occupant of house.
OKLAHOMA Gage, Ellis County	23	Night			0	0	2	1	Tornado (suspected), wind, and electrical	Severe wind, may have been tornado, accompanied by loud roar damaged trees, roofs, and outbuildings.
	23									Minor storms also reported at Russellville, Ark.; at Macon, Ga.; at Sibley, Iowa; near Jetmore and Dodge City, Kans.; at Joplin, Mo.; and at Broken Bow, Buffalo, and Tulsa, Okla.
OHIO Northern portion	23-24					Few	5		Wind, rain, and electrical	Damage extensive, mainly to trees, utility lines, houses, etc. Thunderstorms accompanied by moderately heavy rain and strong winds over much of northern Ohio starting about 4:30 p.m., on 23d and continued on 24th. In Elyria, damage best reported, and apparently most extensive, occurring mostly on 23d. Similar damage, however, occurred in Norwalk, Lima, Conneaut, Shelby, Fostoria, Bowling Green, Mansfield, Ashland, Berea, and Van Wert. On 24th thunderstorms of nearly equal severity caused damage reported from Sandusky, Fostoria, Green Springs, Bucyrus, Mansfield, Ashland, Kenton, and Upper Sandusky. It would be impossible to estimate total damage from all storms which were part of same system.
MICHIGAN (Lower) Extreme southern portion	24	9 a.m.	180	*60	1	1	6	4	Wind, hail, rain, and electrical	Squall line first reported about 25 miles west of Lake Michigan at 9 a.m., and moved eastward across the extreme southern portion of Lower Michigan,

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MICHIGAN (Lower) (Cont'd)										reaching eastern border about noon. Most localities within 60 miles of Indiana-Ohio borders reported scattered wind damage and severe damage occurred in a few communities, especially in Battle Creek area. Damage reported to homes, farm and commercial buildings, power- and communication lines, and trees. Hail and wind also caused scattered crop damage.
ILLINOIS	24	Morning-late afternoon					4	5	Hail, wind, electrical, and rain	Hail damage mostly in 3 areas; southern Carroll County in morning; Hoopeston and Buckley areas, Vermilion and Iroquois Counties in midafternoon; Sparta and Centralia areas, Randolph and Marion Counties, in late afternoon.
TENNESSEE Knoxville and vicinity, Knox County	24	2:30 p.m.				1	3		Electrical and rain	Lightning struck school smokestack, showering bricks to roof. 15 telephone lines knocked out.
MISSOURI Jefferson City, Cole County	24	Afternoon							Rain	Up to 5.75 inches of rain fell. Heavy damage from flash floods.
NEBRASKA Sidney (15 miles northwest of), Cheyenne County	24	Afternoon	Short	Narrow	0	0			Tornado	Funnel cloud observed by several persons; touched ground only in uninhabited area; moved northeastward.
INDIANA Tocsin area, Wells County	24	5 p.m.	3		0	0	3	1	Tornado, wind, and rain	On north edge of town trees and barn roof destroyed. On highway 1/4 mile west of Tocsin automobile lifted and placed in ditch. Storm moved south-southeastward.
MISSOURI Central and southeastern portions	24	Late afternoon-evening							Wind, rain, hail, and electrical	Numerous trees and powerlines downed.
INDIANA Hendricks County	24	6 p.m.					3	4	Wind, hail, rain, and electrical	Strong winds responsible for damaging utility lines, automobiles, and TV antennas. Hail loss to crops most severe along line from Stilesville to North Salem.
INDIANA Greensburg, Decatur County	24	7 p.m.					4	3	Wind, hail, rain, and electrical	Severe thunderstorm moving southeasterly carried winds which damaged house roofs, TV antennas, trees, and utility lines in area of 7 or 8 square miles. Hail damaged some crops.
INDIANA Evansville, Vanderburgh County	24	9-9:30 p.m.					4	1	Wind, rain, and electrical	Along river front squall sunk 2 river craft and damaged others.
INDIANA Hamilton, Tipton, and Clinton Counties	24	Evening					1	4	Hail, rain, and electrical	Hail up to 2-1/2 inches in diameter damaged many acres of crops. Most severe damage in Ekin area.
MISSOURI Woolridge, Cole County	24	Night							Rain, wind, and hail	4 inches of rain and some hail. Trees downed.
	24									Minor storms also reported near Oxford, Ala.; near Attica, at Martinsville, and at Pence, Ind.; at Benton, Iowa; near St. Francis, Kans.; near Lawrenceburg and in Oldham and Shelby Counties, Ky.; at Ismay, Mont.; at Cashion, Enid, and Stroud, Okla.; in Westminister-Oakway areas, S.C.; in Tiptonville area, Tenn.; and at Parkersburg, W. Va.
SOUTH DAKOTA Northeastern portion	25	5-6:30 a.m.					3		Electrical and hail	Occurred at Bristol and Waubay, Day County; Arlington, Kingsbury County; and Milbank, Grant County. Lightning caused roof and electrical damage over 100-mile wide area.
NORTH CAROLINA Greene, Pamlico, Lenoir, and Lee Counties	25	2-4 p.m.					3	4	Hail and wind	Light structural damage from wind, and widespread hail damage to crops.
MONTANA Peerless to Four Buttes, Daniels County	25	2:30 p.m.	15	*2			1	4	Hail and electrical	Hail 1/4 inch in diameter caused up to 100 percent damage in storm center. Storm moved southeastward.
SOUTH CAROLINA Little Rock area, Dillon County	25	2:30 p.m.	2	200	0	0	3	3	Tornado, hail, wind, and rain	Small tornado moving southeastward destroyed or damaged a number of tobacco barns and tenant house and blew down a number of telegraph poles. Crop damage by hail.
KANSAS Zook area, Pawnee County	25	5-6 p.m.						1	Hail, wind, and rain	3 hailstorms covered southern part of Pawnee County. Hailstones larger than golf balls fell in first storm. Most wheat already cut, any remaining uncut damaged beyond any harvest value. Driven by winds

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										of 70 m.p.h.; hail damaged window screens and stripped trees of foliage. Local heavy rains of 3 to 4 inches accompanied storm. Storms moved eastward.
MINNESOTA Ivanhoe area, Lincoln County	25	6 p.m.			0	0	5	5	Tornado (suspected), wind, rain, hail, and electrical	Wind destroyed buildings on 8 farms. Several cattle killed. In town, trailer home tipped over. Utilities out 3 hours after storm. Other town damage light. 8 inches of rain in 3 to 3-1/2 hours caused most of crop damage. Storm moved eastward.
MINNESOTA Mapleton and Ceresco Townships, Blue Earth County	25	7 p.m.	6	*2-1/2			1	5	Rain, hail, and electrical	Heavy rain, unofficial 3 to 4 inches, accompanied by hail as large as golf balls laid-by and stripped crops. Storm moved eastward.
MINNESOTA Minneapolis-St. Paul	25	7:30 p.m.					5	1	Rain	Cloudburst damaged streets in excess of $100,000. Many basements flooded. Traffic paralyzed in low areas. Storm moved eastward.
OKLAHOMA Guymon, Texas County	25	8:45 p.m.			0	0			Tornado, hail, wind, and rain	Highway Patrol reported funnel aloft over northern edge of Guymon. Heavy hail reported to have knocked holes in roofs. Storm moved southeastward.
IOWA Lyon to Kossuth Counties	25	9 p.m.				1	4	3	Wind and rain	Wind destroyed barn, killing some livestock. Man injured when lawn hammock picked up and dropped.
KANSAS McPherson (15 miles southeast of), McPherson County	25	9 p.m.			0	0			Tornado and electrical	Funnel cloud reported by oil company workers touching ground, dissipated without damage.
NEBRASKA Hendley (near), Furnas County	25	11 p.m.	16	20	0	0	4	1	Tornado, wind, hail, and electrical	Some buildings burst outward. Length and width of path positively indicate this storm was tornado. Storm moved southeastward.
KANSAS Norton County	25	Evening			0	0		1	Tornado, wind, and rain	High winds caused minor damage in Norton, and damage to trees and buildings at farmhouse a few miles northwest of Norton indicated tornadic action.
NEBRASKA Meadow Grove, Madison County	25	Evening			1		3	1	Wind	Man killed when storm felled tree on his trailer-house.
COLORADO Alamosa, Alamosa County	25				0	0			Tornado	Small twister went through eastern Alamosa, breaking limbs off trees, breaking windows, and damaging cars.
COLORADO Washington, Phillips, and Yuma Counties	25								Hail, wind, and rain	Severe hail- and windstorm caused 75 to 100 percent losses. Winter wheat was just ready to harvest.
	25									Minor storms also reported at Jonesboro, Ark.; at Savannah, Ga.; at Council Bluffs, Iowa; at Cape Girardeau and Springfield, Mo.; near McCook, Omaha, and Tilden, and in Webster County, Nebr.; at Vinita, Okla.; in Conway area, S.C.; and in St. Albans area, Vt.
KANSAS Southwestern and south-central portions	25-26	6:40p.m. 25th-2:10 a.m. 26th							Wind and dust	Black roller duster from north hit Syracuse, Hamilton County, about 6:40 p.m., and Elkhart about 8 p.m. Further east in Barber and Harper Counties duststorm occurred about 1 to 2 a.m., of 26th. Visibility for short time reported as zero. Traffic halted on main highways at times. Storm moved southeastward.
KANSAS Northeastern and north-central portions	26	Midnight-early a.m.			0	0			Tornado and wind	Scattered damage resulted from severe winds over northern part of Kansas in connection with squall line passage. Minor wind damage to buildings, trees, and transmission lines reported at Salina about 12:30 a.m., Clay Center about 1:30 to 2:30 a.m., Topeka about 3 a.m., and at Leavenworth early in morning. Small tornado struck farm plant about 4 miles northeast of Frankfort at about 2 a.m., destroying large recently constructed building and 1,500-bushel granary; fruit trees leveled and side winds caused additional damage in vicinity. Storm moved eastward.
IOWA Ogden (7 miles southeast of), Boone County	26	3:30 a.m.					4	1	Electrical	Lightning destroyed barn and contents.
MICHIGAN Van Buren, Berrien, and Cass Counties	26	1:42 p.m.	**200	6	0	0	2	1	Tornado and rain	Funnel formed aloft southwest of Niles and moved northeastward to near Lawton, dipping to surface briefly once near Niles and wrecking tool shed and picking up several heavy oil drums. Heavy rain occurred near Lawton where funnel dissipated.
INDIANA South Bend area, St. Joseph County	26	2 p.m.			0	0			Tornado	Tornado sighted aloft northwest of South Bend; it then moved northeastward between South Bend and Niles, Mich., and on into Michigan.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage bu categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OHIO Maineville, Warren County	26	2:10 p.m.	2	50	0	0	3	2	Tornado (suspected)	Several residents reported seeing "whirling mass" of debris, branches, etc., about 50 to 150 feet wide accompanied by loud roar. First evidence of damage about 1-1/2 miles southwest of Maineville where top of silo and large barn door blown off. Next damage in northeastward line near center of town where large tree lifted out of ground and blown over. Storm moved further northeastward, toppling a number of brick chimneys, splintering a number of trees, and unroofing outbuildings. In this area small piece of wood 3/4 inch in diameter and 1 foot long was blown through side of house and a splinter 1 inch long and 1/16 inch in diameter was driven into wood siding of house. Further northeastward trees in orchard uprooted and 1 shorn off about 10 feet above ground.
VIRGINIA Danville, Pittsylvania County	26	4 p.m.						3	Wind and rain	Thunderstorm preceded by gusts hitting 50 m.p.h. Temperatures dropped 20° between 4 and 5:15 p.m. A few roofs and telephone and powerlines damaged; some trees blown over.
ARKANSAS Lonoke, Pulaski, and White Counties	26	4:15 p.m.	42				4	1	Wind, electrical, and rain	Considerable damage to buildings and trees, including large shed and stored boats at factory in Little Rock. Storm moved northeastward from Little Rock and Lonoke areas to Garner.
MISSOURI Lebanon, Laclede County	26	4:30-5:15 p.m.							Wind, rain, and electrical	Wind hit 85 m.p.h., in gusts. Trees downed, and airplane and several cars damaged. Storm moved southeastward.
ARIZONA Globe, Gila County	26	Late afternoon			0	0	3		Dust devil and wind	All reported damage occurred when rear wall of unoccupied church collapsed. Storm moved southeastward.
FLORIDA Bartow, Polk County	26	5:50-6 p.m.	2	75-100			4		Wind	Violent winds with heavy thunderstorm demolished drive-in theater screen, damaged lumberyard and skating-rink tent. Storm moved northward.
ARKANSAS Parkin, Cross County	26	6 p.m.				1	3	1	Wind and rain	Damage to roofs, trees, and powerlines.
MICHIGAN (Lower) Southern and central portions	26	Day-evening			0	0	4	4	Electrical, wind, tornadoes, rain, and hail	Severe thunderstorms caused scattered property damage and downed many utility lines, mainly in southwestern and west-central portions. About a dozen head of cattle reported killed by lightning. Funnels aloft reported near St. Joseph, Cascade, and Lake Odessa.
MICHIGAN Gratiot County	26	7:20 p.m.	8		0	2	5	4	Tornado, wind, rain, and hail	Storm apparently originated near Perrinton and moved northeastward through rural areas. Several farms badly damaged, 11 buildings downed, about 50 others damaged. At least 2 persons reported seeing funnel cloud, according to report from sheriff.
WEST VIRGINIA Jackson County	26	Late p.m.							Wind, electrical, and rain	Damage considerable to greenhouse where 200 panes of glass broken. 4 farmhouse roofs damaged by trees falling on them. In Fairplain and Parchment Road areas.
NORTH CAROLINA Rowan County	26	Night			1				Electrical	Man working on fence killed by lightning.
FLORIDA Miami (15 miles southwest of), Dade County	26								Tornado	Pilot sighted tornado. No damage as funnel cloud occurred over uninhabited area.
FLORIDA Altha, Calhoun County	26				1				Electrical	Woman killed by lightning bolt as she sat under tree during electrical storm.
FLORIDA Lake County	26				1		2		Electrical and rain	Heavy thunderstorm with lightning and heavy rain caused widespread but relatively minor damage. Man struck and killed by lightning as he was operating tractor.
FLORIDA Jacksonville area, Duval County	26					1	4		Electrical, wind and hail	High winds uprooted trees and tore down drive-in theater screen. At Jacksonville Beach, woman seriously injured when struck by bolt of lightning.
FLORIDA De Land, Volusia County	26						4		Wind, rain, hail and electrical	Considerable street flooding. High winds knocked down a number of trees.
INDIANA La Porte, La Porte County	26						4	1	Electrical and rain	Lightning and resulting fire burned home.
	26									Minor storms also reported at Red Bay, Ala.; at Russellville, Ark.; in Fremont County, Colo.; at Valparaiso, Ind.; at Prescott and near Red Oak, Iowa; at Cape Girardeau, Charleston, and Norborne,

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
Minor storms (Cont'd)	26									Mo.; at Dyersburg, Tenn.; and in Brown, Kewaunee, and Manitowoc Counties, Wis.
NEBRASKA Superior (east of), Nuckolls County	27	12:10 a.m.					1	6	Hail	Hailstones up to 1-1/2 inches in diameter.
NEBRASKA Wilber (south of), Saline County	27	Early a.m.					1	4	Hail	Hailstones 1/2 to 1 inch in diameter.
SOUTH DAKOTA Spencer, McCook County	27	4:30 a.m.					4		Electrical	Lightning set fire to south corner of 75-foot quarry building.
CONNECTICUT Fairfield County	27	2 p.m.					5	1	Electrical, wind, and rain	House struck by lightning and burned with estimated loss of $100,000 in village of Byram, town of Greenwich. 100 telephones and power services knocked out for 2 hours.
KANSAS Garnett (near), Anderson County	27	3 p.m.			0	0			Tornado and wind	Small funnel aloft observed south of Garnett. Side winds caused some tree and crop damage.
MISSOURI Kansas City, Jackson County	27	3 p.m.					6		Wind, rain, and hail	Wind hit 115 m.p.h., at Fairfax Airport. Storm moved eastward.
OKLAHOMA Woodward, Woodward County	27	3 p.m.					5		Hail, wind, and rain	Marble-sized hail fell for an hour, covering ground. Preliminary reports indicated only minor damage, but after investigation extensive damage noted to trees, shrubs, gardens, neon signs, windows, and roofs.
NORTH CAROLINA Johnston, Robeson, Hoke, Cabarrus, Sampson, Durham, and Anson Counties	27	3-6 p.m.				1	4	4	Hail, wind, and electrical	Roofs and tobacco crop damaged by hail. Scattered light damage by lightning and wind. Man hurt by falling stone, struck from building by lightning.
OKLAHOMA Nowata County	27	3:24 p.m.			0	0		1	Tornado, hail, electrical, wind, and rain	Tornado struck rural home 5 miles northwest of Nowata, causing damage to TV antenna, trees, and scattered small articles. Heavy hail fell at Alluwe. Lightning struck tree and utility lines northeast of Nowata. Storm moved southwestward.
KANSAS Northeastern portion	27	Afternoon				2		1	Wind, rain, and electrical	High winds over Shawnee, Douglas, Leavenworth, Wyandotte, and northern Johnson Counties damaged trees, communication lines, and houses, and knocked down some corn. Kansas Power and Light Company suffered greatest loss in that area in 10 years, with approximately 10,000 telephones out of operation and 200 high voltage or primary circuits out of service. Storm first noticed on radar in north-central Kansas about noon and with rapid development progressed eastward. Winds of 115 m.p.h., registered at Fairfax Airport, Kansas City, Kans., where storm hit about 1:40 to 2:15 p.m. Telephone and communication lines broken by falling trees and limbs, and in some cases poles snapped off. All service not restored for 2 days. Orchards suffered great deal from loss of fruit and broken trees. 2 construction workers on Turnpike near Lawrence slightly injured by flying boards. Numerous roads and streets blocked by fallen trees.
KANSAS Eastern portion	27	Afternoon							Wind and hail	Occasional damage from winds and some hail reported from various localities from near Emporia east and south. Power-and communication lines occasionally broken, and blowing dust reduced visibility for a few minutes. Harvest interrupted and some hail damage done to crops east of Emporia.
MISSOURI Springfield, Greene County	27	Late afternoon			3				Wind and rain	Trees and powerlines downed.
KANSAS Central portion	27	Afternoon-night				1			Wind, electrical, and rain	High winds and lightning caused some damage to power and communication lines and to trees, TV antennas, and electrical appliances, especially in Dickinson and Clay Counties. Man injured by lightning in Stafford County.
MISSOURI Washburn, Barry County	27	4:30-6:30 p.m.			0	0			Tornadoes, wind, and rain	2 funnels, 20 miles east of Washburn, and 10 miles west of Washburn. Golf-ball size hail and 5 inches of rain. Storm moved eastward.
OKLAHOMA Muskogee, Wagoner, Cherokee, Tulsa, Rogers, and Mayes Counties	27	4:30-11p.m.			0	0	5	1	Tornadoes, wind, electrical, hail, and rain	Squall line with excessive winds, hail, rain, and funnels aloft lashed large area of east-central. Strong winds struck Fort Gibson Lake between Wagoner and Cherokee Counties about 4:30 p.m., causing damage or destruction to 100 boats and 20 boat docks, and sunk $15,000, 56-foot luxury

See reference notes at end of table.

Place	Date	Time	Length of path miles	Width of path, yards	Number of persons Killed	Number of persons Injured	Estimated damage by categories † Property (exclusive of crops)	Estimated damage by categories † Crops	Character of storm	Remarks
OKLAHOMA (Cont'd)										houseboat. Funnels aloft sighted at 8:50 p.m., between Haskell and Leonard; at 9:15 p.m., between Coweta and Wagoner, and at 10:40 p.m., between Muskogee and Wagoner. Numerous lightning strikes noted in Tulsa, Claremore, and Pryor causing minor damage. Other wind damage to trees and utility lines reported over area. Storm moved eastward.
NEW HAMPSHIRE Manchester, Hillsboro County	27	4:31 p.m.	1/16	25	0	0	2	1	Tornado, wind, and rain	Funnel did not quite touch ground; rotation of debris observed. Destructive wind only in very small area. Heavy granite chimney cap lifted and dropped through apartment building. Storm moved north-northeastward.
OKLAHOMA Woods and Alfalfa Counties	27	8 p.m.						1	Wind, rain, and electrical	Severe thunderstorm with high winds and heavy rain caused extensive damage to trees, windows, and TV antennas in Alva, Capron, Dacoma, and Cherokee. Farm house 5 miles northwest of Cherokee had roof partially blown off by twisting winds; heavy water damage resulted to interior of house. Storm moved northeastward.
OKLAHOMA Sallisaw, Sequoyah County	27	10:30 p.m.					3	1	Wind, rain, hail, and electrical	Severe thunderstorm hit Sallisaw, causing minor damage to trees and utility lines. Strong winds up to 65 m.p.h., caused some roofs to leak, resulting in water damage. Storm moved south-southwestward.
OKLAHOMA Payne County	27	11 p.m.			0	0		1	Tornado, wind, electrical, and rain	Funnel aloft sighted by ground observer corps north of Stillwater. Cushing hit by strong winds and severe electrical storm. Lightning struck power meter at ice plant, and house had 2 large holes torn in walls. Strong wind caused minor property damage, and utility lines received damage from uprooted trees and falling branches. Storm moved southeastward.
ARKANSAS Tontitown, Washington County	27	P.m.							Wind and hail	Wind accompanied by hail up to size of golf balls caused extensive damage to vineyards; also considerable damage to roofs by wind and hail.
	27									Minor storms also reported at Opp, Ala.; in Kiowa County, Kans.; at Sedalia and West Plains, Mo.; near Deshler and Lincoln, Nebr.; at Langley, Ponca City, and Vinita, Okla.; and from Mars Bluff to Dillon, S. C.
OKLAHOMA Shawnee area, Pottawatomie County	28	12:24 a.m.			0	0			Tornado	Highway Patrol sighted funnel aloft north of Shawnee.
MONTANA Baylor (near), Valley County	28	10:30 a.m.	6	*1	0	0	3	3	Hail, wind, rain, and tornado (suspected)	Hail up to 3/4 inch in diameter caused scattered small grain damage; wind destroyed several farm outbuildings. Probable funnel aloft. Storm moved eastward.
SOUTH DAKOTA Central and eastern portions	28	Noon-evening					3		Wind and hail	Strong gusts caused minor damage all across State. Windmills downed near Miller and Madison. Hail in extreme east caused most crop damage.
ARIZONA Peoria, Maricopa County	28	6-9 p.m.					4		Wind and rain	Most damage occurred when gin in Peoria collapsed under wind. Storm moved southward.
NEBRASKA Ragan (2 miles north of), Harlan County	28	Evening	7	*1-2			1	4	Hail	
NEBRASKA Superior (near), Nuckolls County	28						1	4	Hail	Hailstones 1-1/4 inches in diameter.
	28									Minor storm also reported at Opp, Ala.
ALABAMA Mobile, Mobile County	29	1:30 p.m.			1				Electrical and rain	Man on sewer construction project killed by lightning as he took refuge from rain under a tree.
NORTH CAROLINA Pender, Sampson, and Jackson Counties	29	3-4 p.m.						5	Hail	Tobacco and corn damaged.
GEORGIA Augusta, Richmond County	29	4:30 p.m.			1		3	1	Rain, wind, and electrical	Violent thunderstorm, heavy rain, and wind caused damage to utility lines, trees, and some structures. 5-year-old boy drowned when washed away by flash flood. Night club destroyed by fire after being struck by lightning; loss estimated at $15,000.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
NEBRASKA Ord (6-8 miles south of), Valley County	29	5:30-6 p.m.					1	6	Hail	Much corn stripped and wheat shattered.
SOUTH DAKOTA Extreme eastern portion	29	6:30-7:30 p.m.			1	1	4		Tornado, electrical, and hail	Lightning killed boy standing by truck in farmyard 6 miles northwest of Gary. Tornado demolished farm buildings 1/2 mile northeast of Wentworth. 2 house trailers wrecked south of Flandreau, injuring occupant. Farm buildings in area damaged.
MINNESOTA Luverne (5 miles northwest of), Rock County	29	7:30 p.m.			0	0			Tornado, hail, wind, rain, and electrical	Barns and outbuildings on 3 farms left in splinters, no farm homes hit. Hail, some as large as 2-1/2 inches in diameter, damaged small grain and corn over 20-square mile area. Storm moved eastward.
	29									Minor storms also reported at Curry, Ala.; in Dickinson and Emmet Counties, Iowa; and at Marysvale, Utah.
MISSOURI St. Joseph, Buchanan County	30	12:30 a.m.							Wind	Wind hit 51 m.p.h., at Rosencraus Field.
IOWA Soldier, Monona County	30	5 a.m.	10	880			1	4	Hail	Hail damaged growing crops. Storm moved northeastward.
MINNESOTA Rochester area, Olmsted County	30	1 p.m.			0	0			Tornado	Pilot reported funnel cloud 30 miles southwest of Rochester, did not touch ground. At 1:30 p.m., ground observer saw funnel touch ground briefly 12 miles southwest of Rochester.
SOUTH CAROLINA Marion to Mullins, Marion County	30	Afternoon						5	Wind, rain, and electrical	Heavy winds and rains accompanied thunderstorm, causing significant damage to tobacco. (100 acres of tobacco destroyed.)
WISCONSIN Polk, St. Croix, and Vernon Counties	30	10 p.m.							Wind and hail	Hail to 1-1/2 inches in diameter. Storm moved eastward.
GEORGIA Pendergrass, Jackson County	30	P.m.					4	1	Wind and rain	2 chickenhouses, each containing 8,000 broilers, destroyed and 1 other building badly damaged.
MINNESOTA Stacy area, Chisago County and St. Cloud, Stearns County	30	P.m.	16	*1			3		Hail, rain, wind and electrical	Hailstorm hit crops on 110 farms. Near St. Cloud roof of barn ripped off. Winds observed 65 to 70 m.p.h.; 1.35 inches of rain fell in 20 minutes. Storm moved southeastward.
	30									Minor storm also reported in Fayette County, Ky.
DELAYED REPORT										
	May 4									Minor storm in Canyon and Gem Counties, Idaho.

C Crop damage included with property damage.
* Miles instead of yards.
** Yards instead of miles.

† This is a new form of presentation of storm damage estimates. The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total, storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

TROPICAL STORM OF JUNE 12–14, 1956

A tropical storm developed over the Gulf of Mexico on June 12 near latitude 23°N. and longitude 96°W. It was the result of a combination of an easterly wave and a cold low aloft, and retained both tropical and extratropical characteristics. The rainfall was tropical, but never formed the bands characteristic of tropical storms. There was never a definite calm center or eye observed. Temperatures aloft over the low remained as cold or colder than in the surrounding air.

Four persons were drowned, three of them on a tug which sank off the Mississippi coast and one truck driver when his truck skidded on the bridge over Lake Pontchartrain and plunged into the lake. The bridge was damaged by the truck, but more seriously by a loose barge. The total damage to the bridge has been estimated at $12,000.

Tides generally ranged from 2 to 4 feet above normal along the Louisiana and Mississippi coasts. The Freeport Sulphur Company suffered some damage to their sulphur mines near the coast south of Houma, La., where the tide was 4½ feet above mean sea level. Minor damage to the beach, small boats, and piers occurred along the Mississippi coast in places where tides reached as much as 5 feet above mean sea level.

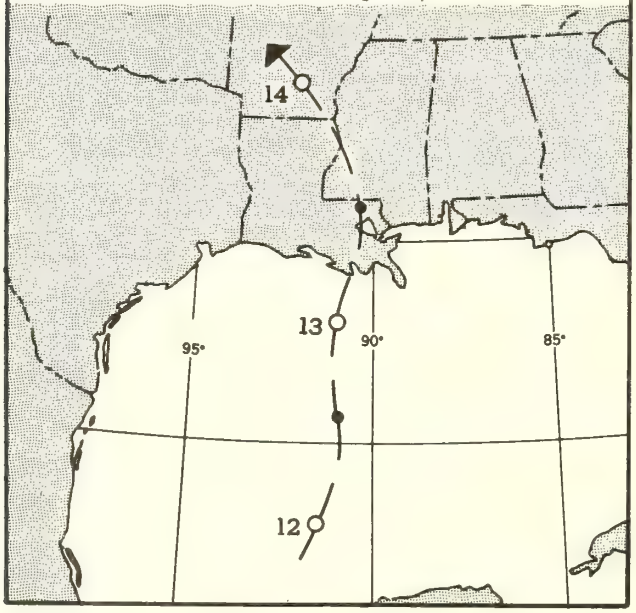
The highest wind reported ashore was 55 m.p.h. from the east at Grand Isle, La., at 7:15 a.m., c.s.t., on the 13th. A boat 5 miles south of Pilottown, La., reported gusts to 60 m.p.h. from the south-southeast. The highest measured tide was 4.7 feet above mean sea level at Biloxi, Miss.

The lowest observed pressure was 29.66 inches at Moissant Airport, New Orleans, La., and at McComb, Miss. The heaviest rain was within 100 miles east of the storm track and decreased from 6.13 inches at Grand Isle, La., as the storm moved inland, to 5.60 inches at Monticello, 3.17 inches at Jackson, and 1.60 at Greenwood, Miss. The benefit to crops from these rains, which ended a drought, probably exceeded property losses from wind and water on the coast.

The track of this tropical storm is shown in the accompanying chart.

TRACK OF TROPICAL STORM OF JUNE 12-14, 1956

Open circles on track indicate locations of center at 7 a.m., E.S.T., of date entered nearby; solid circles on track indicate locations of center at 7 p.m., E.S.T.



GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JUNE 1956

The generally high flows in the Columbia River Basin in late May and early June produced high stages along the main stem of the Columbia River in the first days of June. The crest passed Vancouver, Wash., on the 3d and 4th. Total observed runoff near The Dalles, for the 3-month snowmelt period, April through June, was the second largest for this period, since the record began in 1878, being exceeded only by the flow in 1894.

The overflows reported in the Upper White and East Fork of White River Basins in Indiana in late May, continued downstream, and during the first week in June, produced the highest observed stages in recent years, on the low reaches.

Elsewhere, about the only other flooding reported was due to flash floods.

The continued drought in many sections of southern United States resulted in record and near-record low-flow being reported in various streams in Arizona, Texas, Oklahoma, Alabama, South Carolina, and north-central Virginia. The famous Comal Springs at New Braunfels, Texas, ran dry for the first time known.

ATLANTIC SLOPE DRAINAGE

Rainfall averaging 2 to 3 inches over Cape Fear, Neuse, and Tar River Basins on the 2d, caused substantial rises on these streams. Since all streams were at fairly low levels, before the rain, the only overflow occurring was at Smithfield, N. C., on the Neuse River. Overflow was minor and no damage was reported.

EAST GULF OF MEXICO DRAINAGE

Light overflow with no damage resulting occurred at Bogalusa, La., on the Pearl River on the 16th to the 18th.

UPPER MISSISSIPPI BASIN

Only minor flooding with no damage, occurred on the 2d at Pacific, Mo., on the Meramec River.

Missouri Basin.--Light overflows were reported along Big Hole and Jefferson Rivers during the period 1st through 6th. No damage occurred.

The Sun and Missouri Rivers overflowed low areas in the vicinity of Great Falls, Mont., on the 3d and 4th. Only minor damage was caused.

Several minor crests moved down the main stem of the Yellowstone River during the month. The most important one passing Corwin Springs, Mont., on the morning of the 2d at a stage of 9.6 feet. The crest reached Livingston, Mont., on the afternoon of the 2d at a stage of 9.3 feet. The rise reached Billings, Mont., on the morning of the 3d, holding a sustained crest, between 11.2 and 11.3 feet, until the evening of the 4th. A general falling trend followed with only minor fluctuations during the remainder of the month. Minor lowland flooding extended downstream from Billings for about 70 miles and upstream to a point just above Livingston.

Heavy rains caused flash flooding on the 6th, along Spring Creek, a tributary to Big Beaver Creek, in the vicinity of Linton, N. Dak. Farm lands north and east of Linton and six blocks in the old part of the town were inundated. Damages were light.

Rainfall averaging 3 to 5 inches on the 5th and 6th over a local area south of Jamestown, N. Dak., caused overflow of small streams and on a 20 mile reach of the James River. The flood crest on the James was well below bankful stage before reaching the South Dakota state line.

A small dam on Clear Creek about 2 miles north of Georgetown, Colo., failed as a result of a rise from rapid snowmelt, sometime between 9:30 a.m. and 11:00 a.m. of the 4th. A former dam at this location washed out on June 10, 1952. Extremely warm temperatures on the 2d and 3d caused rapid melting of the snow pack in the mountains. The water behind the dam (300-400 acre-feet) rose to about 1 foot of the top of the dam on the 3d and remained there until failure of the dam at the spillway section. The flood crest arrived at Golden, Colo., at 2:30 p.m. on the 4th and crested at 3:15 p.m., at a gage height of 6.9 feet. At the mouth of the creek the crest was at a gage height of 5.45 feet at 8 p.m. Ten small county bridges in the vicinity of Idaho Springs were destroyed and there was some highway damage. At Golden the crest came within 0.3 foot from the top of a concrete retaining wall near Ford Street. No damage occurred at Golden.

Heavy showers in the Middle Loup River Basin produced localized flooding on some small tributaries. Damage was insignificant. Unofficial rainfall reports indicated 4 to 5 inches of rain fell over the headwaters of Corporation Creek on the night of the 25th-26th. Flooding developed along the creek at Norfolk, Nebr. The overflow was of short duration, only lasting 3 to 4 hours. There was major damage to 5 homes and minor damage to 75 others as reported by the Red Cross.

Flash floods occurred at Natoma, Kans., on Paradise Creek on the 5th and at Wauneta, Nebr., on Frenchman Creek on the 17th. Flood waters at Natoma, a foot or more deep, spread over the business district and through portions of the residential area. The crest occurred about 3 a.m. of the 5th, reaching foundation levels in the business district and lapping at store entrances and flooding some basements. Flood waters receded rapidly and was off the streets by 7 a.m. Some farmland along the creek was also affected. Damages were light. Considerably greater damage occurred at Wauneta, Nebr., as a result of 4 to 5 inches of rain upstream on Frenchman Creek. About 2 inches was recorded locally at Wauneta in about a half hour. About 30 families were forced to leave their homes. The power plant was flooded, the telephone exchange disabled and water stood 65 inches deep in the Burlington Railroad depot. In the business district damage was fairly heavy. Losses are estimated at several hundred thousand dollars. Overflow along Frenchman Creek extended to Culbertson, Nebr., at the mouth of the stream. The resulting rise on the Republican River reached minor flood levels at Cambridge, Nebr., with little damage.

Minor overflow on the 1st with no damage was reported at Jerome, Mo., on the Gasconade River.

Ohio Basin.--On the evening of June 17 moderate to heavy thundershowers over the western Pennsylvania area produced flash flooding in the vicinity of McKeesport, East McKeesport, and White Oak, Pa., in Allegheny County. In Westmoreland County flash floods were reported at Irwin, Scottsdale, and Delmont, Pa. Considerable damage was reported.

Thundershowers hit western Pennsylvania again on June 22, 23, and 24. The greatest damage was reported at Slippery Rock, Harlansburg, Zelienople, and New Castle, Pa., and Washington, Claysville, and Mannington, W. Va. Slippery Rock and Neshannock Creeks destroyed five small bridges and flooded low-lying roads. Hundreds of campers were stranded including 175 small girls at the Salvation Army Camp at Wittenburg, Pa., requiring evacuation by rescue teams. Only minor rises occurred on the main rivers.

Heavy rainfall on the 17th and 18th brought the Scioto at La Rue, Ohio, to near flood stage and Paint Creek at Bourneville, Ohio, to slightly over bankful. A flash flood on the 22d was reported on Black Lick Creek, a tributary of the Big Walnut, resulting from a heavy thundershower on the night of the 21st. Estimated amounts of 4 to 5 inches of rain were reported. Numerous families were evacuated, a bridge destroyed and U. S. Highway #40 was flooded. Local flash flooding occurred in the vicinity of Paris, Ky., resulting from heavy rainfall in the Licking headwaters. There were unofficial reports of 6 inches of rain in the area.

Moderately high flood crests moving downstream from the headwaters of the White and Wabash Rivers at the end of May continued downstream during the first 10 days of June. Thousands of acres of corn, hay, soybeans, and other crops were submerged and crops were wholly or partially ruined. In the Petersburg, Ind., area, the Lamb Levee, 2 miles west of Petersburg, gave way at the height of the crest and flooded 4,000 acres. Flooding was generally less extensive on the Wabash between Terre Haute and Vincennes, Ind. It was most severe along most of the East Fork and along the White River from Indianapolis to the mouth and on the Wabash from the confluence of the White and Wabash downstream. In many instances crest stages were not far below those of major floods.

There was a prolonged period of showers from midmonth through the 26th which resulted in rises above flood stage at some points for a second time during the month. Flooding was on a much smaller scale than the earlier period and damage was mostly limited to a small amount of crop damage and some inconveniences due to highway inundation.

During this period of widespread showers a considerable number of heavy local showers occurred. On the 19th, at West Baden, Ind., 4.04 inches of rain was recorded in a period of about 2½ hours. At the Indianapolis Fall Creek Pumping Plant, 3.49 inches of rain fell in a 1½ hour period late on the 18th. An unofficial measurement of 7 inches was reported at Linton, Ind., on the 21st. Linton was isolated for several hours when Black Creek overflowed. Two separate showers, each with 6 to 8 inches of rain, hit the little hamlet of Hope, Ind., on Haw Creek, located northeast of Columbus. These flash floods, while limited in extent, did cause considerable damage.

PACIFIC COAST DRAINAGE

Columbia Basin.--A generally slowly falling trend was observed in the Kootenai River throughout the month. A few secondary crests were noted with the highest crest on the 3d and 4th. The flooding in May was more extensive and the damages were inflicted in May. The flood waters on Pend Oreille River this month did not cause any damage.

Some flooding beginning late in May, continued along the Snake River in the vicinity of Roberts and Heise, Idaho, and on the Salmon River in the vicinity of Challis and Salmon, Idaho. The river fell below flood stage at Salmon on the 6th and at Heise, the Snake crested at 9.2 feet from 8 a.m. of the 4th to 4 p.m. of the 6th. Recession was slow and at the end of the month, water still stood in many fields in the Roberts area, downstream from Heise. Runoff at Heise was the highest since 1927 and the 4th highest of record for June.

At Portland, Oregon, the river fell below the flood stage of 18 feet on June 28 but lingered above flood stage of 15 feet at Vancouver, Wash., into July. At Portland the river was above flood stage for 52 days and at Vancouver for 71 days. Observed peak stage at The Dalles was 150.10 feet at 11 p.m. of the 2d; discharge was 823,000 cfs. The high water in the lower Columbia River caused some curtailment of activities to shipping and manufacturing interests in the dock area. Freight and cargo stored on low and intermediate docks had to be removed. Considerable sandbagging was required and river traffic was compelled to slow up. The actual damage was relatively small in view of the flood potential which existed. Long range flood and volume forecasts had wide dissemination to all Federal, State and local agencies, private interests, and general public. Early protective planning and initiation of action were undertaken and carried out, keeping losses to a minimum.

FLOOD STAGE DATA

Table 5 (All dates in June unless otherwise specified) JUNE 1956

River and station	Flood stage	Above flood stages -dates		Crest	
		From–	To–	Stage	Date
	Ft.			*Ft*	
ATLANTIC SLOPE DRAINAGE					
Neuse: Smithfield, N. C.	13	[illegible]	5	15	4
EAST GULF OF MEXICO DRAINAGE					
Pearl: Bogalusa, La.	15	[illegible]	18	[illegible]	17
MISSISSIPPI SYSTEM Upper Mississippi Basin					
Meramec: Pacific, Mo.	11	2	2	12.5	2
Missouri Basin					
Yellowstone: Billings, Mont.	11	3	4	11.3	3,4
Stinking Water Creek: Palisade, Nebr.	-	-	-	8.5	17
Frenchmen Creek: Palisade, Nebr.	4	-		8.76	17
Republican: Cambridge, Nebr.	6	18	20	7.2	18
N. Fk. Solomon: Downs, Kans.	18	22	23	20.51	22
Gasconade: Jerome, Mo.	15	1	1	16.9	1
Ohio Basin					
Paint Creek: Bourneville, Ohio	10	20	21	10.45	21
East Fork:					
Seymour, Ind.	14	1 23	1 24	18.1 15.6	May 30 23
Bedford, Ind.	20	1	6	23.5	2
Williams, Ind.	10	2	3	10.9	3
White:					
Spencer, Ind.	14	1	3	21.8	May 31
Elliston, Ind.	18	1 23	4 24	25.7 18.7	1 24
MISSISSIPPI SYSTEM (Cont'd.) Ohio Basin (Cont'd.)					
White (Cont'd.):					
Edwardsport, Ind.	15	[illegible] 23	[illegible] [illegible]	21.8 17.6	[illegible] [illegible]
Petersburg, Ind.	16	2	3	22	[illegible]
Wabash:					
Wabash, Ind.	12	1	1	12.86	1
Montezuma, Ind.	14	1	2	19.98	May 29
Terre Haute, Ind.	14	1	4	16.7	1
Mount Carmel, Ind.	17	5	8	19.3	7
PACIFIC SLOPE DRAINAGE Columbia Basin					
Kootenai:					
Libby, Mont.	16	[illegible]	6	17.2	3
Bonners Ferry, Idaho	31	1	9	35.9	4
Pend Oreille: Newport, Wash.	19	1	14	52.4	5-6
Willamette: Portland, Oreg.	18	April 20	23	26.4	4-6
Columbia:					
Umatilla, Oreg.	25	1	8	26.3	2
Vancouver, Wash.	15	April 24	July 2	26.8	4-5
Ridgefield, Wash.	20	May 23	19	25.1	4-6
St. Helens, Oreg.	20	May 22	20	25.5	5-6

* Provisional

RAWINSONDE DATA

Average monthly values

Table 20

JUNE 1956

ALBANY, N. Y. (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	86	17.4	76	254	3.1
1,000	28	120			254	3.3
950	28	565	17.3	61	263	8.5
900	28	1,021	14.9	62	262	8.4
850	28	1,502	11.6	64	274	9.1
800	28	2,007	8.7	57	268	10.9
750	28	2,548	6.1	50	272	13.8
700	28	3,101	3.3	44	277	14.4
650	28	3,703	.3	37	272	15.9
600	28	4,337	- 3.3	37	272	17.9
550	28	5,021	- 7.1		268	19.8
500	28	5,757	-11.7		271	21.8
450	27	6,566	-17.2		267	23.9
400	27	7,428	-23.3		272	26.8
350	27	8,391	-30.3		272	28.6
300	27	9,468	-38.6		270	28.0
250	27	10,693	-48.4		273	30.9
200	27	12,132	-56.8		278	38.7
175	27	12,973	-58.7		279	32.8
150	26	13,940	-59.7		279	27.2
125	25	15,076	-60.6		279	21.0
100	25	16,460	-61.1		283	11.7
80	24	17,854	-58.9		306	4.9
60	23	19,668	-56.2		58	4.7
50	23	20,839	-54.8		70	8.9
40	22	22,262	-53.2		89	13.0
30	19	24,121	-50.8		86	15.7
20	8	26,740	-48.0			

ALBUQUERQUE, N. MEX. (838 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,619	26.1	27	126	3.5
1,000	30	18				
950	30	488				
900	30	976				
850	30	1,488				
800	30	2,024	24.5	25	196	3.1
750	30	2,585	20.0	26	244	4.5
700	30	3,173	14.8	32	250	5.6
650	30	3,797	9.1	39	257	7.2
600	30	4,451	3.4	46	262	9.1
550	30	5,148	- 2.7	57	256	10.5
500	30	5,897	- 8.9	64	253	10.5
450	30	6,716	-14.6	57	250	12.4
400	30	7,586	-20.8	47	252	13.0
350	30	8,558	-28.2		250	15.5
300	30	9,643	-36.6		247	21.2
250	29	10,877	-45.8		252	30.3
200	29	12,328	-55.6		258	33.0
175	28	13,167	-60.1		260	32.1
150	28	14,113	-64.3		261	25.8
125	27	15,221	-68.0		257	15.0
100	26	16,552	-69.2		220	6.0
80	23	17,892	-65.4		121	5.1
60	22	19,665	-60.0		85	10.1
50	21	20,806	-58.0		81	14.0
40	19	22,223	-54.7		88	20.4
30	17	24,073	-51.8		89	18.8

ANCHORAGE, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	14.2	52	219	5.8
1,000	30	75			206	6.4
950	30	505	9.7	58	173	6.4
900	30	950	6.4	64	164	4.5
850	30	1,416	2.9	70	157	3.9
800	30	1,904	- .4	72	132	4.1
750	30	2,424	- 3.5	73	131	4.5
700	30	2,960	- 6.6	68	132	4.3
650	30	3,544	- 9.6	62	120	3.9
600	30	4,150	-13.0	60	110	3.5
550	30	4,809	-17.0	57	113	3.5
500	30	5,517	-21.4	55	78	2.3
450	30	6,291	-26.8	48	125	1.9
400	30	7,125	-32.9	48	168	1.9
350	30	8,050	-40.2		185	2.7
300	30	9,082	-48.3		229	2.3
250	29	10,267	-52.6		307	1.4
200	29	11,725	-46.8		182	1.4
175	29	12,610	-46.5		189	1.2
150	28	13,635	-46.5		142	3.7
125	28	14,843	-46.6		149	2.7
100	28	16,321	-46.8		121	4.1
80	28	17,800	-46.6		109	5.4
60	27	19,709	-46.3		97	8.7
50	27	20,919	-46.2		91	11.5
40	26	22,395	-46.6		99	13.2
30	16	24,313	-46.1		81	15.5

ANNETTE, ALASKA (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	37	11.7	73	173	7.8
1,000	30	124	11.0	73	170	8.0
950	30	550	8.0	74	165	11.3
900	30	[illegible]	4.9	77	168	10.9
850	30	1,458	1.7	78	167	9.5
800	30	1,944	- 1.1	77	170	11.5
750	30	2,463	- 4.0	72	176	13.2
700	30	2,998	- 6.9	67	183	11.8
650	30	3,577	-10.5	62	186	10.7
600	30	4,185	-14.2	56	189	10.9
550	29	4,848	-18.3	46	193	11.1
500	29	5,549	-23.1	43	196	11.7
450	29	6,318	-28.3	42	192	13.4
400	29	7,147	-34.4	40	182	13.8
350	29	8,067	-40.9		166	15.2
300	28	9,096	-46.9		166	14.8
250	28	10,295	-48.7		206	5.8
200	28	11,770	-45.9		247	6.4
175	28	12,658	-46.2		243	9.3
150	28	13,679	-46.9		258	10.9
125	28	14,882	-48.0		261	10.7
100	28	16,350	-48.6		235	5.8
80	28	17,814	-49.2		177	2.1
60	27	19,695	-49.5		150	1.7
50	25	20,891	-49.3		68	4.1
40	23	22,350	-49.3		95	6.6
30	21	24,239	-48.9			

ATHENS, GA. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	246	22.7	72	292	1.7
1,000	29	141				
950	29	593	22.8	57	280	3.7
900	29	1,059	19.8	58	247	3.9
850	29	1,549	16.2	62	249	4.1
800	29	2,062	12.5	65	241	2.5
750	29	2,606	9.2	57	242	2.3
700	29	3,169	5.8	56	309	4.3
650	29	3,780	2.0	58	302	3.9
600	29	4,415	- 1.6	54	285	5.8
550	29	5,106	- 5.4	49	297	5.6
500	29	5,845	- 9.8	45	297	6.0
450	29	6,664	-14.6	41	296	6.8
400	29	7,534	-20.6	38	288	8.0
350	28	8,504	-27.8		288	9.7
300	28	9,592	-36.3		278	10.5
250	28	10,828	-46.2		279	14.6
200	28	12,276	-56.7		275	18.6
175	27	13,111	-61.0		284	16.9
150	27	14,060	-64.7		300	12.6
125	27	15,164	-66.9		332	9.9
100	26	16,509	-66.3		21	6.0
80	24	17,863	-63.4		54	5.2
60	23	19,642	-59.9		71	9.1
50	22	20,789	-57.7		75	13.8
40	20	22,205	-54.9		86	19.6
30	14	24,045	-51.7		89	20.8

BARROW, ALASKA (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	[illegible]	- 0.1	88	54	3.7
1,000	29	115	- 1.3	85	73	5.2
950	29	533	.4	75	103	2.9
900	29	960	.7	64	130	1.9
850	29	1,418	- .7	62	181	1.6
800	29	1,900	- 2.5	61	208	3.5
750	29	2,418	- 5.0	56	221	4.5
700	29	2,950	- 7.6	51	231	5.1
650	29	3,534	-10.9	48	234	6.6
600	29	4,134	-14.7	42	223	7.2
550	29	4,793	-19.2	41	225	8.2
500	29	5,490	-24.2	43	231	10.1
450	29	6,259	-29.6	43	230	9.9
400	29	7,080	-35.7	38	234	9.5
350	29	7,995	-42.2		247	9.7
300	29	9,023	-48.3		241	11.7
250	29	10,218	-48.4		240	9.3
200	29	11,697	-44.8		234	7.4
175	29	12,590	-44.4		227	6.8
150	29	13,621	-44.8		221	6.8
125	29	14,838	-44.8		213	5.1
100	28	16,329	-44.4		195	3.9
80	27	17,824	-43.5		140	2.7
60	25	19,751	-43.4		116	5.2
50	21	20,978	-43.3		109	8.5
40	21	22,478	-43.4		101	10.1
30	15	24,422	-43.0		91	11.1
20						
15						

BETHEL, ALASKA (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	4	14.3	58	251	3.9
1,000	29	71	13.7	60	237	4.3
950	29	502	9.5	67	228	3.3
900	29	946	5.9	70	213	2.7
850	29	1,411	2.8	74	167	3.7
800	29	1,899	.0	70	154	3.9
750	29	2,418	- 2.8	62	152	4.7
700	29	2,958	- 5.7	58	146	4.9
650	29	3,542	- 8.9	58	142	5.1
600	29	4,151	-12.2	55	134	3.3
550	29	4,812	-16.3	52	145	2.3
500	29	5,521	-20.9	49	162	2.3
450	29	6,294	-26.3	48	188	1.2
400	29	7,132	-32.5	47	243	1.7
350	29	8,058	-39.7		279	1.9
300	29	9,094	-47.4		243	4.3
250	29	10,283	-51.5		252	4.7
200	28	11,746	-47.2		274	4.3
175	28	12,631	-46.1		270	2.1
150	28	13,654	-46.4		273	2.3
125	28	14,864	-46.3		166	.2
100	26	16,350	-46.3		84	2.3
80	26	17,833	-45.8		105	4.3
60	26	19,747	-45.4		90	7.0
50	26	20,961	-45.5		89	8.9
40	24	22,447	-45.8		90	11.7
30	16	24,347	-45.8		99	14.2
20						
15						

BISMARCK, N. DAK. (952 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	505	20.9	66	115	3.9
1,000	30	75				
950	30	529			117	4.7
900	30	993	20.8	54	138	4.7
850	30	1,485	17.6	53	224	2.9
800	30	2,000	14.6	48	263	7.0
750	30	2,547	11.0	49	266	11.3
700	30	3,114	7.0	46	271	14.8
650	30	3,724	2.8	43	271	16.5
600	30	4,363	- 1.4	40	273	19.4
550	29	5,052	- 6.3	36	275	22.5
500	29	5,789	-11.3	31	268	24.1
450	29	6,597	-17.6		266	24.9
400	29	7,459	-24.0		274	26.6
350	29	8,419	-31.4		260	29.9
300	29	9,492	-39.6		259	34.4
250	29	10,713	-49.0		254	29.7
200	29	12,150	-56.1		260	33.4
175	29	12,996	-56.6		261	33.6
150	27	13,969	-56.9			
125	27	15,118	-58.9			
100	27	16,509	-60.3			
80	27	17,903	-59.2			
60	26	19,716	-55.9			
50	25	20,878	-54.3			
40	25	22,311	-53.1			
30	24	24,171	-51.0			
20	[illegible]	26,825	-47.4			
15						

BOISE, IDAHO (913 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	868	21.7	40	346	5.1
1,000	30	72				
950	30	528				
900	30	995	21.7	34	345	6.2
850	30	1,487	18.1	34	335	6.8
800	30	2,003	13.9	38	287	7.2
750	30	2,548	9.3	45	268	11.3
700	30	3,111	4.8	49	254	15.0
650	30	3,711	.1	48	244	17.7
600	30	4,347	- 4.2	45	241	20.6
550	30	5,031	- 8.6	39	238	24.5
500	30	5,761	-13.9	39	234	27.6
450	30	6,562	-19.5		235	30.3
400	30	7,417	-25.8		230	28.9
350	29	8,371	-33.3		242	22.3
300	29	9,435	-41.6		261	25.1
250	28	10,649	-49.7			
200	28	12,093	-53.5			
175	28	12,951	-54.1			
150	28	13,936	-55.6			
125	28	15,091	-57.8			
100	27	16,493	-60.0			
80	26	17,888	-59.1			
60	26	19,704	-56.2			
50	26	20,865	-54.9			
40	23	22,297	-53.5			
30	18	24,159	-51.6			

BROWNSVILLE, TEX. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	25.2	87	134	9.7
1,000	30	122	25.7	83	135	12.8
950	30	572	23.4	74	139	17.7
900	30	1,044	21.3	64	135	14.0
850	30	1,538	18.9	56	130	10.9
800	30	2,056	15.8	52	122	9.5
750	30	2,603	12.6	49	118	7.8
700	30	3,177	9.1	48	98	6.4
650	30	3,792	5.3	44	88	6.0
600	30	4,436	1.6	41	85	6.2
550	30	5,132	- 2.4	36	64	6.8
500	30	5,882	- 7.0		51	6.0
450	30	6,702	-12.5		36	6.4
400	30	7,584	-18.6		20	8.0
350	30	8,565	-25.7		26	10.1
300	29	9,663	-34.0		6	7.0
250	28	10,911	-43.8		343	6.6
200	27	12,374	-54.7		25	8.7
175	27	13,216	-60.4		3	11.8
150	27	14,163	-65.7		6	15.9
125	27	15,257	-70.2		21	13.6
100	27	16,573	-72.2		59	13.8
80	27	17,891	-69.1		55	15.0
60	26	19,639	-62.3		90	23.3
50	26	20,773	-58.8		89	28.6
40	25	22,182	-55.6		87	28.6
30	21	24,027	-52.1		98	29.3
20	18	26,667	-47.8		95	34.8
15	7	28,574	-45.6			

BUFFALO, N. Y. (993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	182	17.1	77	224	3.9
1,000	30	124				
950	30	565	17.9	65	251	8.4
900	30	1,025	15.1	66	270	10.1
850	30	1,507	12.0	65	280	11.5
800	30	2,012	9.2	61	286	12.4
750	30	2,548	6.3	57	283	11.8
700	30	3,108	3.3	51	281	11.5
650	30	3,710	.1	44	285	11.7
600	30	4,342	- 3.5	36	288	14.6
550	30	5,026	- 7.4	32	287	17.5
500	30	5,761	-12.2	34	284	20.2
450	30	6,569	-17.5		277	22.5
400	30	7,431	-23.5		273	25.8
350	30	8,391	-31.2		270	28.2
300	30	9,464	-39.4		267	29.1
250	29	10,683	-48.1		275	30.1
200	29	12,121	-56.7		291	28.0
175	29	12,962	-58.8		291	28.2
150	29	13,926	-59.8		300	24.5
125	28	15,057	-61.0		318	19.2
100	26	16,439	-61.4		318	13.2
80	26	17,824	-59.9		322	8.0
60	25	19,630	-57.0		36	8.2
50	25	20,787	-55.4		55	8.2
40	24	22,218	-53.2		78	10.5
30	21	24,090	-50.5		82	12.4
20	18	26,762	-46.6		85	12.4
15	7	28,679	-43.6			
10						

BURRWOOD, LA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	3	24.3	86	193	3.1
1,000	27	144	24.1	75	180	4.5
950	27	592	21.5	69	167	4.7
900	27	1,059	19.0	57	131	4.1
850	27	1,548	16.1	55	116	6.0
800	27	2,062	13.2	55	113	5.8
750	27	2,604	10.2	50	109	4.3
700	27	3,173	7.1	46	116	2.7
650	26	3,785	3.7	43	6	1.0
600	25	4,423	- .1	46	348	4.3
550	24	5,118	- 4.4	48	319	4.9
500	24	5,860	- 8.7	41	347	5.2
450	23	6,677	-14.1		333	7.8
400	23	7,553	-20.4		311	8.9
350	21	8,527	-27.9		359	6.4
300	21	9,616	-36.5		8	6.2
250	21	10,853	-46.5		72	7.2
200	21	12,298	-57.5		89	4.3
175	21	13,130	-62.7		43	6.8
150	19	14,068	-66.8			
125	17	15,168	-69.1			
100	17	16,496	-69.7			
80	14	17,832	-66.3			
60	12	19,590	-61.3			
50	12	20,730	-57.3			
40	12	22,148	-54.9			
30	11	23,999	-51.5			
20	7	26,677	-46.6			
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10						

CARIBOU, ME. (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	191	13.5	81	243	4.5
1,000	29	110				
950	29	545	13.6	69	255	7.8
900	29	998	10.8	69	283	9.3
850	29	1,472	8.1	72	298	12.0
800	29	1,971	5.2	74	292	13.8
750	29	2,504	2.8	67	287	19.0
700	29	3,052	.0	60	280	20.4
650	29	3,649	- 2.8	50	278	22.7
600	29	4,274	- 6.0	47	279	26.8
550	29	4,954	- 9.8	41	279	27.0
500	29	5,680	-14.5	37	278	30.3
450	29	6,481	-20.1	37	279	34.0
400	29	7,333	-26.3	39	282	36.9
350	29	8,284	-33.4	39	283	41.2
300	29	9,348	-40.9		284	44.3
250	28	10,567	-48.8		283	49.7
200	28	12,014	-54.3		278	48.0
175	28	12,865	-55.9		273	44.5
150	28	13,845	-55.8		283	35.4
125	28	15,004	-56.4		277	28.0
100	28	16,418	-56.8		286	18.3
80	25	17,829	-55.8		300	12.8
60	23	19,671	-53.6		36	5.1
50	23	20,846	-52.7		68	5.4
40	23	22,290	-51.4		70	9.3
30	20	24,159	-49.8		83	13.8
20	18	26,832	-45.9		88	22.5
15	11	28,766	-44.2		93	19.6
10	5	31,444	-41.6			

CHARLESTON, S. C. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	13	22.7	87	190	4.3
1,000	30	150	23.8	78	200	7.6
950	30	600	22.5	67	221	8.0
900	30	1,069	19.9	66	242	4.7
850	30	1,560	16.5	67	298	2.5
800	30	2,074	13.2	65	311	3.1
750	30	2,620	9.7	60	310	2.3
700	30	3,185	6.3	54	327	1.9
650	30	3,793	2.9	51	261	2.5
600	30	4,434	- .7	51	251	4.5
550	30	5,129	- 4.7	51	260	3.1
500	30	5,869	- 9.0	43	270	4.1
450	30	6,687	-14.1	42	286	4.7
400	30	7,563	-20.0	39	282	6.8
350	30	8,539	-27.1	38	287	8.4
300	29	9,630	-35.7		294	8.0
250	29	10,872	-45.8		297	10.5
200	29	12,322	-56.9		299	17.1
175	29	13,157	-61.9		309	14.6
150	29	14,102	-65.3		318	15.0
125	29	15,207	-66.7		346	10.5
100	28	16,561	-66.2		35	8.2
80	27	17,920	-63.0		59	7.2
60	26	19,706	-59.6		75	12.8
50	24	20,850	-57.4		86	15.9
40	24	22,269	-54.6		83	19.8
30	22	24,127	-51.4		96	24.1
20	16	26,783	-48.3		90	26.4

COLD BAY, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	29	8.0	76	302	1.4
1,000	30			75	331	4.3
950	30	508	4.1	81	185	.6
900	30	944	1.5	85	165	1.9
850	30	1,403	.4	82	262	1.4
800	30	1,889	- .7	70	250	1.9
750	30	2,406	- 2.9	69	198	3.7
700	30	2,947	- 5.5	66	212	5.1
650	30	3,527	- 8.6	59	214	3.9
600	30	4,142	-11.8	53	212	5.6
550	30	4,804	-15.6	49	221	7.0
500	30	5,516	-20.4	48	215	6.6
450	30	6,291	-26.1	47	230	8.0
400	30	7,130	-32.0	44	224	5.2
350	30	8,057	-39.3		249	8.4
300	30	9,096	-46.4		235	7.8
250	30	10,291	-50.0		267	14.2
200	30	11,753	-47.9		280	15.2
175	30	12,634	-47.4		281	14.2
150	29	13,652	-48.0		283	14.0
125	29	14,851	-48.6		282	11.8
100	29	16,315	-48.9		285	6.8
80	28	17,783	-48.4		351	1.9
60	28	19,677	-47.7		89	3.7
50	28	20,879	-47.6		83	9.9
40	27	22,352	-47.4		85	12.0
30	23	24,260	-47.1		84	15.0

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

COLUMBIA, MO. (987 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	238	22.3	74	168	3.3
1,000	30	126				
950	30	577	22.8	61	177	7.2
900	30	1,044	19.8	63	196	8.2
850	30	1,534	16.3	64	212	4.9
800	30	2,048	13.5	54	262	2.7
750	30	2,595	11.0	46	316	4.5
700	30	3,162	7.7	43	329	6.0
650	30	3,774	4.0	42	334	9.1
600	29	4,414	- .3	42	334	12.0
550	29	5,105	- 5.0	43	337	15.2
500	29	5,847	- 9.5	34	332	16.1
450	29	6,662	-14.9		323	16.1
400	29	7,534	-20.9		313	17.1
350	29	8,505	-28.1		304	18.1
300	29	9,592	-36.4		289	19.6
250	29	10,830	-45.9		279	21.2
200	29	12,280	-55.8		286	23.7
175	29	13,122	-59.3		295	24.7
150	29	14,079	-62.3		305	21.8
125	29	15,195	-65.1		312	16.5
100	27	16,548	-65.7		339	8.9
80	26	17,906	-63.3		39	7.4
60	24	19,690	-59.0		76	11.5
50	23	20,838	-56.8		80	14.4
40	23	22,261	-53.8		88	16.9
30	17	24,131	-51.1		91	19.0
20	11	26,761	-48.2			
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DAYTON, OHIO (982 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	297	20.9	72	214	0.8
1,000	29	135				
950	29	579	20.0	68	238	3.5
900	29	1,044	17.1	69	262	6.2
850	29	1,530	14.0	66	282	7.8
800	29	2,039	11.0	63	295	8.5
750	29	2,578	7.7	64	301	8.9
700	29	3,140	4.7	60	299	9.7
650	29	3,745	1.3	55	307	9.9
600	28	4,379	- 2.3	52	300	11.5
550	28	5,064	- 6.0	45	304	15.2
500	28	5,806	-10.3	38	296	14.2
450	28	6,612	-15.8		294	16.9
400	28	7,486	-22.2		290	17.1
350	28	8,453	-29.4		287	20.2
300	28	9,534	-37.5		279	23.5
250	28	10,766	-46.7		282	27.4
200	28	12,214	-55.7		284	29.7
175	28	13,056	-59.5		290	29.5
150	27	14,011	-61.5		302	23.9
125	26	15,135	-63.2		312	14.6
100	25	16,504	-63.4		336	8.7
80	25	17,878	-61.7		20	8.2
60	24	19,673	-58.1		66	9.1
50	23	20,826	-56.7		74	11.1
40	22	22,247	-54.5		86	13.0
30	21	24,100	-51.7		84	19.8
20	18	26,738	-47.7		86	18.1
15	9	28,656	-44.0			

DODGE CITY, KANS. (923 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	25.9	46	155	11.1
1,000	30	74				
950	30	535				
900	30	1,013	26.0	44	156	16.1
850	30	1,515	22.6	47	176	16.5
800	30	2,040	19.0	48	190	15.5
750	30	2,597	15.1	51	215	11.7
700	30	3,172	11.2	45	236	8.0
650	30	3,790	6.7	44	265	5.2
600	29	4,439	1.9	41	316	5.8
550	29	5,130	- 3.2	37	329	7.8
500	29	5,881	- 8.8		314	10.1
450	29	6,694	-14.4		317	11.5
400	29	7,571	-21.0		312	13.2
350	29	8,542	-27.9		300	16.5
300	28	9,629	-36.4		292	20.8
250	28	10,866	-45.8		284	25.4
200	28	12,316	-56.0		282	25.3
175	27	13,152	-60.6		284	25.1
150	26	14,100	-64.2		281	19.4
125	24	15,206	-66.4		289	13.2
100	24	16,551	-67.4		272	5.4
80	20	17,905	-64.8		107	4.1
60	19	19,678	-59.4		76	12.8
50	19	20,825	-56.9		82	13.6
40	17	22,244	-54.2		90	14.4
30	15	24,099	-51.8		89	19.2
20	6	26,763	-47.6			
15						

EL PASO, TEX. (879 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,195	30.0	27	125	5.1
1,000	30	25				
950	30	495				
900	30	984				
850	30	1,498	29.0	23	148	4.5
800	30	2,033	24.6	25	137	4.1
750	30	2,594	19.6	32	158	3.7
700	30	3,181	14.3	40	194	2.5
650	30	3,802	8.7	48	197	1.9
600	29	4,456	3.1	54	235	1.2
550	29	5,154	- 2.5	60	281	3.1
500	29	5,904	- 7.8	58	266	1.6
450	28	6,727	-12.8	42	240	2.7
400	28	7,604	-18.8		256	6.2
350	28	8,585	-26.0		266	10.5
300	28	9,680	-34.8		271	16.1
250	28	10,926	-44.5		273	19.2
200	28	12,384	-55.1		272	26.8
175	28	13,225	-60.5		277	25.3
150	26	14,172	-66.1		274	23.3
125	24	15,263	-70.3		271	8.5
100	23	16,582	-70.5		113	2.9
80	21	17,918	-66.4		82	8.7
60	21	19,685	-60.2		102	14.2
50	21	20,830	-57.3		99	18.6
40	20	22,252	-54.0		90	17.3
30	16	24,118	-51.2		99	21.6
20	8	26,767	-47.1			
15						

ELY, NEV. (808 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,908	20.7	22	222	3.9
1,000	30	18				
950	30	482				
900	30	961				
850	30	1,466				
800	30	1,996	23.0	18	209	5.2
750	30	2,558	18.7	19	225	9.3
700	30	3,137	12.9	23	222	12.6
650	30	3,757	7.3	30	222	12.6
600	30	4,404	1.3	37	223	16.3
550	30	5,098	- 4.9	43	227	17.3
500	30	5,838	-11.0	44	233	20.8
450	30	6,648	-16.6	35	238	26.2
400	30	7,514	-22.9		241	30.9
350	30	8,477	-30.4		247	31.3
300	30	9,554	-38.9		247	31.7
250	30	10,779	-47.9		249	30.3
200	30	12,225	-54.8		252	29.3
175	30	13,075	-56.6		249	34.2
150	30	14,047	-58.5		252	28.6
125	30	15,187	-60.9			
100	29	16,562	-62.8			
80	28	17,939	-61.2			
60	25	19,745	-57.2			
50	23	20,902	-55.2			
40	20	22,329	-53.3			
30	15	24,183	-51.0			
20						
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FAIRBANKS, ALASKA (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	135	18.6	46	290	3.1
1,000	29	53				
950	29	489	15.1	45	279	2.9
900	29	945	10.9	52	320	2.3
850	29	1,418	6.6	59	326	2.3
800	29	1,912	2.3	66	326	1.9
750	29	2,433	- 1.4	65	37	1.0
700	29	2,976	- 5.0	62	163	2.9
650	29	3,554	- 8.6	58	169	3.1
600	29	4,170	-12.4	54	165	5.6
550	29	4,830	-16.8	50	175	5.4
500	29	5,538	-21.8	48	172	6.0
450	29	6,316	-27.2	48	174	7.0
400	29	7,144	-33.4	46	159	8.2
350	29	8,066	-40.7		176	9.3
300	29	9,098	-48.4		180	9.9
250	29	10,282	-52.2		186	7.0
200	29	11,741	-46.8		165	4.5
175	29	12,627	-46.0		184	4.3
150	29	13,652	-46.0		181	4.3
125	29	14,863	-46.4		156	4.5
100	29	16,342	-46.6		139	5.4
80	29	17,823	-46.1		141	5.2
60	27	19,733	-45.8		108	8.5
50	27	20,945	-45.8		99	10.5
40	27	22,430	-45.8		100	10.7
30	18	24,359	-45.3		93	15.2
20	6	27,074	-43.8			
15						

FORT WORTH, TEX. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	178	28.5	55	153	7.0
1,000	30	106				
950	30	566	26.6	55	150	17.5
900	30	1,038	23.2	58	166	17.5
850	30	1,534	19.6	64	178	13.2
800	30	2,053	16.1	66	204	8.5
750	30	2,601	12.4	63	240	4.9
700	30	3,175	9.0	52	312	5.1
650	29	3,789	5.2	45	345	7.6
600	29	4,434	.9	42	352	9.5
550	29	5,129	- 3.7	42	355	11.3
500	29	5,873	- 8.6	39	352	11.5
450	29	6,690	-13.9		350	11.7
400	29	7,566	-20.2		345	11.8
350	29	8,540	-27.7		335	14.0
300	29	9,628	-36.3		323	15.3
250	29	10,867	-45.5		318	18.6
200	29	12,321	-55.6		324	20.0
175	29	13,161	-60.9		326	20.8
150	29	14,107	-65.2		332	14.2
125	26	15,216	-68.5		332	8.9
100	21	16,542	-70.2		6	5.1
80	20	17,882	-66.5		68	9.5
60	19	19,648	-61.0		83	16.1
50	17	20,790	-58.3		82	15.7
40	17	22,206	-54.5		89	19.6
30	17	24,061	-51.5		87	22.9
20	14	26,704	-47.1		88	26.8
15	6	28,598	-45.2			

GLASGOW, MONT. (929 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	695	21.5	43	66	2.9
1,000	30	53				
950	30	504				
900	30	974	21.2	39	331	4.7
850	30	1,466	17.4	43	301	4.5
800	30	1,980	13.6	46	266	6.4
750	30	2,527	9.5	51	255	10.7
700	30	3,089	5.3	53	241	14.8
650	30	3,694	1.0	53	250	19.0
600	30	4,329	- 3.5	49	253	23.5
550	30	5,014	- 8.3	47	256	26.6
500	30	5,744	-13.2	40	260	29.1
450	29	6,548	-18.6	36	252	29.5
400	29	7,407	-25.0	34	246	29.5
350	29	8,363	-32.3		246	29.1
300	29	9,432	-40.5		230	27.8
250	29	10,648	-49.5		235	29.3
200	29	12,087	-55.2		240	27.8
175	28	12,937	-54.6		241	22.9
150	27	13,922	-54.8		241	24.3
125	26	15,086	-56.1		249	14.2
100	25	16,498	-58.2		214	7.0
80	25	17,906	-57.0		182	4.7
60	24	19,736	-54.5		115	6.2
50	23	20,905	-53.2		94	12.0
40	22	22,348	-51.9		85	14.8
30	17	24,211	-49.9			
20	7	26,897	-46.2			
15						

GRAND JUNCTION, COLO. (849 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	26.6	14	318	1.6
1,000	30	-1				
950	30	470				
900	30	954				
850	30	1,463			1	1.7
800	30	1,997	25.0		248	6.0
750	30	2,565	20.2	17	241	8.2
700	30	3,146	14.8	20	237	8.5
650	30	3,771	9.0	25	229	9.5
600	30	4,422	3.0	32	222	11.5
550	30	5,115	- 3.4	40	221	14.6
500	30	5,863	- 9.5	40	230	17.5
450	30	6,675	-15.5		242	19.6
400	30	7,545	-22.3		244	23.5
350	30	8,511	-29.9		247	26.6
300	30	9,589	-38.4		248	31.5
250	29	10,821	-47.6		257	34.6
200	29	12,264	-56.3		260	36.5
175	29	13,106	-58.6		260	37.9
150	29	14,069	-61.2		275	29.9
125	29	15,190	-64.5		260	27.6
100	27	16,546	-65.4			
80	27	17,909	-63.1			
60	26	19,697	-58.1			
50	25	20,847	-56.7			
40	24	22,268	-53.9			
30	19	24,126	-51.9			
20						
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GREAT FALLS, MONT. (885 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,123	19.0	45	282	8.2
1,000	30	53				
950	30	505				
900	30	974				
850	30	1,467	17.3	39	269	12.6
800	30	1,981	13.1	44	257	12.6
750	30	2,521	8.6	50	242	14.0
700	30	3,086	4.1	57	233	15.5
650	30	3,685	- .1	59	232	20.0
600	30	4,320	- 4.4	57	238	22.5
550	29	5,001	- 9.0	55	241	26.0
500	29	5,732	-14.3	55	239	29.1
450	29	6,526	-19.7	52	239	30.5
400	29	7,387	-25.7	45	242	32.4
350	29	8,340	-33.1	43	245	34.6
300	29	9,405	-41.3		242	37.3
250	29	10,620	-49.6		239	34.8
200	27	12,066	-54.7		242	35.0
175	25	12,917	-54.5		238	33.8
150	25	13,905	-54.6		232	27.4
125	23	15,066	-56.4		235	23.1
100	16	16,478	-58.0		223	15.3
80	7	17,892	-57.7			
60	6	19,703	-55.6			
50	6	20,868	-54.2			
40	5	22,287	-53.5			
30						
20						
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GREEN BAY, WIS. (990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	210	17.5	83	57	1.0
1,000	30	121				
950	30	564	19.0	62	242	1.7
900	30	1,026	16.4	60	284	4.3
850	30	1,510	13.3	62	291	8.0
800	30	2,018	10.3	59	294	9.5
750	30	2,557	7.4	55	306	11.5
700	30	3,119	4.2	50	308	13.2
650	29	3,721	.5	47	313	16.3
600	29	4,355	- 3.2	42	314	19.8
550	29	5,037	- 7.1	39	317	17.3
500	29	5,775	-11.8	35	319	19.8
450	29	6,583	-17.3	32	314	21.2
400	29	7,445	-23.8	30	317	20.0
350	29	8,404	-31.2		302	18.8
300	29	9,477	-39.4		290	24.7
250	29	10,701	-47.6		286	26.6
200	29	12,148	-55.2		293	25.3
175	29	12,996	-57.0		303	20.2
150	29	13,967	-58.3		303	24.5
125	29	15,106	-60.5		310	21.0
100	28	16,496	-61.0		329	12.6
80	25	17,887	-59.7		11	7.8
60	23	19,693	-56.4		59	8.5
50	22	20,854	-54.6		74	14.6
40	22	22,286	-52.9		74	17.5
30	17	24,150	-50.9			
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GREENSBORO, N. C. (986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	273	21.3	78	165	1.0
1,000	30	148				
950	30	594	22.3	62	194	3.1
900	30	1,064	19.6	61	229	3.9
850	30	1,554	16.1	66	261	6.0
800	30	2,067	12.4	70	277	7.8
750	30	2,612	9.0	67	280	8.4
700	30	3,174	5.5	60	288	8.2
650	30	3,787	2.1	53	285	6.6
600	30	4,420	- 1.2	45	283	6.8
550	30	5,112	- 5.1	41	289	5.1
500	30	5,851	- 9.9	39	279	6.6
450	30	6,667	-15.0	39	284	9.7
400	30	7,537	-21.0	41	283	9.7
350	30	8,509	-27.8	39	276	13.0
300	30	9,599	-36.0		275	13.2
250	30	10,838	-45.8		285	16.9
200	29	12,288	-56.3		285	17.3
175	28	13,134	-60.9		279	16.3
150	28	14,084	-64.0		293	15.3
125	28	15,195	-65.2		311	11.1
100	28	16,553	-65.0		12	5.4
80	27	17,923	-62.6		62	6.6
60	27	19,714	-58.3		70	8.7
50	26	20,864	-56.7		77	13.8
40	26	22,286	-53.9		93	18.3
30	24	24,148	-51.2		96	18.5
20	12	26,801	-47.8			
15	5	28,685	-45.2			

HATTERAS, N. C. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	23.0	90	193	3.3
1,000	30	141	22.7	86	205	5.1
950	30	592	21.2	75	228	7.0
900	30	1,056	18.8	70	234	5.6
850	30	1,545	16.0	69	246	5.6
800	30	2,058	12.9	67	255	5.6
750	30	2,598	9.8	61	259	4.5
700	30	3,168	6.2	60	269	5.1
650	30	3,775	2.7	51	270	4.1
600	30	4,415	- .8	47	280	5.2
550	30	5,104	- 4.8	45	283	6.2
500	30	5,848	- 9.3	40	283	6.8
450	30	6,665	-14.3	37	292	6.2
400	30	7,539	-20.4	36	291	9.3
350	30	8,512	-27.7	34	293	9.7
300	30	9,600	-35.9		298	12.8
250	30	10,839	-45.9		305	17.3
200	30	12,286	-57.3		307	19.4
175	30	13,119	-61.9		311	19.8
150	29	14,069	-64.5		319	19.2
125	27	15,175	-64.9		336	14.4
100	26	16,535	-65.2		358	4.9
80	24	17,903	-62.4		36	6.0
60	23	19,696	-58.8		56	10.9
50	21	20,849	-56.6		89	14.2
40	19	22,278	-53.3		76	20.2
30	18	24,136	-51.0		89	22.0
20	7	26,772	-48.8			
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HILO, T. H. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	24.5	73	68	5.4
1,000	30	151	22.6	74	68	6.6
950	30	599	19.2	82	70	7.6
900	30	1,060	16.0	87	66	6.6
850	30	1,544	13.2	89	64	6.2
800	30	2,054	11.3	75	75	9.7
750	30	2,601	10.4	47	83	11.1
700	30	3,165	8.4		92	10.7
650	30	3,783	5.9		87	9.9
600	30	4,425	2.5		92	9.1
550	30	5,125	- 1.9		105	7.2
500	30	5,874	- 6.9		144	3.7
450	30	6,695	-12.6		188	4.3
400	30	7,575	-19.4		210	7.6
350	30	8,552	-27.1		229	11.3
300	30	9,643	-35.9		242	16.9
250	30	10,882	-45.6		255	23.3
200	30	12,333	-56.4		264	23.1
175	29	13,169	-61.7		263	23.3
150	29	14,111	-66.9		265	20.2
125	29	15,200	-70.9		252	10.1
100	28	16,517	-71.1		148	5.4
80	26	17,839	-69.4		96	13.8
60	25	19,579	-64.2		97	25.6
50	25	20,702	-60.9		92	31.1
40	24	22,101	-57.4		88	35.0
30	22	23,932	-54.2		92	40.6
20	12	26,576	-48.3			
15						

INTERNAT. FALLS, MINN. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	360	18.7	63	150	2.9
1,000	30	102				
950	30	547	19.5	55	170	5.1
900	30	1,008	16.3	56	208	6.6
850	30	1,492	13.0	58	236	8.0
800	30	1,999	9.9	56	256	8.2
750	30	2,540	7.1	53	281	10.7
700	30	3,098	4.2	48	293	12.6
650	30	3,700	.8	45	285	14.4
600	30	4,337	- 3.2	46	287	16.3
550	30	5,018	- 7.6	42	290	18.1
500	30	5,755	-12.2	39	291	20.6
450	30	6,558	-17.5	33	288	23.1
400	30	7,425	-23.8	33	287	24.1
350	29	8,382	-31.3		284	24.1
300	29	9,455	-39.1		282	24.9
250	27	10,676	-47.5		277	27.4
200	26	12,128	-53.4		274	28.6
175	25	12,984	-54.5		274	28.9
150	22	13,968	-54.9		280	25.4
125	20	15,133	-56.4		285	20.2
100	18	16,541	-58.1		299	12.8
80	18	17,949	-56.9		326	6.0
60	16	19,786	-53.9		52	5.1
50	15	20,951	-52.5		68	7.6
40	12	22,398	-50.8		84	18.3
30	8	24,277	-49.6			
20						
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These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20--Continued

JUNE 1956

Standard pressure surface (mb.)	JACKSON, MISS. (1004 MB.)						JACKSONVILLE, FLA. (1017 MB.)						KING SALMON, ALASKA (1008 MB.)						KOTZEBUE, ALASKA (1010 MB.)						LAKE CHARLES, LA. (1015 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	29	101	23.9	76	143	1.7	30	6	23.5	87	186	3.5	30	15	11.8	63	219	4.9	30	5	7.0	82	282	10.9	30	5	24.7	80	157	3.7
1,000--	29	140	24.3	72	122	1.9	30	157	23.6	80	189	5.2	30	81	10.4	66	217	5.4	30	86	7.4	72	278	10.1	30	135	24.8	75	165	5.2
950----	29	595	22.7	64	165	4.1	30	602	21.9	70	204	6.4	30	500	6.6	72	201	6.4	30	516	7.4	63	288	5.8	30	586	22.4	73	179	5.2
900----	29	1,059	19.4	66	165	3.9	30	1,073	19.4	66	236	3.5	30	947	4.2	76	165	3.7	30	951	5.1	60	278	2.1	30	1,053	19.8	69	146	3.3
850----	29	1,549	16.6	63	194	1.4	30	1,563	16.1	69	261	3.1	30	1,410	1.9	75	134	4.1	30	1,415	2.4	56	258	2.9	30	1,544	17.3	61	104	3.5
800----	29	2,063	13.7	58	222	1.0	30	2,076	12.9	66	285	3.1	30	1,897	- .9	75	114	4.9	30	1,902	- .2	47	252	3.5	30	2,060	14.6	56	76	3.3
750----	29	2,609	10.7	53	336	1.2	30	2,615	9.5	66	302	2.5	30	2,415	- 3.5	70	101	4.3	30	2,417	- 3.1	44	239	4.1	30	2,603	11.5	55	32	1.7
700----	29	3,176	7.5	50	329	2.3	30	3,186	6.0	66	305	3.1	30	2,952	- 6.4	68	90	3.3	30	2,958	- 6.6	47	246	5.4	30	3,176	8.2	52	5	2.5
650----	29	3,788	3.8	51	342	3.7	30	3,793	2.5	63	307	2.1	30	3,533	- 9.2	63	96	2.7	30	3,537	-10.2	45	233	4.9	30	3,787	4.4	54	346	4.1
600----	29	4,429	.1	47	334	6.0	30	4,434	- 1.1	59	297	3.1	30	4,143	-12.6	62	99	3.5	30	4,144	-13.8	42	236	5.8	30	4,432	.4	54	346	4.9
550----	29	5,123	- 4.2	47	334	5.6	30	5,121	- 4.8	57	294	2.7	30	4,805	-16.9	59	73	3.1	30	4,800	-17.9	37	248	5.2	29	5,123	- 3.7	50	351	6.6
500----	29	5,865	- 8.5	46	332	7.6	30	5,867	- 9.1	54	288	3.5	30	5,510	-21.4	56	88	3.5	30	5,505	-22.9	37	256	5.1	29	5,873	- 8.1	40	351	8.2
450----	29	6,685	-13.3	42	327	8.4	30	6,679	-14.2	49	292	5.4	30	6,287	-26.8	56	59	1.6	30	6,273	-28.5	36	286	5.6	29	6,689	-13.1	36	349	7.2
400----	29	7,563	-19.4	40	323	9.7	30	7,559	-20.2	48	304	5.6	30	7,119	-33.0	51	72	1.6	29	7,101	-34.5	37	288	6.6	29	7,571	-19.2		328	6.8
350----	29	8,541	-26.6	38	313	9.1	30	8,534	-27.4	43	291	6.4	30	8,043	-40.1		7	1.6	29	8,019	-41.4		279	4.9	29	8,550	-26.5		326	6.8
300----	28	9,636	-34.9		298	9.7	29	9,622	-36.0		301	8.2	30	9,075	-48.1		322	2.3	29	9,046	-48.5		282	6.0	29	9,643	-35.0		309	6.8
250----	28	10,881	-44.8		288	11.8	28	10,865	-45.8		311	7.8	30	10,258	-52.3		294	5.1	28	10,233	-50.1		244	1.2	29	10,888	-44.9		311	9.5
200----	28	12,334	-56.2		278	12.6	28	12,313	-56.8		303	11.8	30	11,709	-48.6		261	6.2	28	11,703	-45.9		262	3.1	29	12,342	-55.7		318	8.0
175----	28	13,172	-61.2		296	11.5	28	13,149	-61.6		302	14.0	30	12,589	-47.4		281	4.1	28	12,590	-45.4		282	2.5	29	13,182	-60.4		330	10.3
150----	27	14,119	-65.3		302	9.9	28	14,092	-65.7		319	13.2	30	13,607	-47.5		264	4.1	28	13,616	-45.6		265	1.4	29	14,133	-64.3		343	14.4
125----	27	15,219	-68.2		334	12.2	27	15,189	-67.7		353	9.5	27	14,817	-48.0		239	3.3	28	14,829	-45.4		211	1.9	28	15,239	-68.0		4	13.6
100----	26	16,556	-68.5		22	6.8	25	16,526	-67.5		38	7.4	26	16,282	-47.8		195	1.7	28	16,316	-45.2		127	.6	25	16,575	-69.6		52	9.5
80-----	25	17,900	-65.8		60	8.9	24	17,877	-64.6		83	8.2	23	17,754	-47.2		127	4.3	25	17,809	-44.9		91	3.9	25	17,915	-66.0		61	11.3
60-----	24	19,667	-60.8		76	14.6	22	19,646	-60.6		78	13.0	18	19,646	-46.9		114	6.8	22	19,730	-44.4		96	6.6	22	19,682	-61.3		88	20.2
50-----	21	20,813	-57.8		82	18.6	21	20,785	-58.4		77	15.3	15	20,848	-46.9		113	7.4	21	20,951	-44.2		93	8.0	22	20,821	-57.9		88	24.3
40-----	18	22,232	-54.5		87	21.6	21	22,194	-55.9		78	22.5	13	22,327	-46.7		97	10.5	17	22,435	-44.7		95	6.6	22	22,238	-54.6		91	22.1
30-----	11	24,073	-51.5		95	20.0	18	24,045	-52.2		89	28.2	10	24,223	-45.7				13	24,363	-43.7		93	11.5	21	24,096	-51.4		97	27.0
20-----							12	26,673	-48.4																18	26,741	-48.7		90	33.4
15-----																									6	28,656	-46.3			

Standard pressure surface (mb.)	LANDER, WYO. (828 MB.)						LAS VEGAS, NEV. (932 MB.)						LITTLE ROCK, ARK. (1006 MB.)						MAZATLAN, MEXICO (1008 MB.)						MC GRATH, ALASKA (996 MB.)					
SURFACE	30	1,696	20.8	34	253	5.4	30	660	33.3	8	216	10.7	30	79	24.5	74	119	2.1	30	14	28.2	75			30	103	16.6	49	250	1.6
1,000--	30	21					30	14					30	127	24.8	71	127	2.3	30	83	27.4	75			30	66				
950----	30	481					30	486					30	579	23.3	64	150	5.4	30	543	24.2	73			30	499	12.6	51	248	2.7
900----	30	959					30	969	31.4		212	13.4	30	1,048	19.9	68	176	5.8	30	1,010	22.8	69			30	951	8.7	57	274	2.1
850----	30	1,464					30	1,477	26.8		215	13.2	30	1,538	16.8	65	195	3.9	30	1,507	20.3	71			30	1,420	4.7	63	340	1.2
800----	30	1,991	20.8	24	271	6.8	30	2,006	22.0		212	12.6	30	2,053	14.0	62	241	1.7	30	2,029	17.6	69			30	1,911	.9	68	35	2.1
750----	30	2,545	16.3	25	263	9.1	30	2,568	17.1		217	11.1	30	2,600	11.0	58	307	1.7	30	2,586	14.7	67			30	2,431	- 2.8	70	56	1.7
700----	30	3,125	11.3	27	247	11.5	30	3,144	12.1		224	10.3	30	3,169	8.0	52	332	5.1	29	3,161	11.5	65			30	2,970	- 5.9	65	33	3.1
650----	30	3,739	5.9	31	238	15.9	30	3,764	6.8		238	8.4	30	3,782	4.2	50	338	6.6	28	3,784	7.5	64			30	3,550	- 9.4	63	50	3.5
600----	30	4,386	.1	34	238	21.2	29	4,414	1.9		233	9.7	30	4,424	.3	48	336	8.2	28	4,433	2.9	68			30	4,161	-13.1	59	46	3.1
550----	30	5,073	- 5.5	36	240	24.5	29	5,109	- 2.9		230	11.7	30	5,116	- 3.7	41	341	9.1	27	5,130	- 2.1	69			30	4,820	-17.3	52	28	1.9
500----	30	5,816	-11.3	36	238	26.4	29	5,858	- 8.6		232	14.0	30	5,863	- 8.5	35	337	10.1	27	5,885	- 6.6	67			30	5,526	-22.0	47	335	3.1
450----	30	6,619	-17.4		236	27.8	29	6,676	-14.7		235	16.7	30	6,679	-13.6		327	11.3	25	6,707	-11.2				29	6,294	-27.4	45		
400----	30	7,485	-24.4		236	32.1	29	7,547	-21.5		241	19.4	30	7,558	-19.4		321	12.6	25	7,598	-16.9				29	7,130	-33.6	41		
350----	30	8,443	-32.0		252	33.8	29	8,515	-29.6		239	22.0	30	8,536	-26.6		307	13.8	24	8,585	-24.1				29	8,052	-40.7			
300----	30	9,513	-40.3		248	34.6	29	9,595	-38.5		239	25.4	28	9,628	-35.0		295	13.8	24	9,690	-32.4				29	9,084	-47.9			
250----	29	10,731	-48.9		247	36.5	29	10,822	-47.5		238	32.6	28	10,873	-44.7		282	14.0	22	10,949	-42.2				29	10,270	-51.5			
200----	28	12,173	-55.5		258	40.4	28	12,265	-55.7		239	41.0	27	12,332	-55.4		282	16.7	17	12,424	-54.1				29	11,733	-46.6			
175----	28	13,021	-57.0		256	35.7	26	13,114	-58.5		241	37.5	25	13,168	-59.8		298	15.3	13	13,262	-60.4				29	12,620	-46.1			
150----	28	13,994	-58.2		250	32.4	24	14,073	-61.7		242	33.8	25	14,122	-63.1		323	17.3	9	14,215	-67.0				29	13,643	-46.1			
125----	28	15,136	-60.5		256	25.6	22	15,194	-65.0		238	27.0	23	15,233	-66.9		336	12.0							28	14,854	-46.1			
100----	27	16,520	-62.1		249	10.3	20	16,545	-66.0		226	20.2	18	16,578	-67.2		357	8.5							28	16,335	-46.3			
80-----	26	17,903	-60.3		319	2.3	19	17,903	-63.7		196	6.2	17	17,932	-64.7		46	9.5							28	17,818	-45.7			
60-----	24	19,714	-57.0		82	9.7	16	19,683	-59.5		86	11.7	17	19,708	-59.5		77	14.6							28	19,735	-45.1			
50-----	24	20,873	-55.4		82	11.8	16	20,831	-57.1		93	14.6	17	20,855	-56.8		78	16.1							27	20,952	-45.1			
40-----	23	22,306	-53.3		90	14.8	14	22,257	-54.6		84	18.3	16	22,281	-53.5		79	19.2							26	22,434	-45.3			
30-----	19	24,163	-51.4		81	15.2	12	24,106	-51.6		97	20.0	11	24,139	-50.4										25	24,355	-44.4			
20-----							8	26,749	-48.1				5	26,788	-49.0										8	27,080	-42.1			

Standard pressure surface (mb.)	MEDFORD, ORE. (969 MB.)						MIAMI FLA. (1017 MB.)						MIDLAND, TEXAS (914 MB.)						MONTGOMERY, ALA. (1010 MB.)						NANTUCKET, MASS. (1014 MB.)					
SURFACE	30	401	20.4	47	324	8.9	30	4	25.7	78	114	3.3	30	871	28.9	38	145	6.6	29	61	23.8	81	72	1.0	30	14	14.4	91	208	4.7
1,000--	30	129					30	150	24.6	74	121	7.0	30	60					29	149	24.3	75	77	.8	30	134	17.2	82	217	7.2
950----	30	578	19.3	46	320	9.9	30	596	20.9	76	128	9.1	30	527					29	602	23.2	66	187	2.1	30	575	18.5	66	259	10.7
900----	30	1,035	15.7	52	314	8.7	30	1,066	18.4	72	129	8.2	30	1,010	28.8	35	146	11.3	29	1,069	19.9	65	187	2.9	30	1,037	16.0	66	266	9.1
850----	30	1,517	11.7	59	298	6.8	30	1,554	15.6	65	119	6.8	30	1,516	25.1	40	160	18.3	29	1,560	16.6	64	165	3.3	30	1,520	13.2	63	264	10.7
800----	30	2,021	7.9	64	268	6.2	30	2,066	12.4	61	106	4.5	30	2,045	20.6	45	168	16.3	29	2,074	13.2	64	144	4.7	30	2,028	10.2	56	278	10.3
750----	30	2,557	4.6	60	255	8.2	30	2,603	9.2	57	84	2.1	30	2,603	16.2	48	177	11.3	29	2,621	10.4	59	137	3.7	30	2,565	7.3	49	275	12.4
700----	30	3,110	1.7	48	250	11.3	30	3,173	6.1	49	191	1.4	30	3,182	11.7	51	183	4.9	29	3,186	6.9	60	142	1.4	30	3,127	4.4	44	281	14.6
650----	30	3,708	- 1.3	37	250	14.0	30	3,778	2.4	48	212	2.7	30	3,800	7.1	49	354	2.9	29	3,797	3.2	59	291	1.0	30	3,730	1.0	42	274	16.5
600----	30	4,338	- 4.8	33	255	16.5	30	4,419	- 1.4	45	231	3.7	30	4,449	2.1	46	1	6.2	27	4,436	- .3	53	332	3.1	30	4,367	- 2.8	39	272	18.5
550----	30	5,020	- 9.0	30	258	21.2	30	5,104	- 5.6	43	252	5.4	30	5,145	- 3.0	48	9	8.9	27	5,129	- 4.2	44	338	4.9	30	5,047	- 7.0	35	281	19.8
500----	30	5,749	-13.8	32	256	24.7	30	5,848	-10.1	45	264	6.2	30	5,894	- 7.9	42	352	10.3	27	5,873	- 8.8	43	346	6.0	30	5,788	-11.7		283	20.0
450----	30	6,549	-19.3	33	262	27.0	29	6,662	-14.9	46	278	7.0	29	6,712	-13.1	39	351	10.7	27	6,690	-14.0	43	332	6.2	30	6,593	-16.8		285	20.0
400----	30	7,407	-25.4	32	268	29.9	28	7,535	-21.0	46	271	7.8	29	7,592	-19.0		328	10.1	25	7,570	-19.8	41	324	8.4	30	7,462	-23.1	33	290	20.4
350----	30	8,361	-32.6		275	32.1	28	8,506	-28.4	44	291	6.6	29	8,571	-26.3		319	11.5	25	8,546	-27.1	39	322	7.6	30	8,426	-30.1		284	23.5
300----	30	9,428	-41.0		268	32.1	27	9,591	-36.9		309	7.4	28	9,665	-34.7		318	15.9	24	9,643	-35.2	41	324	3.7	30	9,504	-38.4		282	23.1
250----	30	10,644	-49.2		256	32.4	24	10,827	-46.8		289	8.4	27	10,912	-44.4		312	20.6	23	10,894	-44.9		310	3.9	30	10,732	-47.3		286	30.3
200----	30	12,088	-54.3				23	12,269	-58.1		288	4.9	27	12,371	-54.8		311	22.7	22	12,348	-55.9		269	8.2	30	12,174	-57.0		298	30.1
175----	30	12,942	-55.1				22	13,095	-63.8		319	5.6	27	13,213	-60.1		301	24.7	22	13,185	-61.3		276	8.0	30	13,010	-60.8		299	29.7
150----	30	13,926	-55.4				22	14,029	-68.4		355	4.7	27	14,162	-65.4		302	20.4	20	14,130	-64.9		294	6.6	29	13,964	-61.9			
125----	30	15,084	-57.2				21	15,115	-69.7		28	6.6	26	15,260	-69.4		299	9.7	18	15,243	-68.6		332	8.4	29	15,091	-62.1		325	16.1
100----	29	16,492	-58.3				20	16,451	-68.7		83	9.5	26	16,584	-70.6		26	1.9	15	16,582	-67.6		48	9.3	28	16,467	-61.8		300	9.5
80-----	28	17,896	-57.9				19	17,794	-65.9		92	14.4	25	17,917	-66.5		89	7.8	11	17,942	-65.1		80	8.2	27	17,851	-59.7		320	7.0
60-----	27	19,714	-56.2				18	19,551	-62.1		88	18.5	25	19,680	-60.9		81	12.8	11	19,706	-61.6		85	14.2	26	19,660	-56.7		25	6.0
50-----	26	20,875	-54.9				18	20,686	-58.8		85	23.7	25	20,821	-58.1		84	14.4	10	20,838	-58.5				26	20,818	-55.2		57	7.0
40-----	24	22,310	-53.1				17	22,101	-55.4		83	32.4	23	22,232	-54.6		87	17.7	7	22,272	-54.8				26	22,248	-53.3		86	13.4
30-----	17	24,172	-51.3				16	23,947	-52.3		96	36.5	23	24,086	-51.7		88	20.4	7	24,123	-51.6				25	24,112	-51.1		84	16.3
20-----													16	26,739	-48.0		91	18.5	5	26,753	-49.5				13	26,769	-48.2			
15-----													5	28,647	-45.5															

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Table 20 – Continued

NASHVILLE, TENN. (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	177	23.1	75	224	1.7
1,000	30	141				
950	30	598	22.3	60	231	2.7
900	30	1,062	19.0	63	246	3.1
850	30	1,550	15.5	68	253	4.1
800	30	2,062	12.1	64	261	5.2
750	30	2,606	9.2	59	264	3.9
700	30	3,170	5.9	61	275	3.7
650	30	3,779	2.2	57	310	3.7
600	29	4,414	- 1.5	51	322	5.1
550	29	5,103	- 5.4	47	329	6.4
500	29	5,844	-10.1	42	328	6.6
450	28	6,655	-15.3	38	318	8.7
400	28	7,527	-21.2	39	317	8.5
350	28	8,498	-28.2		301	12.0
300	28	9,586	-36.3		285	12.6
250	28	10,824	-45.8		285	16.7
200	28	12,274	-56.3		285	20.6
175	28	13,114	-59.9		288	20.6
150	28	14,068	-62.9		309	16.9
125	26	15,181	-65.3		331	12.6
100	22	16,534	-65.7		21	8.0
80	21	17,893	-63.6		49	5.6
60	20	19,675	-59.3		70	11.1
50	20	20,822	-57.2		77	13.0
40	18	22,244	-54.2		87	17.3
30	15	24,101	-51.0		85	17.1
20	12	28,760	-47.8			
15						

NOME, ALASKA (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	10.7	68	249	5.1
1,000	30	83	10.2	65	246	4.1
950	30	513	8.4	57	296	1.2
900	30	953	5.9	57	56	1.4
850	30	1,419	3.1	56	130	.2
800	30	1,908	.4	58	178	2.3
750	30	2,427	- 2.5	55	201	2.9
700	30	2,966	- 5.6	53	225	3.3
650	30	3,550	- 8.9	49	216	3.5
600	30	4,159	-12.5	47	215	3.1
550	30	4,821	-16.6	44	223	2.3
500	30	5,528	-21.2	40	264	1.9
450	30	6,305	-26.6	37	290	2.9
400	30	7,136	-32.9	40	300	3.5
350	30	8,061	-40.0		299	4.7
300	30	9,095	-47.3		310	5.1
250	30	10,285	-50.8		266	3.3
200	29	11,753	-46.5		357	1.7
175	29	12,641	-45.5		235	1.2
150	29	13,667	-45.7		347	.2
125	29	14,879	-45.8		105	1.9
100	29	16,364	-45.5		82	3.5
80	29	17,851	-45.1		98	5.1
60	29	19,772	-44.6		91	7.0
50	29	20,991	-44.8		89	9.1
40	29	22,482	-44.6		87	12.8
30	26	24,406	-44.1		90	14.6
20	18	27,160	-41.8		86	15.2
15						

NORFOLK, VA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	22.4	81	179	2.5
1,000	30	[illegible]	22.5	73	192	5.1
950	30	591	20.8	[illegible]	231	5.1
900	30	1,058	17.9	63	272	6.6
850	30	1,545	14.9	60	273	7.2
800	30	2,055	11.9	53	273	8.0
750	30	2,597	8.8	48	265	8.0
700	29	3,161	5.9	44	260	8.7
650	29	3,769	2.4	41	261	8.4
600	29	4,406	- 1.4	38	266	8.5
550	29	5,096	- 5.2		266	8.4
500	29	5,837	- 9.7	32	266	9.1
450	29	6,650	-14.8		277	9.7
400	28	7,522	-21.0		268	13.2
350	27	8,492	-28.3		271	17.3
300	27	9,578	-36.6		272	18.3
250	26	10,815	-46.2		271	21.4
200	22	12,253	-57.5		259	25.1
175	21	13,090	-61.6		266	21.2
150	21	14,040	-63.2		273	19.2
125	20	15,165	-64.2		299	12.0
100	20	16,530	-63.5		303	2.5
80	18	17,908	-61.4		75	2.9
60	16	19,712	-57.3		72	7.2
50	15	20,870	-55.7		82	11.5
40	15	22,296	-53.9		79	14.2
30	12	24,124	-51.5		87	17.5
20						
15						

NORTH PLATTE, NEBR. (914 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	848	22.8	58	132	6.0
1,000	30	64				
950	30	520				
900	30	995	24.5	46	140	8.7
850	30	1,495	22.3	42	173	11.8
800	30	2,019	18.9	42	[illegible]	12.4
750	30	2,569	15.4	42	227	10.9
700	30	3,150	11.4	41	258	8.4
650	30	3,768	6.8	38	285	8.9
600	29	4,419	1.9	40	298	11.1
550	29	5,112	- 3.4	38	297	12.6
500	29	5,860	- 8.9	35	304	15.9
450	29	6,674	-14.8		303	18.3
400	29	7,548	-21.2		299	20.6
350	28	8,521	-28.8		291	23.3
300	28	9,605	-37.1		281	25.8
250	28	10,840	-46.0		273	30.7
200	26	12,290	-55.7		265	33.6
175	25	13,134	-59.2		272	32.2
150	24	14,094	-61.4		271	24.9
125	20	15,218	-64.1		269	15.3
100	17	16,574	-64.7		272	7.8
80	16	17,942	-62.7		126	2.3
60	14	19,722	-58.0		63	8.5
50	13	20,876	-56.1			
40	12	22,305	-54.0			
30	7	24,180	-50.3			
20						
15						

OAKLAND, CALIF. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	[illegible]	16.6	69	282	11.1
1,000	30	123	15.7	69	282	10.5
950	30	568	17.5	52	291	10.9
900	30	1,023	17.8	38	295	11.5
850	30	1,509	15.8	31	297	8.5
800	30	2,022	13.2	23	293	6.2
750	30	2,568	10.4	23	290	6.2
700	30	3,132	7.5	21	283	8.5
650	30	3,742	3.7	22	269	10.5
600	30	4,383	.4	23	272	13.6
550	30	5,076	- 5.1	23	271	17.3
500	29	5,812	-10.5		269	19.6
450	29	6,619	-16.3		268	22.0
400	29	7,489	-23.2		270	24.7
350	29	8,451	-31.5		273	26.8
300	29	9,522	-40.5		273	29.9
250	29	10,739	-49.8		273	30.9
200	29	12,172	-57.0		263	34.2
175	29	13,015	-58.0		257	34.0
150	29	13,981	-60.0		255	29.5
125	29	15,115	-61.9		245	22.9
100	27	16,489	-63.6		236	13.8
80	25	17,861	-62.1		213	4.1
60	24	19,651	-58.5		100	6.8
50	24	20,802	-56.5		88	11.5
40	21	22,227	-54.1		95	14.2
30	15	24,082	-51.9		86	16.1
20	9	26,729	-48.4			
15	7	28,625	-45.0			

OKLAHOMA CITY, OKLA. (968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	391	24.9	67	145	8.9
1,000	30	101				
950	30	554	25.7	58	140	12.0
900	30	1,030	23.2	61	166	16.1
850	30	1,527	20.5	62	188	13.6
800	30	2,048	17.4	58	208	9.1
750	30	2,597	14.1	51	239	8.0
700	30	3,175	10.3	47	283	5.8
650	30	3,792	6.2	43	325	7.0
600	30	4,439	1.8	36	335	8.9
550	30	5,132	- 3.1	35	339	9.5
500	30	5,882	- 7.8		342	12.8
450	30	6,697	-13.5		333	14.6
400	30	7,577	-19.7		326	16.3
350	30	8,553	-27.0		321	17.7
300	30	9,644	-35.5		316	17.3
250	30	10,887	-45.0		312	18.8
200	30	12,344	-54.7		313	24.5
175	30	13,188	-59.6		314	26.6
150	30	14,142	-63.4		312	17.1
125	30	15,250	-67.5		309	11.7
100	29	16,591	-67.7		11	4.9
80	27	17,940	-65.0		75	8.9
60	27	19,715	-60.0		78	15.5
50	27	20,859	-57.4		84	17.9
40	27	22,279	-54.4		88	20.4
30	21	24,140	-51.0		88	20.4
20	10	26,788	-47.3			

OMAHA, NEBR. (966 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	403	24.7	55	157	5.6
1,000	30	93				
950	30	548	24.9	51	159	7.8
900	30	1,019	21.5	53	179	13.0
850	30	1,513	18.0	56	196	10.1
800	30	2,029	15.1	54	233	6.8
750	30	2,579	11.7	51	275	6.8
700	30	3,147	8.3	44	291	6.6
650	30	3,763	4.1	44	306	8.7
600	30	4,402	- .2	40	314	11.3
550	29	5,099	- 4.9	38	323	12.6
500	29	5,834	-10.1	35	317	15.7
450	28	6,654	-15.5		309	18.6
400	27	7,521	-21.8		304	20.8
350	27	8,488	-29.4		297	21.2
300	26	9,567	-37.5		286	23.9
250	26	10,799	-46.5		281	25.4
200	26	12,247	-55.7		275	29.3
175	26	13,090	-58.9		277	29.5
150	26	14,049	-61.9		284	26.0
125	26	15,167	-64.7		286	24.1
100	25	16,524	-64.8		305	13.4
80	25	17,891	-62.5		5	6.6
60	24	19,680	-58.2		39	7.2
50	22	20,835	-55.8		82	7.6
40	21	22,255	-53.8		76	7.6
30	16	24,109	-51.9		88	4.7
20	6	26,714	-48.3			

PHOENIX, ARIZ. (968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	341	34.2	18	298	5.4
1,000	30	41				
950	30	507	34.7		287	10.1
900	30	994	31.4		278	12.6
850	30	1,502	27.1		266	10.9
800	30	2,032	22.4		253	9.3
750	30	2,590	17.5	26	233	9.7
700	30	3,171	12.4	32	213	11.8
650	30	3,793	7.6	36	212	13.2
600	30	4,440	2.7	37	205	12.8
550	30	5,139	- 2.2		205	13.0
500	30	5,887	- 7.6		202	11.8
450	30	6,709	-13.3		207	14.0
400	30	7,584	-20.1		217	15.3
350	30	8,559	-27.5		227	20.8
300	30	9,650	-35.8		229	25.8
250	30	10,893	-45.1		238	31.3
200	28	12,354	-55.0		231	35.4
175	28	13,197	-60.2		235	34.8
150	28	14,148	-64.5		231	29.9
125	26	15,255	-67.7		235	18.6
100	25	16,594	-68.8			
80	25	17,936	-66.0			
60	25	19,707	-60.2			
50	23	20,849	-57.7			
40	23	22,268	-54.5			
30	21	24,121	-51.2			
20	8	26,772	-48.5			

PITTSBURGH, PA. (976 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	353	18.6	76	245	2.3
1,000	30	142				
950	30	586	18.3	71	256	3.3
900	30	1,046	15.9	70	268	7.0
850	30	1,530	12.7	72	276	9.1
800	30	2,036	9.7	69	278	9.3
750	30	2,577	7.1	62	289	9.1
700	30	3,136	4.0	58	291	11.7
650	30	3,743	1.0	54	291	12.4
600	30	4,375	- 2.7	49	295	14.8
550	30	5,064	- 6.5	44	294	16.7
500	30	5,799	-11.5	41	287	17.1
450	28	6,605	-17.4		282	18.1
400	28	7,470	-23.6		277	18.6
350	28	8,431	-30.8		277	21.4
300	28	9,506	-39.0		272	22.7
250	28	10,731	-48.1		273	25.4
200	24	12,175	-56.8		288	31.9
175	23	13,023	-60.5		291	31.3
150	19	14,008	-62.4		303	32.8
125	16	15,134	-64.0		321	26.0
100	11	16,518	-65.0		331	20.8
80	6	17,871	-62.4			
60	5	19,652	-58.5			
50	5	20,803	-56.4			
40						
30						
20						

PORTLAND, ME. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	20	14.9	80	249	1.2
1,000	30	129	16.8	70	241	2.9
950	30	571	17.0	60	277	10.1
900	30	1,026	14.2	62	281	10.3
850	30	1,506	11.2	64	278	11.3
800	30	2,010	8.3	56	275	13.0
750	30	2,543	5.5	53	273	15.5
700	30	3,102	2.8	44	271	17.3
650	30	3,702	- .4	41	271	18.8
600	30	4,335	- 3.9	40	273	19.6
550	30	5,018	- 7.8	36	272	22.1
500	30	5,752	-12.1		277	24.7
450	30	6,553	-17.6		277	26.2
400	29	7,422	-23.6		278	27.2
350	28	8,379	-31.1		279	30.7
300	28	9,452	-39.3		280	35.0
250	28	10,675	-48.1		277	37.7
200	27	12,121	-55.9		280	43.1
175	27	12,963	-58.6		280	39.8
150	27	13,926	-59.8		284	33.2
125	27	15,066	-59.4		284	22.3
100	26	16,457	-59.9		287	17.1
80	23	17,856	-58.4		310	7.4
60	22	19,679	-55.2		56	5.2
50	18	20,844	-54.0		82	9.7
40	16	22,287	-52.4		81	14.2
30	14	24,156	-50.4		83	20.4
20	8	26,804	-46.8			

RAPID CITY, S. DAK. (902 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	966	21.9	48	66	3.7
1,000	30	51				
950	30	507				
900	30	983			55	4.1
850	30	1,482	21.6	38	129	5.6
800	30	2,004	17.5	41	174	5.6
750	30	2,554	13.5	42	215	7.0
700	30	3,128	9.0	45	233	10.7
650	30	3,739	4.3	47	243	13.6
600	30	4,383	- .7	45	251	17.3
550	29	5,073	- 5.6	42	255	22.0
500	29	5,812	-10.9	40	262	24.9
450	29	6,618	-16.9		264	27.0
400	29	7,485	-23.5		266	29.5
350	29	8,447	-31.1		261	28.9
300	28	9,518	-39.4		256	30.3
250	28	10,741	-48.4		253	31.3
200	28	12,181	-56.7		250	33.2
175	27	13,023	-59.0		243	36.3
150	25	13,989	-59.1		246	30.7
125	24	15,125	-61.5		249	22.5
100	15	16,506	-62.5		266	13.0
80	6	17,879	-60.1			
60						
50						
40						
30						
20						

ST. CLOUD, MINN. (976 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	316	19.8	71	89	2.5
1,000	30	103				
950	30	553	20.8	64	121	5.2
900	30	1,014	18.6	61	173	6.2
850	30	1,503	15.6	60	214	7.8
800	30	2,015	12.8	58	251	7.6
750	30	2,562	10.0	51	263	9.1
700	30	3,126	6.6	45	285	11.8
650	30	3,734	2.6	42	291	14.4
600	30	4,373	- 1.8	41	292	15.9
550	30	5,058	- 6.6	39	296	16.9
500	29	5,802	-11.3	38	292	18.6
450	29	6,608	-16.7	32	285	14.6
400	29	7,477	-23.2		282	15.7
350	29	8,441	-30.4		270	17.9
300	29	9,520	-38.5		263	20.8
250	29	10,750	-47.4		256	23.9
200	29	12,198	-55.6		262	28.9
175	29	13,043	-57.5		275	25.4
150	29	14,014	-58.9		288	23.5
125	29	15,153	-60.5		287	17.5
100	28	16,538	-60.9		302	9.9
80	27	17,929	-59.6		6	3.3
60	23	19,739	-56.5		50	7.8
50	23	20,899	-55.0		70	11.5
40	22	22,327	-53.2		81	14.6
30	20	24,183	-51.5		84	15.7
20	5	26,875	-46.7			

ST. PAUL IS., ALASKA (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	10	4.7	87	186	1.6
1,000	30	80			266	2.1
950	30	500	2.0	84	212	2.7
900	30	931	1.4	78	210	3.5
850	30	1,391	.9	72	185	2.3
800	30	1,877	- 1.0	66	164	1.7
750	30	2,398	- 3.4	64	154	3.5
700	30	2,933	- 6.3	64	148	2.1
650	30	3,519	- 9.3	60	121	1.7
600	30	4,125	-12.7	53	109	1.2
550	30	4,794	-16.8	45	123	1.2
500	30	5,493	-21.4	38	312	1.6
450	30	6,274	-26.7	35	311	1.9
400	30	7,102	-32.7		304	7.2
350	30	8,028	-39.2		298	9.5
300	30	9,068	-45.5		309	9.1
250	30	10,271	-48.3		305	6.2
200	29	11,749	-46.3		274	9.7
175	29	12,636	-46.0		296	9.1
150	29	13,659	-46.7		287	7.6
125	29	14,865	-47.4		307	5.4
100	29	16,340	-47.3		5	.8
80	29	17,815	-46.9		56	2.3
60	29	19,722	-46.4		97	6.4
50	28	20,934	-46.4		90	8.7
40	27	22,422	-46.1		95	11.7
30	25	24,331	-45.4		87	16.3
20	9	27,037	-42.4			

SALEM, ORE. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	61	17.0	62	290	3.9
1,000	30	149	16.0	63	286	4.7
950	30	584	12.7	68	296	5.1
900	30	1,034	9.4	73	272	5.2
850	30	1,506	6.3	77	248	7.0
800	30	2,001	4.1	64	245	9.5
750	30	2,528	1.8	58	244	12.6
700	30	3,078	- 1.1	51	249	15.3
650	30	3,670	- 4.5	49	256	17.9
600	30	4,293	- 8.1	44	254	20.8
550	30	4,969	-12.2	41	253	23.9
500	30	5,687	-16.7	40	252	27.4
450	30	6,481	-21.7	43	255	29.3
400	30	7,328	-27.9	44	260	32.1
350	29	8,274	-34.9	42	258	35.5
300	29	9,332	-42.8		263	39.6
250	29	10,541	-50.1		268	40.2
200	29	11,982	-53.7		262	37.5
175	29	12,840	-53.5		260	34.4
150	28	13,832	-53.9		256	29.5
125	28	14,999	-55.3		250	23.7
100	26	16,415	-56.0		240	15.3
80	26	17,833	-56.3		216	7.4
60	22	19,663	-54.6		121	6.6
50	20	20,826	-53.9		100	8.7
40	18	22,258	-52.1		95	13.2
30	15	24,124	-50.4		91	15.5
20	11	26,778	-46.4			

SAN ANTONIO, TEX. (985 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	243	29.0	52	152	9.9
1,000	30	109				
950	30	572	26.7	55	144	18.1
900	30	1,042	23.3	60	152	15.7
850	30	1,538	19.8	62	155	10.9
800	30	2,058	16.6	60	157	6.4
750	30	2,607	13.4	53	145	4.9
700	30	3,182	9.6	50	103	4.5
650	30	3,795	5.7	44	53	6.0
600	30	4,442	1.5	43	41	10.3
550	30	5,134	- 2.7	36	32	11.5
500	30	5,887	- 7.4		26	10.5
450	30	6,705	-12.8		22	10.5
400	30	7,587	-19.0		2	11.1
350	30	8,565	-26.4		348	12.6
300	29	9,658	-35.0		345	14.2
250	29	10,904	-44.3		344	17.5
200	29	12,365	-54.8		345	22.5
175	29	13,207	-60.1		341	20.8
150	29	14,156	-65.3		344	18.1
125	29	15,252	-70.1		357	10.3
100	29	16,569	-72.1		41	10.3
80	28	17,890	-68.5		73	13.4
60	27	19,636	-62.1		76	19.8
50	25	20,771	-58.8		82	22.1
40	24	22,179	-55.6		87	21.0
30	23	24,029	-51.7		91	27.2
20	16	26,675	-48.2		99	28.0

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

* SAN DIEGO, CALIF. (998 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	15	124	17.0			
1,000--	15	104				
950----	15	547	15.3			
900----	15	1,003	19.3			
850----	15	1,494	19.0			
800----	15	2,012	17.1			
750----	15	2,567	14.1			
700----	15	3,137	10.9			
650----	15	3,758	7.3			
600----	15	4,403	3.0			
550----	15	5,106	- 2.1			
500----	15	5,850	- 7.8			
450----	15	6,671	-14.1			
400----	15	7,543	-21.1			
350----	15	8,514	-28.5			
300----	15	9,598	-36.9			
250----	15	10,835	-45.6			
200----	15	12,293	-54.3			
175----	15	13,138	-59.1			
150----	15	14,094	-63.3			
125----	15	15,203	-67.1			
100----	13	16,553	-69.5			
80-----	11	17,889	-66.7			
60-----	9	19,647	-61.3			
50-----	8	20,788	-58.3			
40-----	8	22,203	-55.0			
30-----	7	24,054	-51.3			
20-----	7	26,708	-47.0			

SAN JUAN, P. R. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	24.9	86	106	7.4
1,000--	30	158	24.8	79	100	13.2
950----	30	610	22.1	80	100	19.6
900----	30	1,077	19.3	80	103	18.6
850----	30	1,567	16.3	78	103	18.1
800----	30	2,082	14.2	64	101	17.3
750----	30	2.627	11.1	55	105	16.3
700----	30	3,197	7.8	51	100	15.0
650----	30	3,812	4.4	47	95	11.8
600----	30	4,453	1.0	42	95	8.5
550----	30	5,150	- 2.8	43	98	6.6
500----	29	5,897	- 7.5	43	101	4.7
450----	29	6,721	-12.9	44	107	2.3
400----	29	7,598	-19.0	41	270	2.1
350----	29	8,577	-26.5	36	262	6.8
300----	29	9,670	-35.2		274	9.1
250----	29	10,912	-45.5		290	12.0
200----	29	12,360	-57.6		294	15.2
175----	27	13,191	-64.0		300	19.2
150----	26	14,122	-69.8		296	20.6
125----	25	15,191	-73.6		288	15.2
100----	22	16,500	-71.8		277	3.3
80-----	22	17,818	-70.3		93	9.9
60-----	18	19,554	-64.3		84	22.5
50-----	18	20,677	-60.9		84	33.2
40-----	16	22,069	-57.4		87	35.5
30-----	13	23,891	-53.5		87	42.3
20-----						

SANTA MARIA, CALIF. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	74	13.5	76	301	8.5
1,000--	30	120	13.2	77	304	8.2
950----	30	568	16.9	62	331	8.0
900----	30	1,019	20.3	35	340	12.2
850----	30	1,511	18.6	29	9	9.7
800----	30	2,027	15.3	29	31	6.4
750----	30	2,579	12.5		327	5.2
700----	30	3,146	9.5		301	7.8
650----	30	3,761	6.0		291	9.3
600----	30	4,407	1.7		275	10.3
550----	30	5,104	- 3.4		260	10.9
500----	30	5,848	- 8.8		261	11.8
450----	30	6,665	-14.9		262	12.6
400----	30	7,535	-21.8		259	15.3
350----	30	8,503	-29.6		254	16.3
300----	29	9,584	-38.4		244	16.9
250----	29	10,811	-47.6		246	22.3
200----	28	12,261	-55.4		252	30.3
175----	28	13,106	-58.3		259	30.9
150----	28	14,069	-61.2		253	27.8
125----	28	15,190	-64.4		247	22.3
100----	28	16,549	-65.5		246	8.7
80-----	28	17,908	-63.8		180	2.7
60-----	27	19,694	-58.7		89	10.3
50-----	26	20,845	-56.3		87	17.5
40-----	23	22,270	-53.4		92	18.1
30-----	13	24,129	-51.1			
20-----						

SANTA MONICA, CALIF. (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	38	17.0	84	242	6.6
1,000--	30	107	16.4	83	239	7.0
950----	30	553	19.6	55	244	5.4
900----	30	1,012	20.3	38	267	2.9
850----	30	1,504	19.6	24	236	4.1
800----	30	2,023	16.9	23	246	3.9
750----	30	2,573	13.6	22	254	4.5
700----	30	3,147	10.1	23	254	5.6
650----	30	3,762	6.6		246	9.3
600----	30	4,411	2.3		245	9.3
550----	29	5,104	- 2.8		244	11.1
500----	28	5,855	- 8.4		248	13.2
450----	28	6,670	-14.6		246	13.6
400----	28	7,544	-21.9		241	15.3
350----	28	8,511	-29.8		239	18.5
300----	28	9,590	-38.4		237	23.3
250----	28	10,818	-47.2		242	30.7
200----	28	12,263	-55.8		241	36.3
175----	28	13,105	-59.4		239	36.9
150----	24	14,066	-62.6		242	28.7
125----	19	15,185	-65.8		240	19.2
100----	11	16,537	-68.3		235	13.0
80-----	6	17,880	-65.5			
60-----						
50-----						
40-----						
30-----						
20-----						

S. STE. MARIE, MICH. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	221	14.2	79	275	1.2
1,000--	30	128				
950----	30	568	15.7	66	288	2.9
900----	30	1,023	14.1	64	283	3.7
850----	30	1,503	11.3	68	284	4.1
800----	30	2,008	8.7	67	312	7.0
750----	30	2,543	6.2	60	317	8.5
700----	30	3,103	3.2	56	313	11.3
650----	30	3,705	- .2	51	315	13.4
600----	30	4,338	- 3.9	47	320	16.7
550----	29	5,023	- 8.2	46	321	19.0
500----	28	5,753	-12.9	44	324	20.0
450----	27	6,554	-18.3	40	321	21.2
400----	27	7,413	-24.7	39	317	22.5
350----	27	8,369	-32.1	41	308	24.5
300----	27	9,439	-40.1		298	30.1
250----	26	10,668	-48.4		291	31.7
200----	25	12,113	-54.8		292	36.5
175----	25	12,962	-56.3		295	34.4
150----	25	13,937	-57.7		298	31.1
125----	24	15,090	-59.0		306	25.6
100----	21	16,485	-60.0		312	17.7
80-----	16	17,877	-59.3		332	10.9
60-----	14	19,694	-55.9		30	8.7
50-----	13	20,856	-53.4		50	10.5
40-----	12	22,295	-52.0			
30-----	7	24,191	-48.8			
20-----						

SHREVEPORT, LA. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	76	24.7	77	153	4.1
1,000--	30	124	24.9	73	151	5.1
950----	30	581	23.0	67	165	10.1
900----	30	1,043	19.8	69	166	6.8
850----	30	1,534	16.7	69	172	3.5
800----	30	2,049	14.1	63	286	1.6
750----	30	2,596	11.1	56	329	3.7
700----	30	3,164	7.7	53	342	6.0
650----	30	3,778	4.0	51	346	8.5
600----	30	4,417	.1	51	350	9.9
550----	30	5,110	- 4.0	46	352	11.7
500----	29	5,854	- 8.7	39	349	11.1
450----	29	6,672	-14.0	36	335	10.3
400----	28	7,548	-19.8		323	10.1
350----	27	8,522	-27.0		309	11.1
300----	27	9,612	-35.4		295	11.3
250----	26	10,854	-45.2		284	10.5
200----	25	12,308	-55.9		296	11.3
175----	25	13,147	-60.8		308	10.7
150----	25	14,093	-65.6		320	11.7
125----	24	15,190	-69.5		348	11.5
100----	22	16,516	-70.1		19	8.4
80-----	21	17,848	-67.5		64	9.3
60-----	21	19,602	-61.5		79	14.2
50-----	21	20,741	-57.9		80	17.9
40-----	20	22,158	-54.8		91	20.6
30-----	11	24,014	-50.7			
20-----						
15-----						

SPOKANE, WASH. (930 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	722	18.1	46	214	4.9
1,000--	30	98				
950----	30	543				
900----	30	1,006	15.9	45	221	9.3
850----	30	1,488	11.7	51	233	11.8
800----	30	1,991	7.5	57	236	13.4
750----	30	2,526	3.1	64	237	15.2
700----	30	3,074	- .6	62	241	16.7
650----	30	3,668	- 4.2	58	234	19.2
600----	30	4,289	- 7.9	54	234	22.7
550----	30	4,965	-12.1	54	233	25.3
500----	30	5,683	-16.7	55	233	27.2
450----	30	6,475	-21.8	49	231	31.1
400----	30	7,324	-27.6	45	231	34.0
350----	30	8,269	-35.1	43	236	36.7
300----	30	9,326	-43.2		234	35.4
250----	30	10,532	-50.1		234	34.0
200----	30	11,979	-52.2		239	32.1
175----	30	12,844	-52.0		238	28.4
150----	30	13,840	-52.7		228	25.8
125----	30	15,012	-54.7		227	20.6
100----	30	16,436	-55.6		217	14.4
80-----	29	17,859	-55.5		185	7.8
60-----	28	19,701	-53.4		110	7.6
50-----	27	20,876	-52.7		94	12.0
40-----	25	22,325	-51.5		88	14.4
30-----	22	24,195	-49.3		92	18.1
20-----	14	26,868	-45.8		96	22.0
15-----	7	28,810	-42.2			

SWAN ISLAND, W. I. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	10	26.7	84	84	9.9
1,000--	30	126	25.9	84	82	13.4
950----	30	579	22.8	85	96	16.7
900----	30	1,048	20.0	81	103	18.1
850----	30	1,540	17.2	76	108	17.3
800----	30	2,056	14.5	69	107	17.1
750----	30	2,601	11.7	61	109	16.5
700----	30	3,174	8.5	52	114	14.2
650----	29	3,790	4.9	50	118	13.8
600----	29	4,432	1.2	51	119	12.8
550----	29	5,126	- 2.7	50	124	10.7
500----	29	5,877	- 7.2	50	128	8.4
450----	29	6,695	-12.2	51	136	4.1
400----	29	7,582	-17.9	49	195	2.3
350----	29	8,565	-25.2	44	268	5.1
300----	29	9,663	-33.8	42	280	8.0
250----	28	10,912	-44.3		279	12.0
200----	27	12,366	-56.6		288	18.6
175----	27	13,199	-63.3		289	19.4
150----	26	14,128	-70.4		292	19.2
125----	20	15,192	-74.4		303	10.5
100----	13	16,501	-72.5		36	3.5
80-----	10	17,815	-69.8		83	19.0
60-----	9	19,556	-63.7			
50-----	8	20,687	-59.6			
40-----	8	22,092	-56.8			
30-----	5	23,913	-53.2			
20-----						
15-----						

TACUBAYA, MEXICO (774 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	2,306	16.7	65		
1,000--	30	58				
950----	30	516				
900----	30	989				
850----	30	1,493				
800----	30	2,015				
750----	30	2,569	14.8	66		
700----	30	3,151	10.2	73		
650----	30	3,768	5.7	79		
600----	30	4,415	1.3	82		
550----	30	5,109	- 2.5	72		
500----	29	5,863	- 6.4	61		
450----	29	6,686	-11.2	56		
400----	28	7,575	-17.1	54		
350----	28	8,562	-24.1	52		
300----	27	9,667	-32.7	45		
250----	27	10,925	-42.9			
200----	27	12,390	-54.9			
175----	27	13,230	-61.4			
150----	21	14,177	-68.2			
125----	19	15,257	-73.4			
100----	12	16,547	-76.1			
80-----	10	17,843	-71.4			
60-----	9	19,571	-64.8			
50-----	7	20,687	-61.9			
40-----	5	22,068	-58.1			
30-----						
20-----						
15-----						

TAMPA, FLA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	24.9	76	74	2.5
1,000--	30	155	24.8	72	72	3.3
950----	30	605	22.2	70	102	2.1
900----	30	1,074	19.4	66	147	3.7
850----	30	1,564	16.3	63	165	4.9
800----	30	2,077	13.1	63	162	4.3
750----	30	2,627	9.9	58	139	2.9
700----	30	3,188	6.5	53	171	1.4
650----	30	3,801	3.2	46	237	2.1
600----	30	4,439	- .5	46	246	2.7
550----	30	5,132	- 4.6	47	287	4.9
500----	30	5,874	- 9.3	49	300	4.9
450----	30	6,692	-14.2	48	300	5.1
400----	30	7,566	-20.4	46	309	5.6
350----	30	8,539	-28.0	44	310	4.7
300----	30	9,626	-36.9		323	7.8
250----	29	10,862	-47.2		312	8.7
200----	29	12,301	-58.3		289	11.8
175----	29	13,130	-63.5		303	12.4
150----	28	14,066	-67.6		324	10.1
125----	27	15,153	-69.7		348	7.6
100----	25	16,481	-68.6		34	5.2
80-----	25	17,826	-65.7		79	8.5
60-----	24	19,588	-61.5		83	17.5
50-----	23	20,726	-58.6		81	21.6
40-----	21	22,144	-55.7		84	27.8
30-----	17	23,987	-51.4		97	28.4
20-----	13	26,648	-47.1		88	33.8
15-----						

TATOOSH ISLAND, WASH. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	31	11.8	86	240	5.1
1,000--	30	148	10.9	84	246	6.4
950----	30	572	8.1	82	230	8.9
900----	30	1,019	5.6	79	224	10.3
850----	30	1,484	3.3	77	227	11.7
800----	30	1,974	1.0	75	234	11.8
750----	30	2,494	- 1.3	65	230	15.5
700----	30	3,038	- 4.0	61	231	18.1
650----	29	3,620	- 7.2	61	230	20.6
600----	29	4,238	-10.3	58	234	23.9
550----	29	4,906	-14.1	51	236	26.0
500----	29	5,620	-18.6	47	239	29.5
450----	29	6,404	-23.8	45	238	32.6
400----	29	7,247	-29.7	44	244	35.5
350----	28	8,182	-36.8		246	35.7
300----	28	9,232	-43.8		246	39.4
250----	26	10,431	-49.2		248	39.8
200----	25	11,890	-50.4		247	32.2
175----	25	12,762	-49.8		245	29.9
150----	25	13,769	-50.2		238	23.5
125----	23	14,948	-51.2		231	20.0
100----	23	16,395	-52.0		220	15.2
80-----	22	17,835	-52.5		198	11.1
60-----	19	19,696	-52.1		135	6.2
50-----	17	20,864	-52.2		127	10.9
40-----	13	22,308	-51.7		109	12.2
30-----	11	24,176	-50.3			
20-----						
15-----						

TOPEKA, KANS. (983 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	270	24.6	66	141	6.2
1,000--	30	111				
950----	30	565	24.1	57	156	11.1
900----	30	1,036	21.0	56	180	14.0
850----	30	1,528	18.4	51	192	12.4
800----	30	2,045	15.6	48	207	7.0
750----	30	2,594	12.4	46	266	3.3
700----	30	3,165	9.1	44	318	7.4
650----	30	3,777	5.2	40	322	9.9
600----	30	4,424	.8	40	328	12.0
550----	30	5,114	- 4.1	35	331	13.4
500----	30	5,860	- 9.1		329	16.5
450----	30	6,674	-14.6		322	16.7
400----	30	7,548	-21.0		315	19.0
350----	30	8,520	-28.2		309	20.8
300----	30	9,607	-36.3		300	22.7
250----	30	10,845	-45.6		297	23.5
200----	30	12,299	-55.4		290	22.0
175----	29	13,141	-59.7		291	22.0
150----	29	14,097	-62.8		296	20.4
125----	28	15,214	-65.5		297	14.0
100----	25	16,563	-66.2		320	9.5
80-----	24	17,918	-63.5		33	6.6
60-----	24	19,704	-59.0		75	10.3
50-----	24	20,853	-56.5		83	13.4
40-----	23	22,279	-53.9		82	14.0
30-----	21	24,143	-51.0		87	14.6
20-----						
15-----						

TUCSON, ARIZ. (921 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	781	32.6	19	292	3.9
1,000--	30	34				
950----	30	502				
900----	30	989	31.2	19	287	8.4
850----	30	1,497	27.1	21	290	12.0
800----	30	2,028	22.5	24	289	11.3
750----	30	2,588	17.5	30	284	8.4
700----	30	3,168	12.3	36	279	4.5
650----	30	3,783	7.1	40	193	3.7
600----	30	4,436	2.1	43	188	8.2
550----	29	5,130	- 3.1	44	194	11.1
500----	29	5,879	- 8.4		195	12.2
450----	29	6,694	-13.6		206	11.8
400----	29	7,575	-19.9		225	15.2
350----	29	8,551	-27.3		227	20.8
300----	29	9,642	-35.4		234	24.3
250----	29	10,886	-45.0		239	28.9
200----	29	12,344	-55.0		242	37.5
175----	29	13,186	-60.2		246	38.7
150----	25	14,131	-64.8		243	33.4
125----	20	15,229	-69.2		237	23.1
100----	19	16,554	-70.5		215	8.5
80-----	19	17,886	-67.2		150	4.9
60-----	14	19,644	-61.4		92	8.0
50-----	13	20,781	-59.0		84	15.5
40-----	13	22,190	-56.0		92	20.2
30-----	12	24,031	-52.2		91	21.2
20-----	12	26,673	-48.1		82	22.9
15-----	6	28,607	-46.1			

VERA CRUZ, MEXICO (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	13	27.3	79		
1,000--	28	105	26.6	79		
950----	28	553	23.3	79		
900----	28	1,028	20.6	73		
850----	28	1,520	17.5	72		
800----	28	2,036	14.5	72		
750----	28	2,593	11.5	69		
700----	28	3,155	8.4	69		
650----	28	3,773	4.9	66		
600----	28	4,414	1.4	63		
550----	28	5,116	- 2.4	62		
500----	28	5,862	- 6.6	59		
450----	27	6,699	-11.5	57		
400----	25	7,572	-17.2	53		
350----	23	8,558	-24.2	49		
300----	23	9,663	-32.3			
250----	21	10,918	-42.6			
200----	21	12,383	-55.2			
175----	19	13,219	-62.1			
150----	15	14,158	-68.6			
125----	9	15,244	-73.6			
100----						
80-----						
60-----						
50-----						
40-----						
30-----						
20-----						
15-----						

WASHINGTON, D. C. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	88	21.3	75	222	2.1
1,000--	30	140	21.6	70	215	2.3
950----	30	587	20.7	65	245	5.8
900----	30	1,052	17.9	67	260	6.8
850----	30	1,539	14.6	69	275	8.2
800----	30	2,049	11.3	72	269	9.5
750----	30	2,594	8.2	63	254	8.9
700----	30	3,153	5.0	55	252	7.6
650----	30	3,760	1.8	51	260	9.5
600----	30	4,395	- 1.7	49	267	11.7
550----	30	5,087	- 5.5	44	270	11.3
500----	30	5,825	-10.0	37	272	13.4
450----	30	6,641	-15.5		276	14.8
400----	30	7,510	-21.7		277	15.7
350----	30	8,480	-28.7		276	19.0
300----	30	9,565	-37.2		277	22.9
250----	30	10,798	-47.1		274	25.1
200----	30	12,240	-57.4		275	26.2
175----	30	13,075	-61.1		285	25.8
150----	30	14,027	-62.6		302	21.0
125----	29	15,144	-63.1		316	13.2
100----	29	16,516	-63.3		324	7.2
80-----	29	17,894	-60.5		17	4.5
60-----	28	19,701	-57.4		77	7.0
50-----	28	20,856	-56.0		69	10.7
40-----	27	22,285	-53.1		86	14.8
30-----	26	24,153	-50.4		92	16.3
20-----	18	26,827	-46.7		89	17.5
15-----	5	28,775	-43.3			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

* Observations began June 16, 1956.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb)	WINNEMUCCA, NEV. (866 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	YAKUTAT, ALASKA (1012 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	YUMA, ARIZ. (994 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,310	22.2	27	324	5.2	30	12	10.4	77	302	1.6	29	105	35.4	16	247	6.0
1,000	29	37					30	107	9.5	77	297	1.7	29	48				
950	29	496					30	531	6.4	79	143	1.2	29	511	32.3	17	242	8.9
900	29	970					30	972	3.5	80	128	3.7	29	992	28.5	19	246	6.8
850	29	1,472	21.6	26	285	7.0	30	1,434	1.0	79	128	4.9	29	1,495	24.4	21	255	7.2
800	29	1,994	17.4	26	283	10.9	30	1,919	- 1.2	75	138	6.6	29	2,021	20.1	24	240	6.8
750	29	2,544	12.5	30	270	9.3	30	2,439	- 3.8	71	126	6.8	29	2,574	15.7	25	233	8.7
700	29	3,113	7.3	36	259	9.5	30	2,973	- 6.5	68	112	8.2	29	3,152	11.6	27	228	10.9
650	29	3,720	2.2	40	239	12.8	30	3,556	- 9.8	63	106	9.5	28	3,770	7.3		216	10.9
600	29	4,358	- 2.8	41	226	18.1	30	4,163	-13.3	58	116	10.1	28	4,421	2.6		206	9.9
550	28	5,037	- 7.8	39	232	24.1	30	4,819	-17.5	56	124	11.5	28	5,118	- 2.3		218	9.9
500	27	5,765	-13.0	34	237	26.4	29	5,528	-22.2	51	130	10.9	28	5,868	- 7.9		211	9.7
450	27	6,564	-18.8		245	28.4	29	6,298	-27.4	45	118	10.5	27	6,685	-13.8		204	10.9
400	27	7,426	-25.3		249	29.5	29	7,131	-33.7	45	122	12.6	27	7,564	-20.8		221	13.0
350	27	8,380	-33.1		252	34.4	29	8,052	-40.7		120	14.0	27	8,534	-28.5		222	15.7
300	27	9,446	-41.6		253	34.8	29	9,084	-47.7		105	12.2	27	9,620	-36.8		233	22.3
250	26	10,653	-50.7		251	37.1	29	10,278	-49.4		122	12.0	27	10,856	-46.0		239	27.6
200	24	12,095	-55.6		245	40.8	28	11,747	-45.2		127	7.6	22	12,311	-55.5		242	32.4
175	22	12,946	-55.8		244	38.5	28	12,638	-45.0		124	6.6	21	13,153	-60.2		233	27.8
150	21	13,917	-57.6		241	33.6	28	13,666	-45.6		143	6.0	20	14,104	-64.3		243	25.8
125	16	15,064	-59.5		238	31.9	28	14,877	-46.4		156	5.1	17	15,203	-68.4		234	18.3
100	13	16,465	-62.1		236	17.9	28	16,356	-46.9		130	7.8	11	16,538	-70.1			
80	9	17,834	-61.3				28	17,833	-46.8		157	7.8						
60	7	19,630	-58.4				28	19,737	-46.8		133	5.6						
50	7	20,784	-55.6				28	20,944	-47.0		117	9.7						
40	7	22,210	-54.4				27	22,423	-47.0		108	12.6						
30	7	24,062	-52.4				24	24,317	-46.6		102	15.9						
20	5	26,697	-49.1				10	27,067	-43.6									

RAWINSONDE DATA

Average monthly values

Table 20 *Air Force data for February 1956

Standard pressure surface (mb)	DENVER, COLO. (829 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	OGDEN, UTAH (854 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	RANTOUL, ILL. (990 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,661	- 4.7	57	186	1.6	29	1,450	- 4.0	51	87	2.1	29	227	- 0.7	72	41	1.4
1,000	29	154					29	180					29	140				
950	29	573					29	597					29	554	6	70	235	1.7
900	29	1,009					29	1,029					29	983	- 1.1	66	253	7.0
850	29	1,463					29	1,484			102	2.5	29	1,438	- 1.5	62	264	11.3
800	29	1,944	- 3.0	50	278	3.1	29	1,962	- 5.1	51	211	5.8	29	1,920	- 3.2	59	274	15.3
750	29	2,457	- 5.3	50	296	6.4	29	2,471	- 7.6	53	251	7.4	29	2,434	- 5.3	58	279	20.0
700	29	2,991	- 8.5	50	279	10.1	29	3,000	-11.0	53	296	10.3	29	2,966	- 8.2	60	276	25.6
650	29	3,567	-12.6	50	284	14.4	29	3,572	-14.1	51	299	14.2	29	3,546	-11.3	55	274	29.5
600	29	4,168	-16.6	50	289	19.6	29	4,169	-17.4	47	302	17.3	29	4,148	-15.2	52	273	33.8
550	29	4,814	-21.1	46	293	24.5	29	4,818	-21.4	44	300	20.0	29	4,800	-19.5	49	276	39.2
500	29	5,512	-25.6	43	293	28.0	29	5,512	-25.8	46	299	24.5	29	5,500	-24.3	47	275	46.8
450	29	6,270	-31.1		287	32.6	29	6,273	-30.9	46	301	28.9	29	6,265	-29.4		271	54.0
400	29	7,091	-37.2		288	39.4	29	7,092	-36.9		299	32.6	29	7,091	-34.8		270	60.6
350	29	8,001	-43.4		287	43.5	29	8,002	-43.5		298	37.5	29	8,008	-41.6		269	69.2
300	29	9,022	-50.1		286	51.7	29	9,023	-50.0		298	42.0	29	9,037	-48.3		266	77.3
250	29	10,198	-54.8		284	51.7	29	10,198	-55.1		296	44.7	29	10,223	-53.3		263	79.8
200	29	11,618	-55.8		274	51.1	29	11,614	-55.9		294	41.2	29	11,648	-55.1		262	78.3
175	29	12,470	-54.8		272	52.4	29	12,467	-53.9		288	39.8	29	12,502	-54.4		267	72.6
150	29	13,434	-55.3		272	48.0	29	13,457	-53.4		293	38.1	29	13,488	-54.8		269	67.4
125	29	14,615	-56.5		275	41.2	25	14,635	-54.6		285	31.7	29	14,647	-56.5		269	58.3
100	29	16,025	-57.8		269	28.0	18	16,070	-56.5		295	24.3	28	16,058	-57.8		271	47.8
80	28	17,426	-58.6		268	20.0	12	17,479	-58.7		308	14.4	25	17,465	-58.5		270	33.0
60	28	19,240	-57.6		273	8.4	8	19,299	-57.8				22	19,275	-57.2		271	21.8
50	28	20,392	-57.2		264	6.0	6	20,464	-57.2				19	20,424	-56.9		272	13.4
40	20	21,795	-55.8		74	5.2	6	21,875	-56.8				17	21,840	-56.1		281	11.3
30	17	23,630	-55.8		76	10.1							12	23,667	-56.1		313	10.1
20	13	26,213	-55.2		19	4.9							6	26,235	-55.2			
15	11	28,065	-53.6		55	13.2												
10	5	30,662	-52.4															

* March data for the above Air Force stations will be included in the July issue of this publication

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Table 30. [illegible] intensities, [illegible] per minute on a surface normal to the direction of the sun — JUNE 1956

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	0.0°	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0
June									
4#	-	----	---	----	Cloudy	----	---	---	---
5	-	-	---	----	Cloudy	- -	--	-	----
6	0.67	0.75	0.93	1.12	- -	1.14	1.02	0.91	0.84
7	.76	.84	.97	1.15	--	----	- -	- -	---
8	.38	.45	.61	.84	----	----	----	- --	---
9	.55	.67	.82	.99	1.20	1.04	-	.71	----
10	-	---	-	---	Cloudy	-	---	---	---
11	- -	---	---	.82	1.11	- -	- -	--	---
12	---	-	---	- -	1.23	1.11	1.02	.92	.88
13	.69	.76	.93	1.07	1.30	--	-	----	---
14	--	---	---	.98	1.29	---	--	--	--
15	.67	.75	.93	1.11	1.25	.90	.76	.69	.61
16	.66	.73	.89	1.10	1.32	1.01	84	.70	.63
17	.68	.76	.88	1.06	1.20	- -	- -	--	----
18	.52	.58	.74	.89	1.14	----	--	---	--
19	---	---	---	.95	----	---	----	---	---
20	---	---	---	---	Cloudy	-	----	---	----
21	.59	.65	.76	1.00	1.23	1.10	.89	.66	.56
22	.67	.75	.88	1.05	1.28	1.07	.89	.77	---
23	.65	.71	.86	1.05	1.28	1.15	.94	.81	--
24	----	----	- -	--	Cloudy	- --	-	---	---
25	.52	.61	.74	.95	1.22	---	-	--	---
26	.66	.73	.88	**	---	---	--	---	---
27	.34	.42	.60	.81	---	----	---	---	----
28	----	---	----	---	Cloudy	---	---	---	---
29	----	---	---	----	Cloudy	---	---	---	---
30	----	--	-	- -	Cloudy	----	- -	- -	--
Averages	.60	.68	.83	1.00	1.23	1.07	.91	.77	.70

BLUE HILL, MASS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	0.0°	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.86	3.89	2.92	1.94	*0.97	1.94	2.92	3.89	4.86
June									
1	----	---	---	----	H1.12	HO.82	HO.57	---	-
6	HO.44	HO.52	HO.65	HO.84	---	H.76	H.53	----	----
7	- --	-	.71	.86	1.20	- --	-	- -	----
8	---	.76	.87	.99	1.25	----	-- -	---	----
11	----	---	- -	---	----	.83	.70	.60	----
12	.74	.83	.94	1.11	----	----	----	----	----
14	H.43	H.51	H.63	H.82	H1.02	----	----	----	----
15	H.24	H.32	H.41	H.62	H.93	H.70	H.61	H.51	H.40
16	H.33	H.48	H.62	H.83	----	----	----	-- -	----
18	.62	.71	.85	1.06	1.35	1.04	.88	.72	.62
19	.73	.84	.95	1.14	----	----	.80	.71	.62
26	----	----	1.04	----	1.32	.99	--	----	----
28	- --	.81	.94	1.11	-- -	---	----	---	---
29	----	-	.86	1.04	----	---	----	---	-- -
Averages	.50	.64	.79	.95	1.17	.86	.70	.66	.56

TABLE MOUNTAIN, CALIF.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	0.0°	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 3.76	3.01	2.26	1.51	*0.75	1.51	2.26	3.01	3.76
June									
6	-	-	-	H1.37	- -	---	---	---	---
7	--	----	---	H1.21	---	---	----	- -	----
8	--	---	-	H1.25	--	----	-	--	----
10	----	---	- -	H1.42	----	--	--	----	----
11	---	- -	--	H1.43	----	- -	----	- --	--
12	- -	- -	--	H1.43	--	---	- -	---	---
13	---	---	----	H1.45	---	----	----	---	---
14	----	---	----	H1.30	----	----	----	----	----
16	----	---	----	H1.37	-	----	---	---	---
17	---	----	----	H1.30	----	----	----	---	----
18	HO.95	H1.05	H1.17	H1.27	----	----	---	----	----
20	----	---	----	H1.36	----	----	----	- -	---
21	H.98	H1.06	H1.18	H1.31	- -	---	----	-- -	-
22	----	- -	---	H1.29	- -	----	----	----	-
23	H.88	H1.01	H1.16	H1.36	----	----	----	---	---
24	----	---	---	H1.37	----	----	----	---	---
25	H1.05	H1.14	H1.27	H1.36	----	----	----	---	----
26	----	---	----	H1.35	----	----	----	---	---
27	----	-	---	H1.16	----	---	----	- -	---
Averages	.94	1.06	1.19	1.34		---	--	----	---

MADISON, WIS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	0.0°	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0
June									
4	----	----	IHO.79	MH1.03	MH1.21	- -	----	----	----
5	SHO.50	SHO.62	SH.77	MH.95	--	-	IHO.47	IHO.34	IHO.24
6	----	SH.41	MH.55	H.72	- -	----	----	----	----
8	----	- --	-	SH1.13	1.34	----	---	SH.76	SH.68
10	SH.57	SH.66	MH.62	MH1.00	SH1.25	----	----	----	----
12	H.45	H.53	H.64	MH.84	MH1.10	----	---	- -	-- -
21	----	MH.77	MH.90	----	---	----	---	---	--
23	-- -	----	-	SH1.06	---	----	----	----	----
27	SH.78	SH.91	SH1.04	SH1.19	-- -	----	----	-	----
28	SH.86	SH.99	SH1.09	SH1.23	---	-- -	---	--	----
Averages	.63	.70	.83	1.02	1.23	-	.47	.55	.46

* Extrapolated.
# Recorder calibrated, in operation, 1203 Solar time.
** Power failure remainder of day.

H Haze
IH Intense haze
SH Slight haze
MH Moderate haze

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75, No. 3, March 1947, p.47.

SOLAR RADIATION DATA

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys	[illegible]	148	[illegible]	[illegible]	185	156	75	[illegible]	138	[illegible]	196	157	187	[illegible]	146	171	170	204	[illegible]	[illegible]	59	171	[illegible]	172
Date	24	25	26	27	28	29	30	July 1	Avg.															
Langleys	[illegible]	[illegible]	[illegible]	122	[illegible]	211	215	171	[illegible]															

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys	85	138	245	390	[illegible]	393	81	246	127	[illegible]	[illegible]	[illegible]	[illegible]	347	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Date	24	25	26	27	28	29	30	July 1	Avg															
Langleys	206	[illegible]	407	[illegible]	[illegible]	[illegible]	432	302	[illegible]															

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys	[illegible]	176	[illegible]	245	[illegible]	148	85	193	203	208	[illegible]	[illegible]	256	259	178	230	[illegible]	256	[illegible]	262	58	[illegible]	[illegible]	[illegible]
Date	24	25	26	27	28	29	30	July 1	Avg.															
Langleys	168	243	250	111	200	185	-	-	[illegible]															

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys	102	400	284	419	396	206	90	271	270	473	455	320	373	424	166	351	357	178	136	104	59	353	321	343
Date	24	25	26	27	28	29	30	July 1	Avg															
Langleys	230	448	[illegible]	123	207	[illegible]	455	422	334															

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys	163	223	268	260	173	161	130	202	262	241	151	173	192	233	264	208	291	147	173	293	98	281	275	218
Date	24	25	26	27	28	29	30	July 1	Avg.															
Langleys	302	212	133	187	159	261	194	159	201															

Note Langley is the unit used to denote one gram calorie per square centimeter

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys	**	*[illegible]	347	[illegible]	334	354	315	384	**	[illegible]	398	402	359	**	[illegible]	[illegible]	[illegible]	**	*7	**	341	430	451	[illegible]	[illegible]	**	**	[illegible]	412	[illegible]		[illegible]

* Estimated values owing to occurrence of rain during period. While rain is falling, radiation is assumed to be zero.

** Radiometer inoperative.

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of Bermuda grass. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh. The instrument with which they were measured has not been checked by the Weather Bureau.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1956	Albrook Air Base Panama, C. Z.	Albuquerque, N. Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island, Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.
June 3------	---	---	626	773	383	756	556	222	591	165	363	169	682	---	405	730	92	562
June 4------	184	---	639	740	608	545	548	376	748	416	403	383	716	---	290	492	245	612
June 5------	97	647	508	700	265	546	571	444	372	535	632	517	746	617	312	423	557	522
June 6------	---	768	449	685	192	482	576	391	318	628	704	696	609	---	700	637	807	376
June 7------	107	732	211	585	372	651	585	754	796	721	---	711	596	---	406	502	804	581
June 8------	---	663	312	715	181	630	508	463	755	633	722	592	753	608	178	706	438	662
June 9------	---	805	404	312	240	511	423	632	779	151	686	100	730	423	129	682	872	734
Average-------	---	723	450	644	320	589	538	469	623	464	585	453	690	---	346	596	545	578
June 10------	---	726	494	704	560	482	726	688	755	381	605	325	640	585	91	564	856	728
June 11------	---	758	435	369	726	---	639	774	534	572	777	519	638	588	275	527	846	732
June 12------	---	799	395	322	743	---	---	670	744	735	749	708	---	---	374	585	706	644
June 13------	---	743	544	220	231	---	838	561	685	632	691	623	---	564	728	619	581	672
June 14------	236	820	550	415	446	---	549	490	701	678	326	639	---	569	---	518	752	489
June 15------	223	824	173	439	628	---	606	739	372	679	368	661	---	581	430	561	610	637
June 16------	276	827	400	308	320	---	549	812	615	421	609	469	---	544	779	666	345	473
Average-------	---	785	427	397	522	---	651	676	629	585	589	563	---	572	446	577	671	625
June 17------	201	---	58	489	586	---	589	782	769	486	765	438	---	584	547	478	442	372
June 18------	284	769	71	523	334	---	566	717	621	780	133	767	---	581	505	587	318	551
June 19------	---	---	391	729	361	---	377	684	785	704	180	762	---	533	811	285	826	643
June 20------	313	744	92	218	553	---	668	331	780	648	---	579	---	516	628	370	568	698
June 21------	242	823	77	620	815	---	277	333	430	106	785	136	---	533	120	421	633	686
June 22------	315	821	177	429	345	---	274	239	376	558	764	567	---	538	423	432	693	463
June 23------	240	821	407	585	556	---	540	104	603	626	395	549	---	580	782	441	516	668
Average-------	265	796	182	513	507	---	470	456	623	558	504	542	---	552	545	431	571	583
June 24------	177	630	417	214	650	---	548	490	697	370	719	488	---	598	451	530	495	667
June 25------	146	772	435	317	519	---	557	728	473	593	765	502	---	589	267	662	570	686
June 26------	286	786	130	638	740	---	696	322	785	751	755	731	---	263	817	653	680	603
June 27------	395	637	250	214	694	---	499	291	808	222	717	296	---	588	515	---	821	492
June 28------	230	579	387	515	495	---	355	524	791	561	736	562	---	579	443	568	676	747
June 29------	217	799	194	564	386	---	389	276	728	479	775	444	---	461	412	686	867	701
June 30------	221	664	214	655	465	---	421	329	695	713	786	692	---	571	606	280	824	613
July 1------	277	806	218	742	788	---	746	271	755	680	755	671	---	---	228	464	750	730
Average-------	243	709	281	482	592	---	526	404	716	546	751	548	---	521	468	549	710	655

1956	Davis, Calif.	Dodge City, Kans.	East Lansing, Mich.	East Wareham, Mass.	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianap'lis, Ind.	Inyokern, Calif.	Ithaca, N. Y.
June 3------	709	732	356	213	(771)	841	685	380	729	1032	697	741	601	828	606	491	888	599
June 4------	751	546	313	252	720	809	697	485	768	764	743	741	617	749	(680)	712	877	424
June 5------	734	663	674	(482)	669	825	514	646	757	983	720	790	633	644	(270)	612	873	412
June 6------	734	628	753	703	748	835	669	711	758	924	395	770	617	650	277	675	862	759
June 7------	723	786	661	692	729	830	639	709	738	976	759	807	622	685	187	643	849	756
June 8------	728	726	658	630	748	824	716	692	744	988	755	788	675	785	423	513	859	695
June 9------	740	758	708	---	760	826	602	419	746	200	594	677	459	660	462	712	855	581
Average-------	731	691	589	(495)	(735)	827	646	578	749	838	666	759	603	714	(415)	623	866	604
June 10------	751	772	807	---	708	827	387	679	753	904	727	679	573	413	556	681	876	553
June 11------	746	746	708	(506)	749	847	504	707	761	678	778	818	598	570	(768)	688	881	791
June 12------	745	746	690	681	757	779	510	---	763	---	773	686	---	587	841	666	885	717
June 13------	731	698	681	633	763	(826)	743	605	769	730	---	687	---	564	779	667	887	633
June 14------	552	768	700	626	---	---	590	670	(717)	660	---	532	579	388	657	423	847	602
June 15------	726	772	347	634	784	426	580	590	766	540	---	85	654	460	665	525	877	698
June 16------	740	729	358	475	784	737	633	689	756	366	---	490	544	780	806	599	860	557
Average-------	713	747	613	(592)	758	(740)	564	657	(755)	646	---	568	590	537	(725)	607	873	650
June 17------	753	(713)	359	415	757	562	535	670	753	696	---	792	608	629	656	586	852	463
June 18------	666	766	300	761	762	830	540	688	(735)	999	---	783	523	791	571	268	846	792
June 19------	706	679	756	749	775	732	464	647	603	742	---	717	265	462	(126)	371	849	789
June 20------	760	733	719	640	765	619	252	697	786	494	---	406	119	358	818	---	854	609
June 21------	777	736	711	101	493	(802)	260	717	760	1001	---	215	372	395	(788)	611	854	477
June 22------	751	753	529	497	787	811	466	735	751	921	---	(775)	608	439	761	199	840	734
June 23------	749	621	697	529	779	799	493	721	751	889	---	688	594	674	678	489	833	289
Average-------	737	(714)	553	528	731	(736)	430	696	(734)	820	---	(625)	441	535	(628)	421	847	593
June 24------	748	753	601	215	778	757	391	734	779	864	---	688	644	609	683	665	856	592
June 25------	756	733	494	494	654	814	642	723	773	932	---	633	678	671	641	658	860	596
June 26------	732	745	635	661	709	814	711	692	738	989	---	619	461	581	771	535	843	766
June 27------	704	502	780	189	705	677	436	706	739	268	---	796	483	686	662	705	827	624
June 28------	704	---	663	666	549	664	360	607	740	551	---	794	677	689	591	760	796	424
June 29------	737	---	652	549	731	728	599	672	757	---	---	819	657	588	589	746	811	606
June 30------	700	(749)	737	693	668	704	458	(722)	788	---	---	808	617	518	254	549	877	746
July 1------	707	664	464	---	502	802	700	734	749	---	---	644	649	389	697	697	880	615
Average-------	724	(691)	628	495	662	745	537	(699)	758	720	---	725	608	591	611	664	844	621

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued

1956	Lake Charles, La.	Lander, Wyo.	Las Vegas, Nev.	Lemont, Ill.	Little Rock, Ark	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Phoenix, Ariz.	Portland, Me.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash.	Seattle, Wash. (U. of W.)	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Upton, N. Y.	Wake Island, Pacific Area	Washington, D. C. (Silver Hill Obs.)
June 3------	516	655	787	740	341	643	632	694	544	108	575	---	718	305	461	602	474	603	---	737	767	555	603	654	331	361	534	69	41	454	191	747	293	---	592
June 4------	631	576	604	747	442	633	661	686	325	493	430	---	686	440	410	525	521	(652)	375	548	754	579	798	228	634	302	---	533	297	141	450	705	---	616	690
June 5------	656	621	800	686	466	720	703	632	641	---	426	---	691	609	464	710	702	736	520	690	776	622	804	861	646	343	617	623	573	601	359	717	618	687	688
June 6------	601	826	823	678	452	671	667	655	591	605	398	---	700	737	686	753	487	767	720	600	737	206	755	822	752	598	623	200	197	502	766	666	741	711	657
June 7------	---	785	812	387	491	608	620	164	614	722	507	700	713	750	571	748	599	776	691	795	754	636	792	637	766	591	647	376	333	592	751	715	753	566	725
June 8------	660	712	811	758	590	583	627	726	247	744	675	697	593	728	665	664	430	784	593	778	735	721	809	877	753	548	645	155	152	733	743	650	735	720	658
June 9------	502	647	817	736	606	588	652	707	244	722	698	451	595	228	254	716	715	772	96	788	666	702	772	---	532	248	235	170	185	699	479	717	501	715	394
Average-------	595	689	779	676	484	635	652	609	458	566	530	---	671	543	502	674	561	(727)	499	705	741	575	762	680	631	427	550	304	254	532	534	703	607	669	629
June 10------	485	728	814	594	674	633	703	657	251	689	209	595	638	437	183	686	689	759	185	748	751	671	744	863	168	196	288	453	420	---	685	572	226	701	417
June 11------	600	822	815	564	630	713	733	547	471	744	454	713	664	742	686	693	670	752	526	(800)	776	719	805	471	728	524	705	783	540	---	797	298	780	695	758
June 12------	503	812	833	641	424	774	779	681	339	720	428	737	370	738	681	535	640	748	730	(723)	802	494	(805)	741	756	563	710	493	517	--	731	344	758	678	739
June 13------	386	825	831	646	196	757	---	685	744	403	530	640	376	710	598	384	722	772	535	(770)	818	592	788	706	744	470	636	381	335	--	535	479	754	697	659
June 14------	487	738	792	587	132	635	651	728	709	381	540	706	361	682	684	485	505	810	707	(713)	770	387	760	666	714	540	578	---	468	213	483	513	711	624	669
June 15------	568	762	805	261	382	615	601	307	---	399	442	718	420	686	528	450	712	779	691	659	626	385	813	400	577	555	627	---	130	108	583	348	655	349	647
June 16------	331	856	807	561	454	661	650	362	---	596	477	698	583	473	428	631	702	789	480	666	761	220	803	180	595	361	308	367	347	108	576	243	614	114	507
Average-------	480	792	814	550	413	684	686	567	503	562	440	687	488	638	541	552	663	773	553	(726)	758	495	(788)	575	612	458	550	495	394	--	599	400	643	551	628
June 17------	395	721	797	383	555	562	594	455	691	749	668	677	567	416	441	668	720	757	694	(756)	612	321	786	279	507	448	466	589	628	---	431	617	546	514	591
June 18------	345	773	788	552	594	316	375	292	544	232	732	636	694	780	623	552	600	772	747	785	639	162	505	732	784	645	219	299	249	---	299	735	793	705	219
June 19------	579	700	784	422	592	567	578	364	505	---	715	681	566	703	602	540	725	756	781	633	559	613	632	580	600	621	728	359	139	---	388	595	641	180	752
June 20------	742	692	787	610	636	511	478	692	224	736	716	714	423	733	682	189	733	779	615	(712)	579	757	787	---	662	520	422	324	311	---	293	219	691	703	151
June 21------	671	784	800	632	628	482	493	622	165	751	659	676	338	123	110	365	733	792	91	728	732	420	771	735	73	259	80	775	785	---	412	619	104	725	208
June 22------	704	864	807	299	642	552	536	315	---	731	321	---	640	555	572	618	734	793	638	819	610	538	712	608	582	501	551	540	497	---	581	568	565	693	643
June 23------	674	763	809	641	631	640	640	751	197	571	549	---	532	670	631	524	455	764	509	801	691	712	563	510	626	181	587	476	511	---	463	740	602	665	624
Average-------	587	757	796	505	611	519	528	499	388	628	623	677	537	569	523	494	671	773	582	(748)	632	503	679	574	548	454	436	480	488	---	410	599	563	641	455
June 24------	710	728	805	717	645	558	585	728	237	751	558	684	644	232	566	591	230	(725)	380	(674)	707	649	782	225	600	468	653	454	482	---	653	692	483	635	738
June 25------	---	684	808	696	445	632	687	710	472	746	595	---	528	590	653	591	743	748	460	(534)	772	284	789	903	650	509	648	430	402	---	544	731	---	680	707
June 26------	736	837	806	398	444	723	739	248	586	743	274	---	277	759	643	---	489	752	753	(603)	760	585	781	131	756	582	653	677	610	---	684	721	778	479	661
June 27------	700	---	778	709	598	689	699	744	302	724	530	766	755	173	354	725	705	601	198	787	699	728	763	174	176	298	504	463	545	---	602	476	179	577	550
June 28------	623	738	715	752	260	678	684	747	561	720	308	---	610	717	571	695	587	582	593	(583)	679	759	757	(371)	596	417	408	745	679	---	600	436	626	685	391
June 29------	210	824	748	728	406	704	687	608	317	742	624	---	704	649	680	772	738	---	411	(727)	691	607	730	683	724	521	617	387	365	---	769	444	748	669	750
June 30------	660	780	764	689	672	678	739	693	512	752	679	729	520	758	638	637	750	---	539	490	738	451	568	433	764	510	653	644	---	---	759	555	771	710	682
July 1------	670	515	816	695	680	481	399	293	729	738	695	---	692	496	619	545	749	---	627	(653)	640	610	439	297	264	400	629	646	---	---	703	626	591	667	703
Average-------	616	730	780	673	519	643	652	596	465	740	533	---	591	547	591	651	624	(682)	495	(631)	711	584	701	(402)	566	463	596	556	514	---	664	585	597	638	648

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

CONDENSED CLIMATOLOGICAL SUMMARY

Table [illegible] DELAYED DATA

State	Temperature Average	Departure from normal	Monthly extremes Station	Highest	Date	Station	Lowest	Date	Precipitation Average	Departure from normal	Monthly extremes Station	Greatest	Station	Least
	°F.	°F.		°F.			°F.		In.	In.		In.		In.
[illegible]														
[illegible]	[illegible]	-11.3	[illegible]	[illegible]	[illegible]	[illegible]	-55	[illegible]	1.20	-0.94	[illegible]	13.93	Barrow WB AP	0.07
[illegible]														
Alaska	[illegible]	-3.8	[illegible]	52	[illegible]	Hughes	[illegible]	[illegible]	2.25	.31	Cordova	27.67	Wales AP	.18
Hawaii	68.8	.0	[illegible]	89	1+	Mauna Loa Upper	27	[illegible]	7.57	-.26	[illegible]	24.55	Haina	.78
January 1956														
Alaska			Shearwater Bay	[illegible]	28	Tanacross	-65	4+			Baranof	10.57	Chitina	.00
Hawaii			Kilauea Pt.	[illegible]	27	Mauna Loa Upper	28	7			Kilauea Field	51.25	Puu Mali	1.85
February 1956														
Alaska			Whittier	50	1	Teller	-68	28			Port Alexander	16.79	Barter Island	T
Hawaii			2 Stations	87	10	Mauna Loa Upper	[illegible]	[illegible]			Puohokamoa 2	75.74	Kaunakakai	.54
March 1956														
Alaska			Ketchikan	57	30	Teller	-64	1			Baranof	12.96	Chitina	.00
Hawaii			[illegible] Stations	88	20+	Mauna Loa Upper	[illegible]	19+			Papaikou Mau	[illegible]	Kaunakakai	.00
April 1956														
Alaska			[illegible]	76	[illegible]	Hughes	-46	[illegible]			Cordova	[illegible]	Allakaket	T
Hawaii			[illegible]	90	29	Mauna Loa Upper	[illegible]	13			Honokane	[illegible]	Kaunakakai	.00
May 1956														
Hawaii			2 Stations	90	10+	Kulani Mauka	[illegible]	10			Piihonua	30.60	5 Stations	.00

CLIMATOLOGICAL DATA

Table 2

State and station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90°F or above	Min 32°F or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	With thunderstorms	Snow, Sleet: Total	Max depth on ground	Wind: Average hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F.	°F	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
January 1956																																
ALASKA																																
Anchorage	92	1003.1	1008.4	15	-5	5.1	-7.9	36	31	21	10	0	31	-7	51	0.52	-0.24	0.40	5	0	5.9	47	5.5	N	*35	N	4	11	5	15	5.5	57
Annette	110	1003.1	1007.3	37	28	32.5	-2.1	47	13	12	28+	0	23	22	66	5.49	-3.91	2.17	16	0	8.0	4	15.8	ENE	*46	ENE	5	2	3	26	8.9	--
Barrow	22	1023.0	1023.5	-8	-27	-17.4	-2.3	22	13	-51	1	0	31	-28	51	.29	.13	.13	7	0	2.9	9	10.8	ESE	42	S	28	b	b	b	b	--
Bethel	10	1014.9	1016.3	4	-12	-4.3	-11.1	33	2	-28	24	0	31	-11	73	1.02	.12	.38	9	0	13.9	20	14.0	NNE	*31	NNE	18+	19	4	8	3.5	--
Cold Bay	90	1009.5	1013.6	24	13	18.2	-10.9	39	2	-5	21+	0	31	15	84	.60	-1.92	.23	11	0	4.2	7	13.4	NNW	*35	N	16	3	7	21	7.9	--
Cordova	10	1002.7	1004.5	27	8	17.5	-7.5	40	1	-10	11+	0	30	--		3.92	-3.13	1.31	12	0	45.4	36	--	---	--	- -	--	7	7	17	6.8	--
Fairbanks	436	1001.7	1020.8	-11	-30	-20.2	-10.4	19	30+	-53	5	0	31	-29	65	.43	-.56	.14	7	0	9.5	28	2.4	NNE	*20	W	7	11	6	14	5.6	--
Juneau	15	1009.5	1010.2	27	13	19.8	-6.4	44	22	-6	7	0	31	11	68	2.83	-1.65	.74	14	0	33.6	16	9.1	N	42	SE	18	4	5	22	7.9	33
King Salmon	44	1007.8	1010.3	6	-12	-3.0	-17.1	34	28	-29	25	0	31	-10	70	.76	-.29	.23	12	0	11.6	18	11.7	N	*39	NNW	8	12	5	14	5.2	--
Kotzebue	10	1022.4	1022.8	-5	-20	-12.8	-6.2	23	28	-36	1	0	31	-20	70	.28	-.19	.16	5	0	7.3	25	15.0	E	*53	E	6	12	6	13	5.1	--
McGrath	334	1005.1	1019.0	-9	-27	-17.9	-9.2	15	31	-43	4+	0	31	-27	64	1.11	-.03	.37	11	0	11.5	26	2.4	N	*21	N	4	18	3	10	4.2	--
Nome	13	1020.3	1021.2	6	-13	-3.8	-9.4	32	11	-30	1	0	31	-12	69	.22	-1.03	.19	4	0	2.2	23	10.6	E	42	NE	15+	14	9	8	4.0	83
Northway	1713	953.3	1022.4	-19	-37	-28.1	-11.0	2	31	-58	6	0	31	--	--	.21	-.40	.05	7	0	12.9	29	--	-	--	- -	--	7	7	17	6.8	--
St. Paul Island	22	1016.6	1017.6	26	18	21.9	-4.5	39	2	-4	24	0	28	19	87	.45	-1.37	.28	7	0	.8	2	--	---	--	--	--	6	5	20	7.2	--
Yakutat	28	1004.4	1005.1	32	17	24.7	-1.8	43	13	-1	26	0	31	19	78	9.62	-1.98	2.98	17	0	65.3	40	12.5	E	*52	S	19	10	3	18	6.3	--
May 1956																																
WEST VIRGINIA																																
Parkersburg	615	--	------	75	51	62.7	-.8	90	13	37	21	1	0	-		5.22	1.72	1.07	16	11	.0	0	5.8	--	28	NW	17	9	11	11	5.8	64

b Sun below horizon continuously until January 24th

See footnotes with current data.

HEATING DEGREE DAYS

Table 3

(Base 65°F.)

State and station	Current season: This month	Period July through this month	Normals July through this month	State and station	Current season: This month	Period July through this month	Normals July through this month	State and station	Current season: This month	Period July through this month	Normals July through this month	State and station	Current season: This month	Period July through this month	Normals July through this month
August 1955															
ALASKA															
Anchorage	323	549	530	Cold Bay	472	946		Kotzebue	450	796	827	St. Paul	557	1180	1119
Annette	328	601	479	Cordova	430	780	723	McGrath	403	637	563	Yakutat	411	738	759
Barrow	1012	1828	1609	Fairbanks	362	506	445	Nome	484	920	970				
Bethel	421	766	707	Juneau	396	643	654	Northway	432	610	536				
January 1956															
ALASKA															
Anchorage	1854	7408	6419	Cold Bay	1444	5849		King Salmon	2111			Northway	2892	10771	9508
Annette	1000	4742	3964	Cordova	1467	6345	5430	Kotzebue	2420	9380	8850	St. Paul	1328	6138	5753
Barrow	2559	12158	10875	Fairbanks	2651	9606	8693	McGrath	2573	9642	8663	Yakutat	1244	5902	5265
Bethel	2147	8016	7363	Juneau	1396	6118	5169	Nome	2134	8508	7808				

RAWINSONDE DATA

Average monthly values

Table 20

DELAYED DATA

Standard pressure surface (mb.)	1/ HAVANA, CUBA (1011 MB.)						2/ CAMAGUEY, CUBA (1003 MB.)						2/ TACUBAYA, MEXICO (775 MB.)						3/ SAN JUAN, P. R. (1016 MB)					
					Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	49	22.9	81			29	122	20.1	95			20	2,306	13.8	60			30	6	24.0	82	86	6.0
1,000--	30	145	22.9	78			29	146	20.3	93			20	92					30	146	23.5	76	89	10.9
950----	30	594	20.8	75			29	596	20.4	80			20	547					30	596	20.7	76	93	15.9
900----	30	1,058	17.6	75			29	1,058	17.8	75			20	1,018					30	1,059	17.8	75	97	14.0
850----	30	1,545	15.0	65			29	1,545	14.9	74			20	1,512					30	1,546	14.9	75	96	10.7
800----	30	2,057	13.4	46			29	2,056	12.4	66			20	2,036					30	2,058	12.8	63	90	8.0
750----	30	2,603	10.9	38			29	2,606	9.9	53			20	2,580	12.5	57			30	2,604	10.1	56	81	6.4
700----	30	3,171	8.2	37			29	3,166	7.4	44			20	3,155	8.7	60			30	3,169	7.1	48	59	1.9
650----	30	3,790	5.3				29	3,782	4.2	34			20	3,769	4.3	66			30	3,784	4.3	33	3	.4
600----	30	4,430	1.6				29	4,420	.6	27			20	4,411	- .2				30	4,423	1.1		337	1.4
550----	30	5,126	- 2.6				29	5,118	- 3.7				18	5,104	- 3.7				30	5,119	- 2.6		317	4.5
500----	30	5,875	- 7.6				29	5,859	- 8.4				18	5,851	- 8.0				29	5,867	- 7.3		299	7.6
450----	30	6,700	-12.9				29	6,683	-14.0				17	6,667	-13.4				29	6,688	-13.1		301	13.0
400----	30	7,576	-10.3				29	7,553	-20.0				16	7,547	-10.0				28	7,566	19.9		298	16.1
350----	30	8,554	-26.7				29	8,529	-26.9				12	8,515	-27.5				28	8,541	-27.4		291	22.3
300----	30	9,649	-34.8				29	9,622	-35.2				10	9,599	-35.0				28	9,631	-35.7		281	28.0
250----	30	10,896	-44.5				29	10,867	-44.9				6	10,820	-46.1				28	10,872	-45.1		277	37.1
200----	30	12,355	-55.0				29	12,322	-56.1				5	12,269	-57.5				28	12,326	-55.8		266	47.2
175----	29	13,194	-62.1				29	13,159	-62.1				5	13,099	-63.6				28	13,164	-61.8		265	45.8
150----	28	14,135	-67.5				29	14,099	-67.4										28	14,102	-68.2		268	46.6
125----	22	15,225	-71.7				26	15,186	-72.9										28	15,182	-72.4		270	36.5
100----	18	16,533	-75.5				18	16,473	-76.7										26	16,474	-77.1		268	23.3
80-----	15	17,821	-76.1				14	17,755	-76.2										24	17,747	-77.1		270	9.9
60-----	15	19,511	-68.3				11	19,437	-67.8										22	19,428	-68.8		159	2.7
50-----	15	20,619	-62.9				11	20,545	-62.8										22	20,533	-63.5		108	3.1
40-----	14	22,005	-50.1				5	21,946	-56.6										20	21,913	-58.2		80	6.8
30-----	13	23,827	-53.3																16	23,726	-54.3		77	12.2
20-----																			6	26,353	-50.0			

1/ November 1955
2/ December 1955
3/ April 1956

Also see footnotes with current data.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	MADISON, WIS.								
	Air mass								
	4.81	3.84	2.88	1.92	Noon	1.92	2.88	3.84	4.81
May									
7-----	S0.76	S0.82	----	----	S1.47	S1.22	S1.09	S0.92	S0.83
16----	S.78	S.89	S1.04	----	----	----	----	---	----
22----	KH.36	KH.46	KH.61	KH0.99	----	---	----	----	----
25----	M.72	M.82	M.98	M1.09	- -	- --	-	---	---
Aver-ages	.66	.75	.88	1.04	1.47	1.22	1.09	.92	.83

KH Smoke and haze
S Slight smoke and haze
M Moderate smoke and haze
See footnotes with current data

CORRECTIONS

Month: January 1956

page 17: Rawinsonde Data	the wind speed in the Table 20 reference note, pages 17-21, should be "meters per second".
page 21: Rawinsonde Data	the reference note should read - - - -. "The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind." - - - This change also applies to issues February through April.

Month: February 1956

page 51: Rawinsonde Data	the wind speed in the Table 20 reference note, pages 51 55, should be "meters per second;" also, in the special note regarding Rawin and Pibal data, pages 21 and 55 of the January and February issues, the end of the second paragraph should read "- - - of presenting wind data for constant height levels".

Month: Annual 1955

page 103: Pilot Balloon Data	El Paso, Tex., the 1,000 meter level should be dashed and data following moved one level higher so that last data level is at 10,000 m.

SOLAR RADIATION DATA

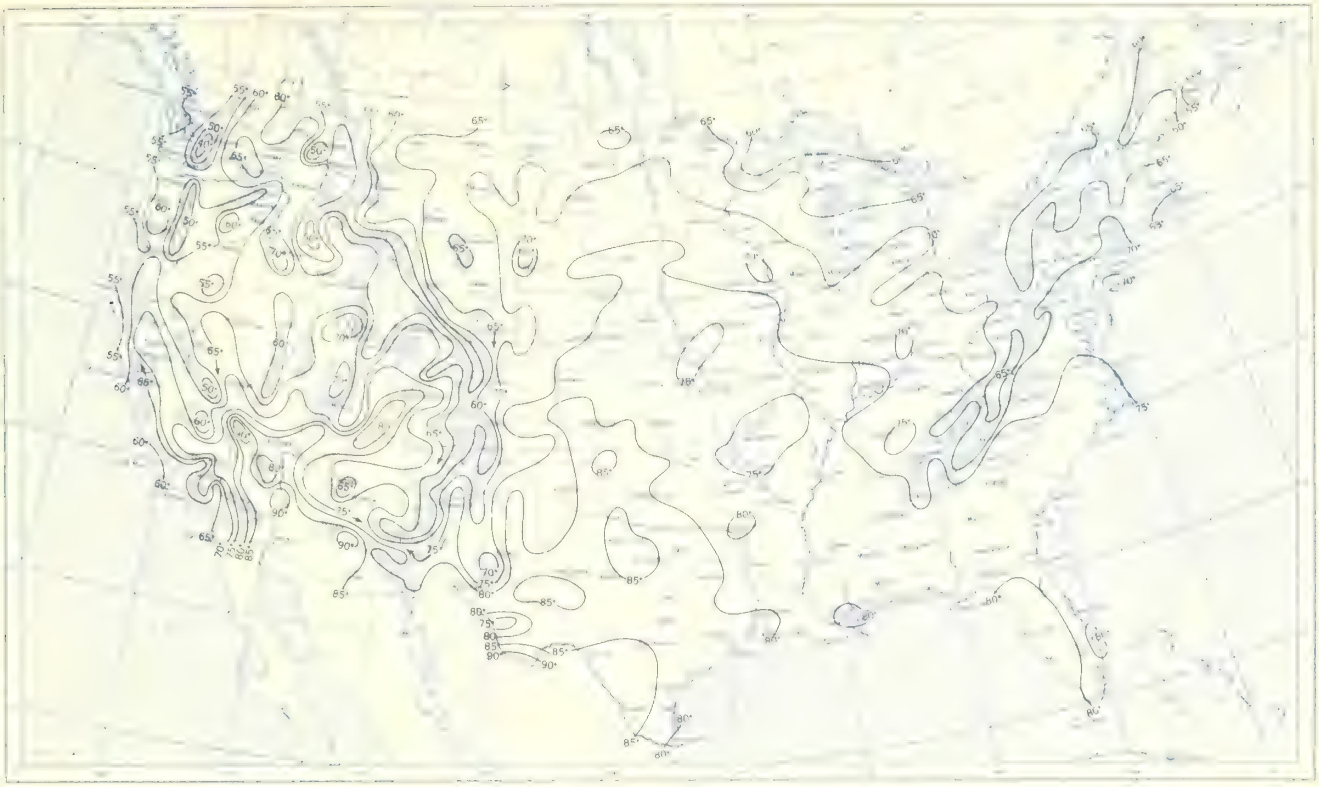
Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. DELAYED DATA

	Tallahassee, Fla.		Tallahassee, Fla.		Tallahassee, Fla.		Tallahassee, Fla.		Tallahassee, Fla.		Tallahassee, Fla.		Columbus, Ohio	State College, Pa.		Columbus, Ohio	Davis, Calif.		Matanuska, Alaska
1955		Apr.		May		June		July		Aug.		1956 Jan.			Feb.			Apr.	
Mar. 5------	385	2	- -	7	582	4	548	2	422	6	593	1	173	150	5	295	319	1	270
Mar. 6--- -	411	3	---	8	616	5	621	3	522	7	703	2	30	51	6	21	324	2	128
Mar. 7---	447	4	---	9	626	6	583	4	725	8	---	3	69	43	7	66	295	3	374
Mar. 8-- --	541	5	---	10	518	7	606	5	663	9	---	4	113	59	8	236	344	4	260
Mar. 9------	458	6	530	11	621	8	732	6	485	10	---	5	201	208	9	45	336	5	245
Mar. 10--- --	520	7	370	12	553	9	746	7	517	11	---	6	187	207	10	38	298	6	371
Mar. 11------	435	8	506	13	542	10	531	8	524	12	--	7	146	89	11	36	317	7	305
Average------	457		---		580		624		551		---		131	115		105	319		279
Mar. 12------	497	9	259	14	382	11	---	9	399	13	---	8	224	238	12	117	305	8	326
Mar. 13------	411	10	154	15	433	12	---	10	443	14	---	9	82	57	13	261	309	9	258
Mar. 14-- - -	491	11	204	16	397	13	---	11	381	15	---	10	35	19	14	65	359	10	176
Mar. 15-- ---	512	12	400	17	629	14	650	12	430	16	---	11	33	38	15	60	378	11	172
Mar. 16-----	513	13	188	18	631	15	616	13	(322)	17	---	12	40	39	16	209	369	12	---
Mar. 17-----	269	14	314	19	577	16	298	14	610	18	---	13	239	140	17	70	255	13	428
Mar. 18------	429	15	670	20	330	17	367	15	630	19	---	14	164	263	18	95	373	14	217
Average-------	446		313		483		483		(459)		---		117	113		125	335		263
Mar. 19---- -	446	16	665	21	162	18	327	16	631	20	---	15	96	261	19	101	52	15	340
Mar. 20------	483	17	659	22	206	19	422	17	501	21	---	16	75	126	20	377	71	16	523
Mar. 21------	361	18	642	23	492	20	700	18	654	22	---	17	224	128	21	222	323	17	341
Mar. 22------	311	19	644	24	570	21	651	19	664	23	---	18	97	253	22	304	54	18	---
Mar. 23------	575	20	567	25	446	22	611	20	538	24	-	19	32	51	23	391	359	19	579
Mar. 24- -- -	509	21	357	26	719	23	309	21	314	25	---	20	136	91	24	39	392	20	590
Mar. 25--- -	453	22	604	27	567	24	309	22	375	26	---	21	185	121	25	244	110	21	584
Average-------	448		591		452		476		525		---		121	147		240	194		493
Mar. 26 -----	393	23	586	28	657	25	485	23	421	27	---	22	186	114	26	401	363	22	463
Mar. 27------	619	24	391	29	568	26	560	24	285	28	621	23	263	289	27	179	409	23	568
Mar. 28------	86	25	689	30	694	27	473	25	637	29	604	24	269	295	28	414	312	24	577
Mar. 29---- -	- -	26	692	31	745	28	645	26	255	30	584	25	104	148	29	389	356	25	467
Mar. 30------	---	27	691	June 1	732	29	659	27	491	31	378	26	178	273	Mar 1	345	422	26	435
Mar. 31------	--	28	535	2	745	30	592	28	560	Sep 1	425	27	206	218	2	378	301	27	585
Apr. 1------	---	29	601	3	640	Jul. 1	467	29	508	2	215	28	113	267	3	180	364	28	579
Average	---		598		683		554		451		471		188	229		327	361		525
		30	699					30	556			29	59	32				29	534
		May 1	664					31	384			30	142	69				30	451
		2	681					Aug 1	555			31	284	141				May 1	89
		3	685					2	737			Feb 1	73	215				2	---
		4	660					3	721			2	38	81				3	---
		5	620					4	639			3	237	228				4	---
		6	647					5	792			4	44	52				5	---
		Avg.	665					Avg.	626			Avg.	125	117				Avg.	---

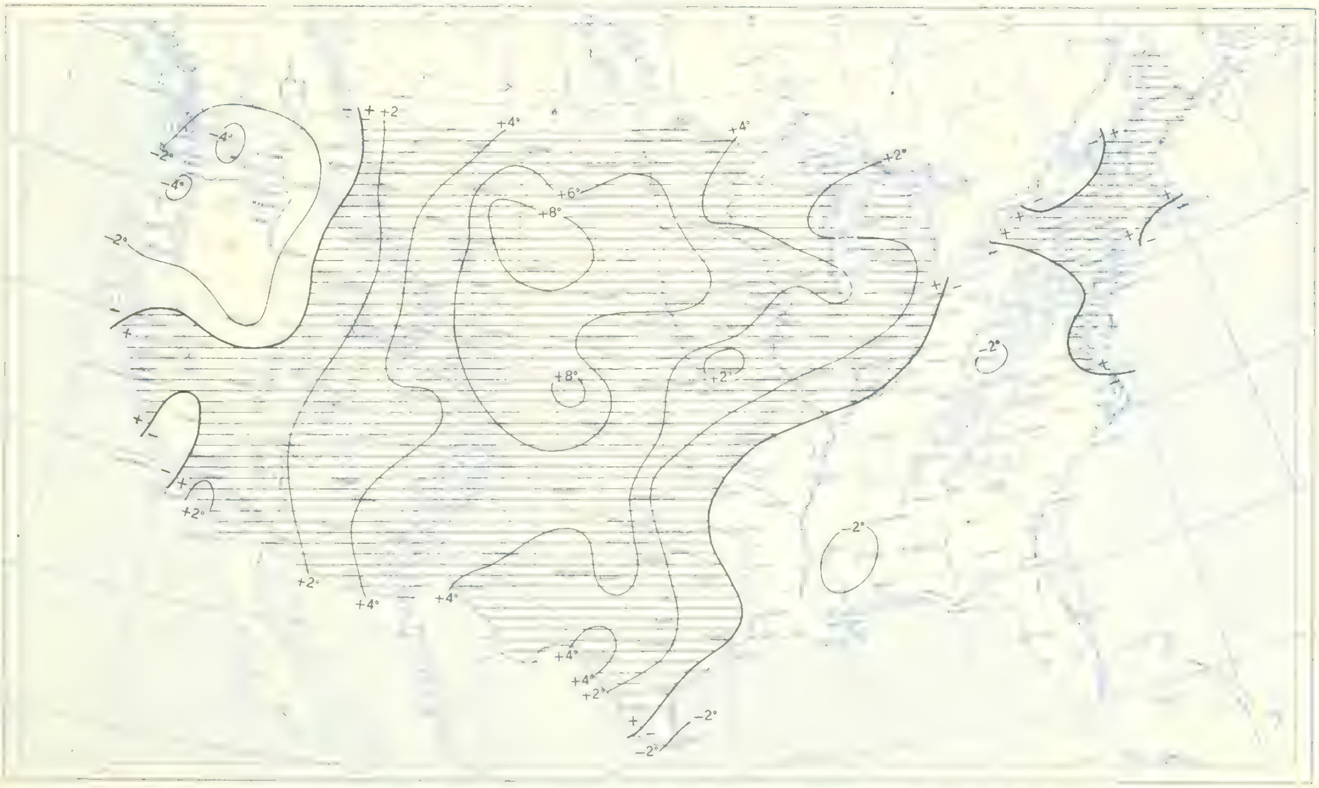
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

NWRC, Asheville, N. C. --- 9/13/56 --- 1850

Chart I. A. Average Temperature (°F.) at Surface, June 1956.

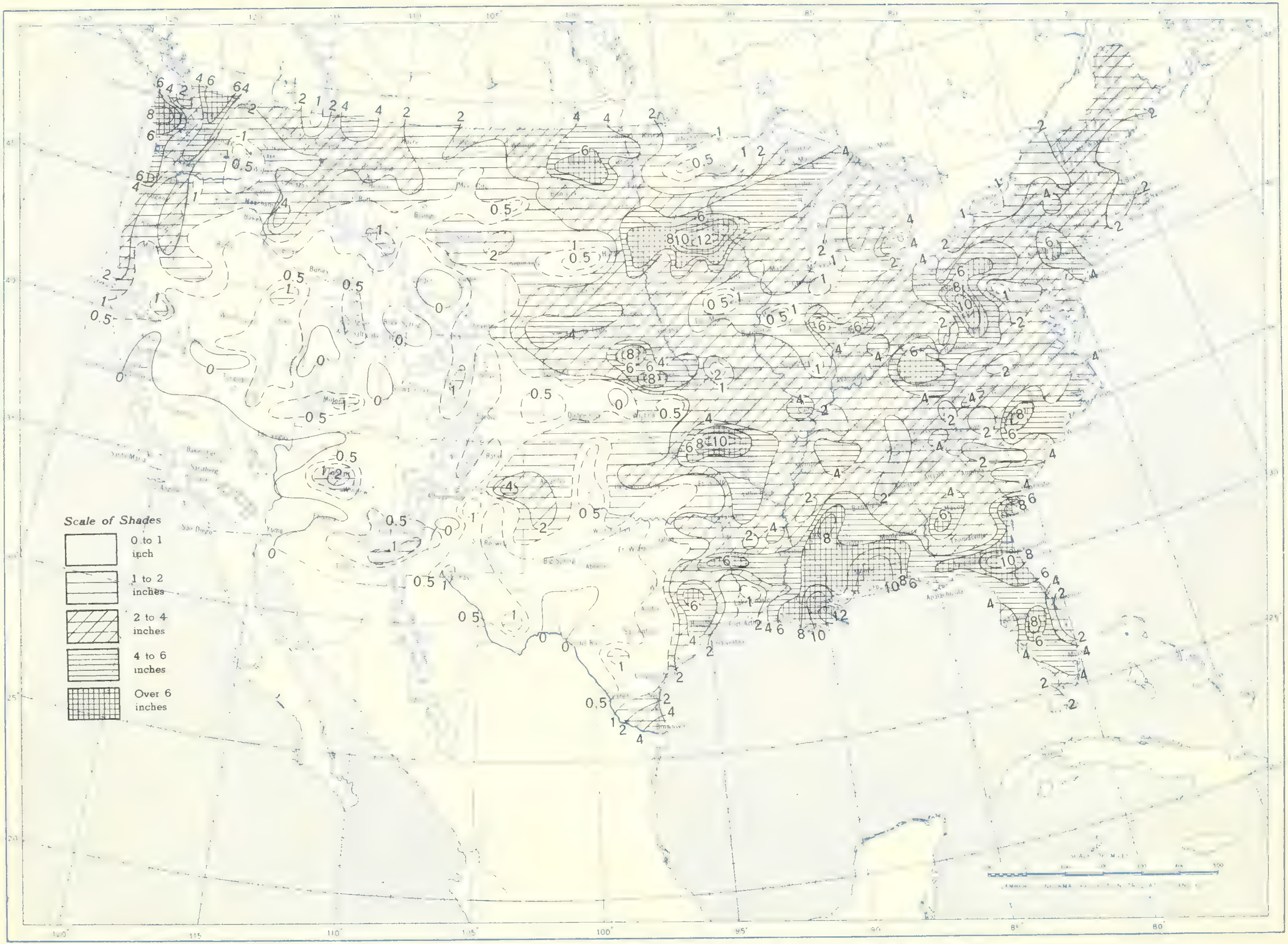


B. Departure of Average Temperature from Normal (°F.), June 1956.



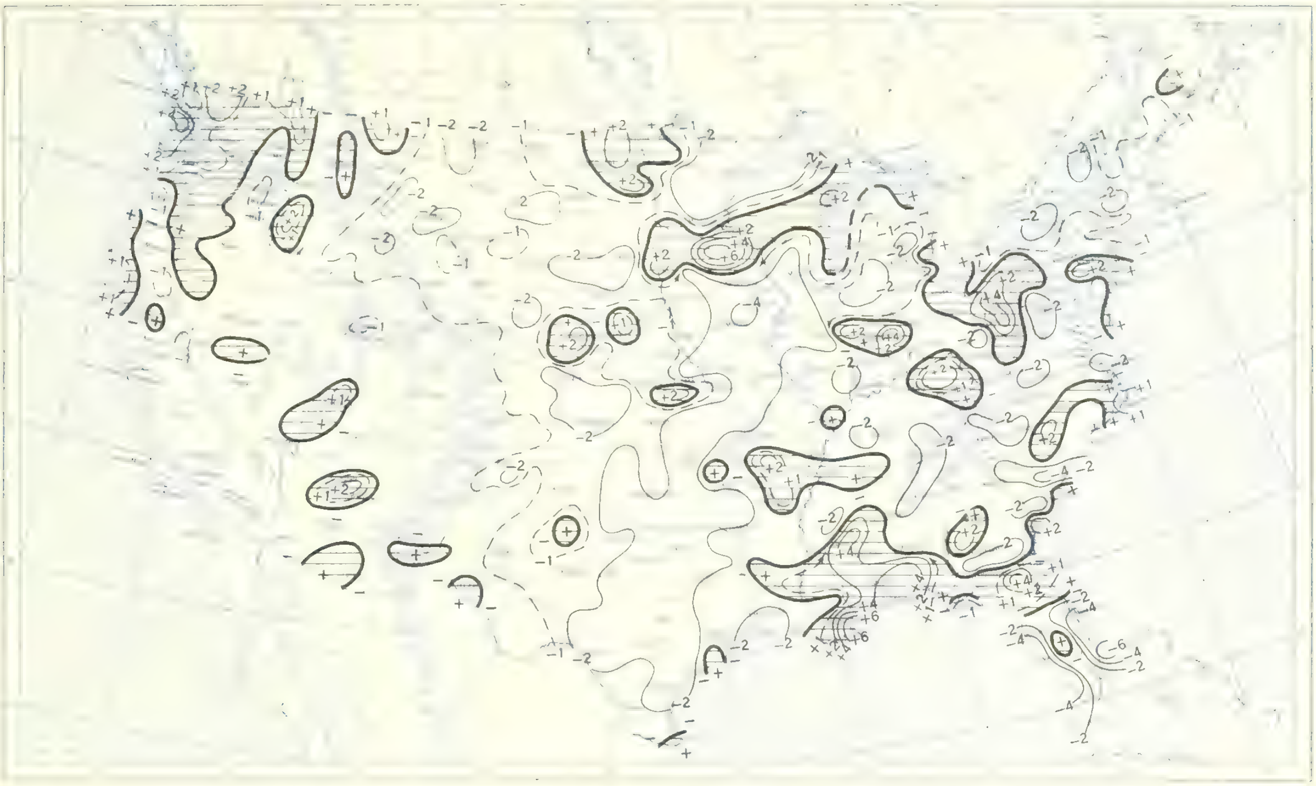
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), June 1956.

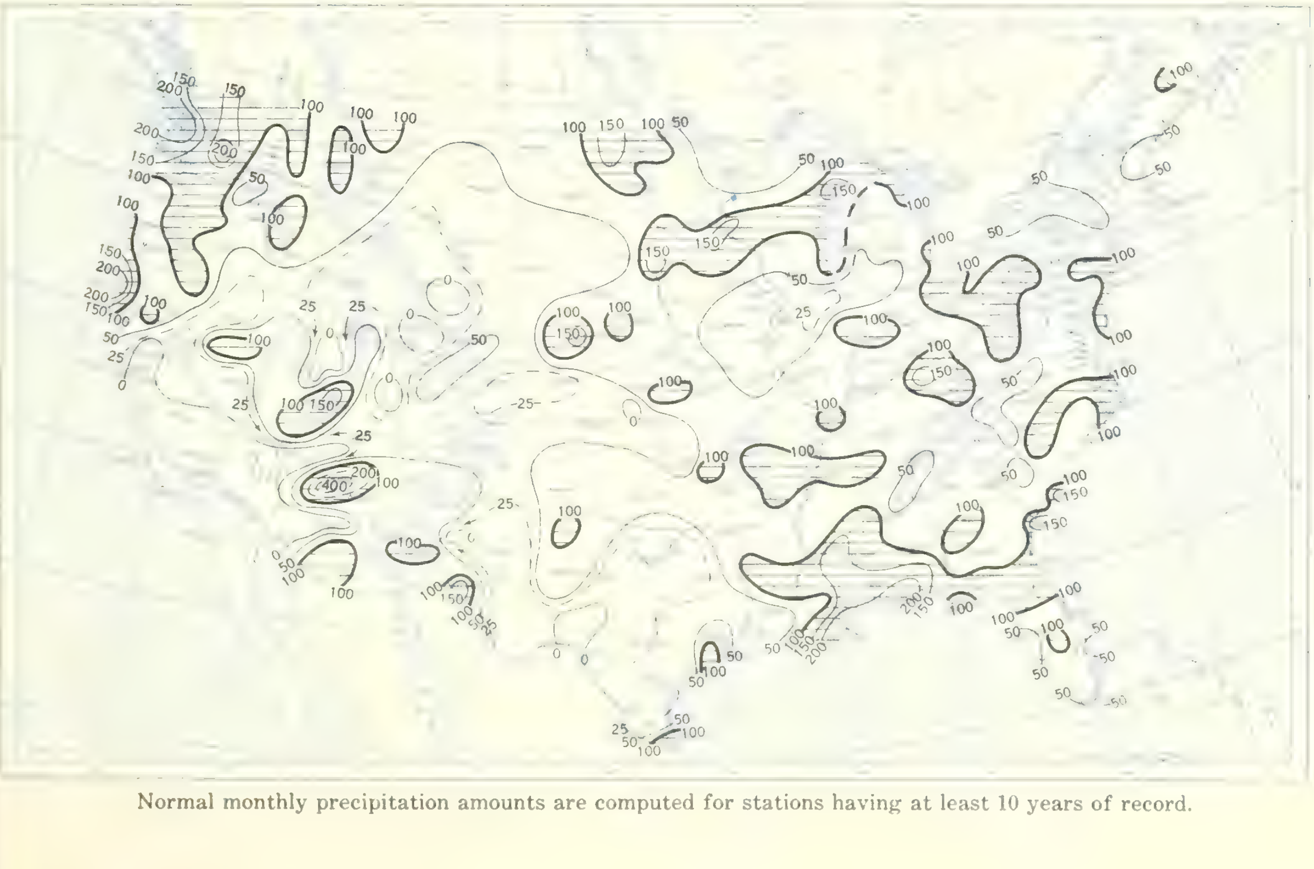


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), June 1956.

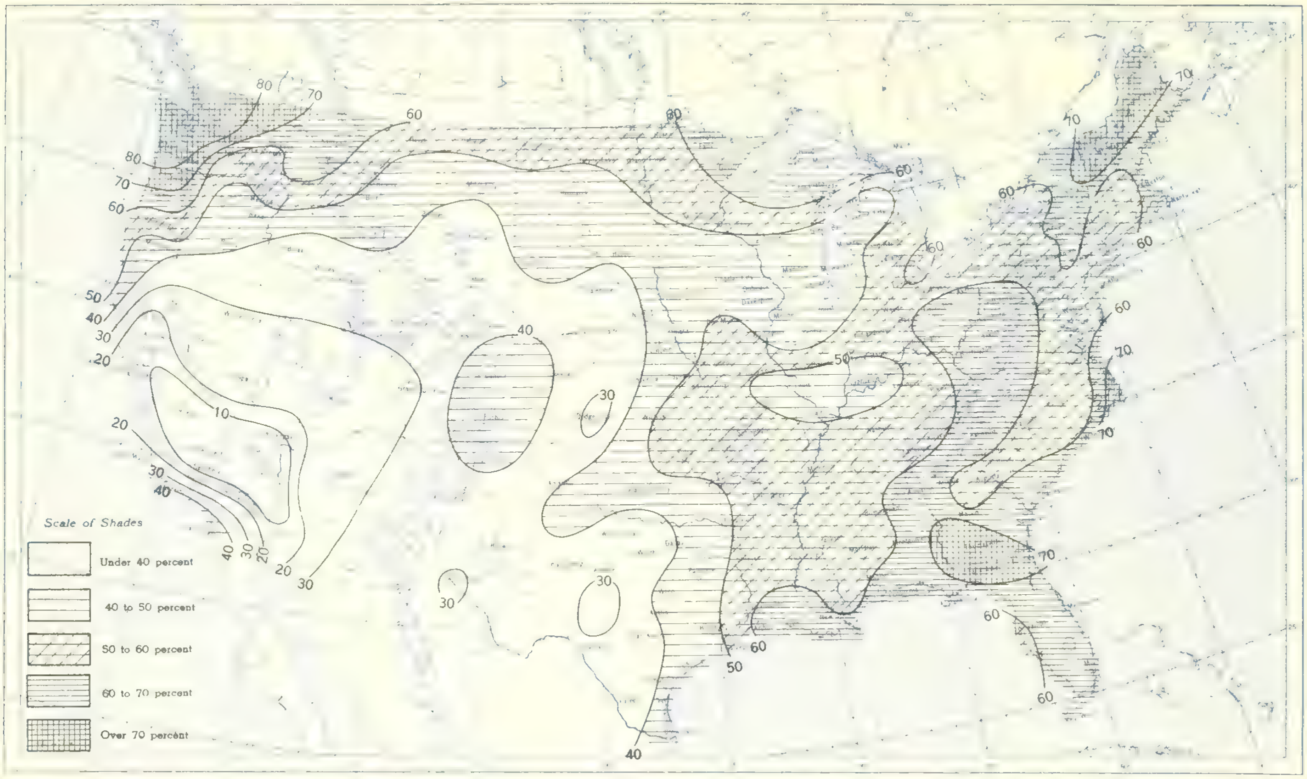


B. Percentage of Normal Precipitation, June 1956.

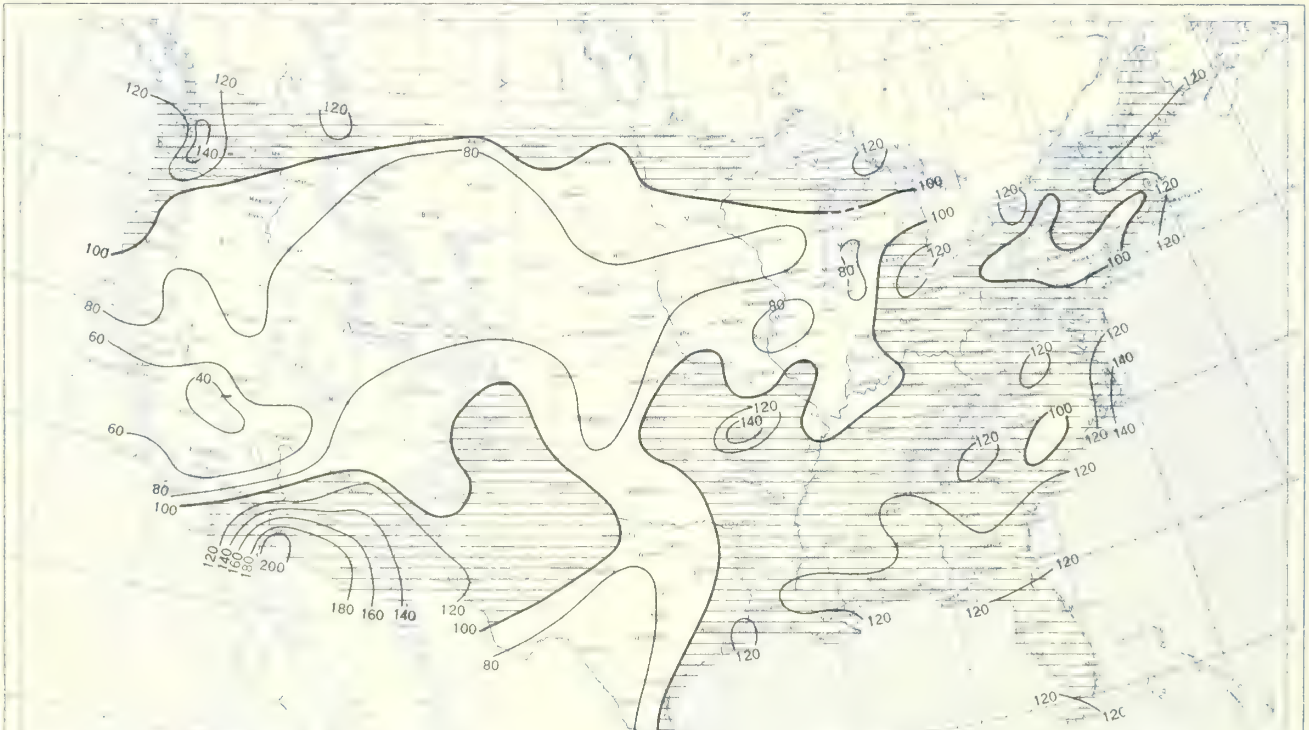


Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, June 1956.

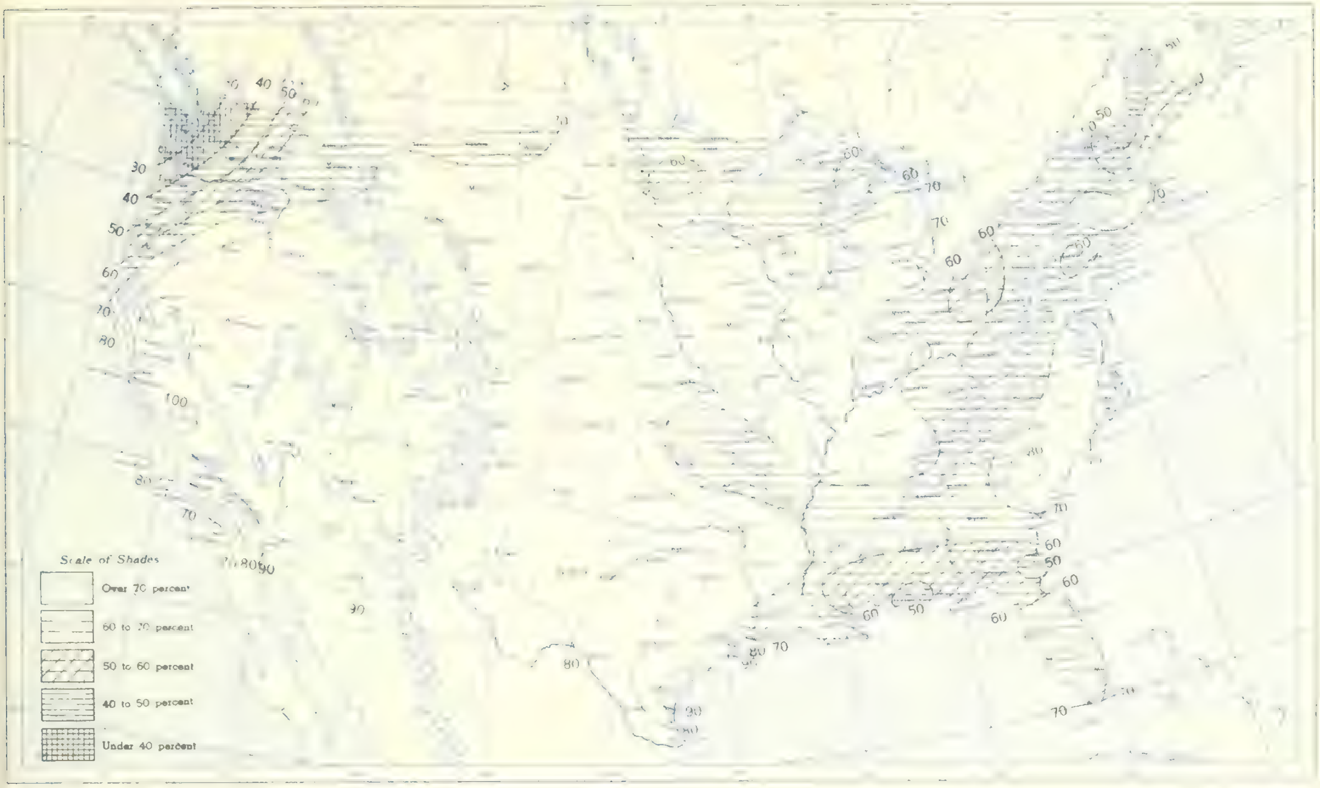


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, June 1956.

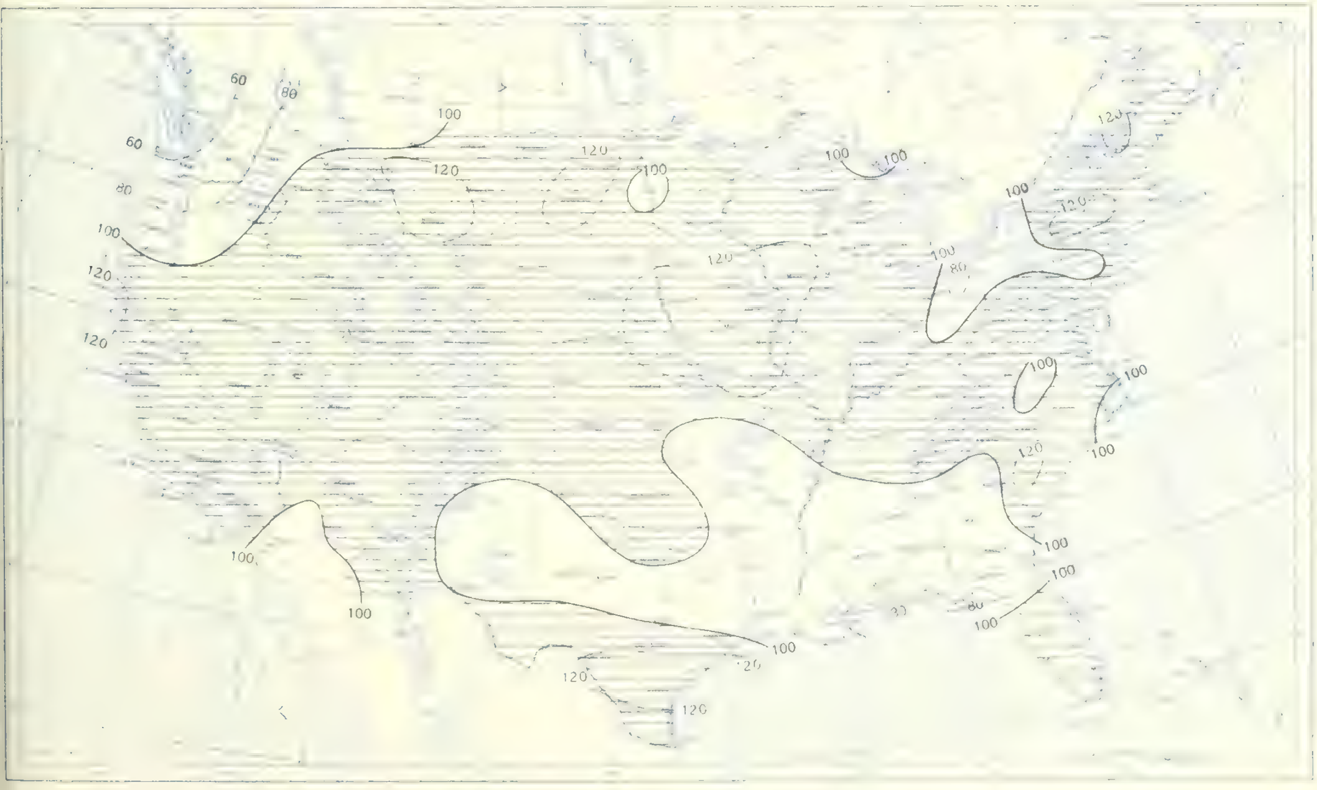


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, June 1956.



B. Percentage of Normal Sunshine, June 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, June 1956. Inset: Percentage of Mean Daily Solar Radiation, June 1956. (Mean based on period 1951-55.)

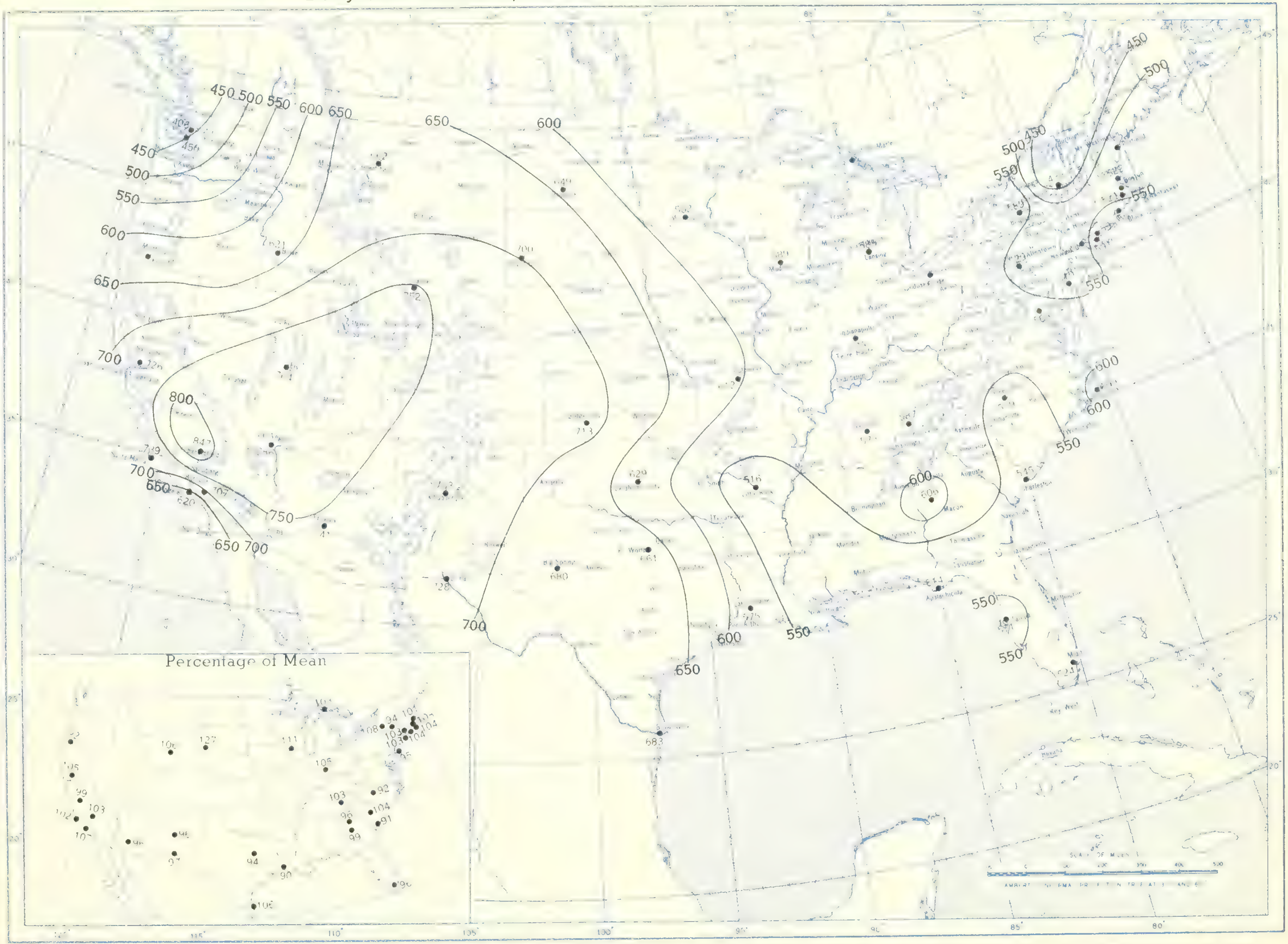
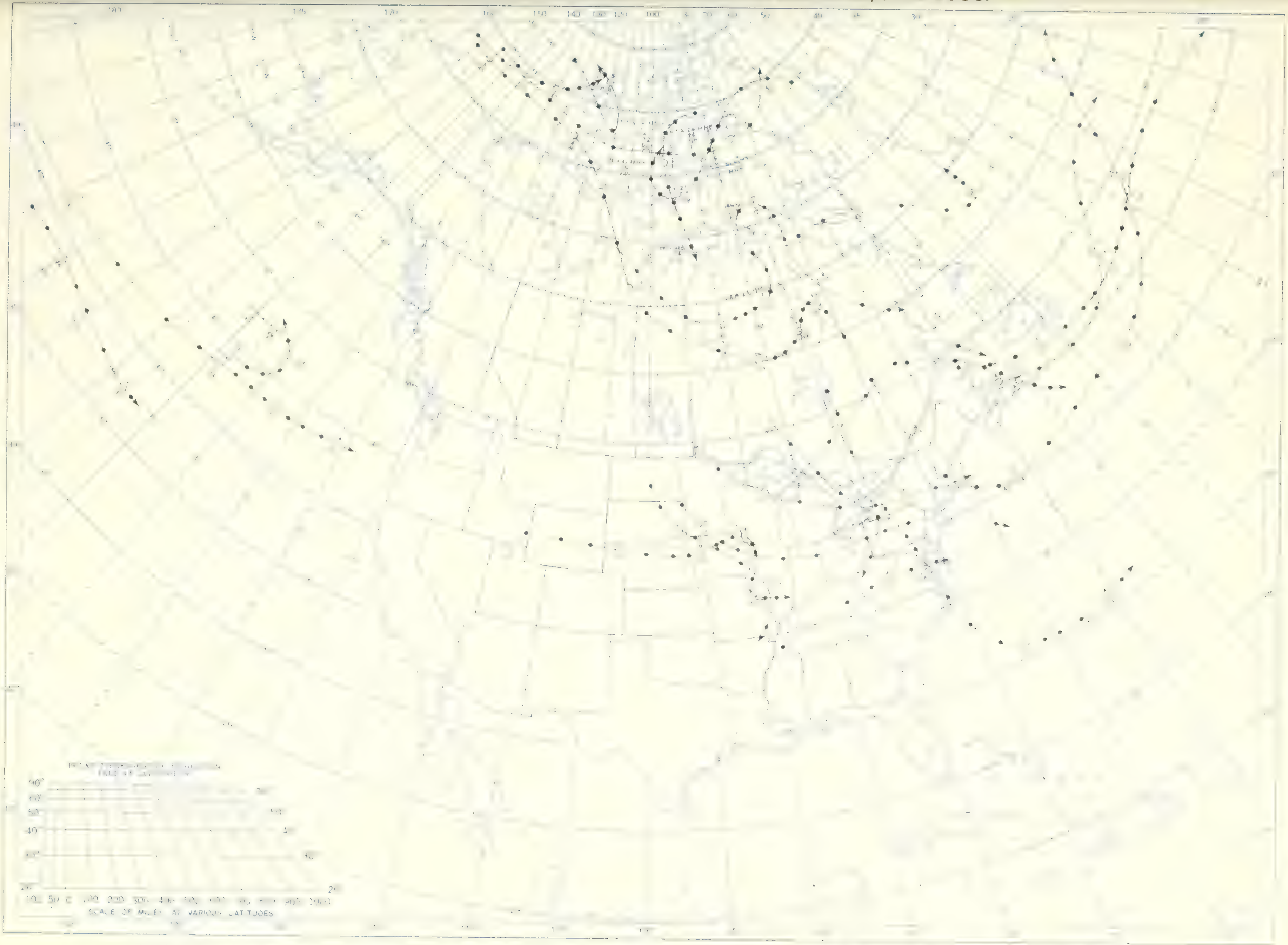


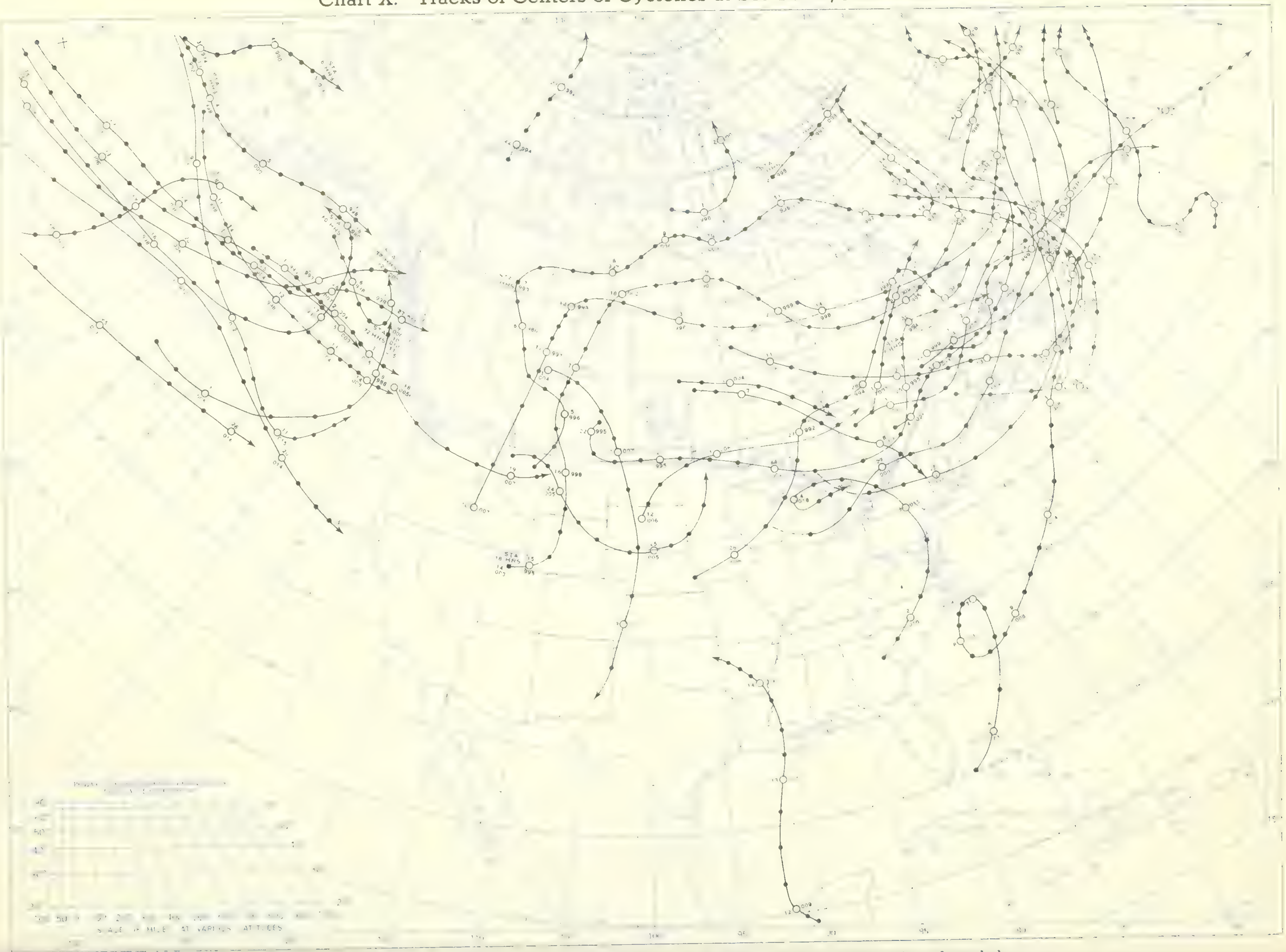
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$). Basic data for isolines are shown on chart. Further estimates are obtained from supplementary

Chart IX. Tracks of Centers of Anticyclones at Sea Level, June 1956.



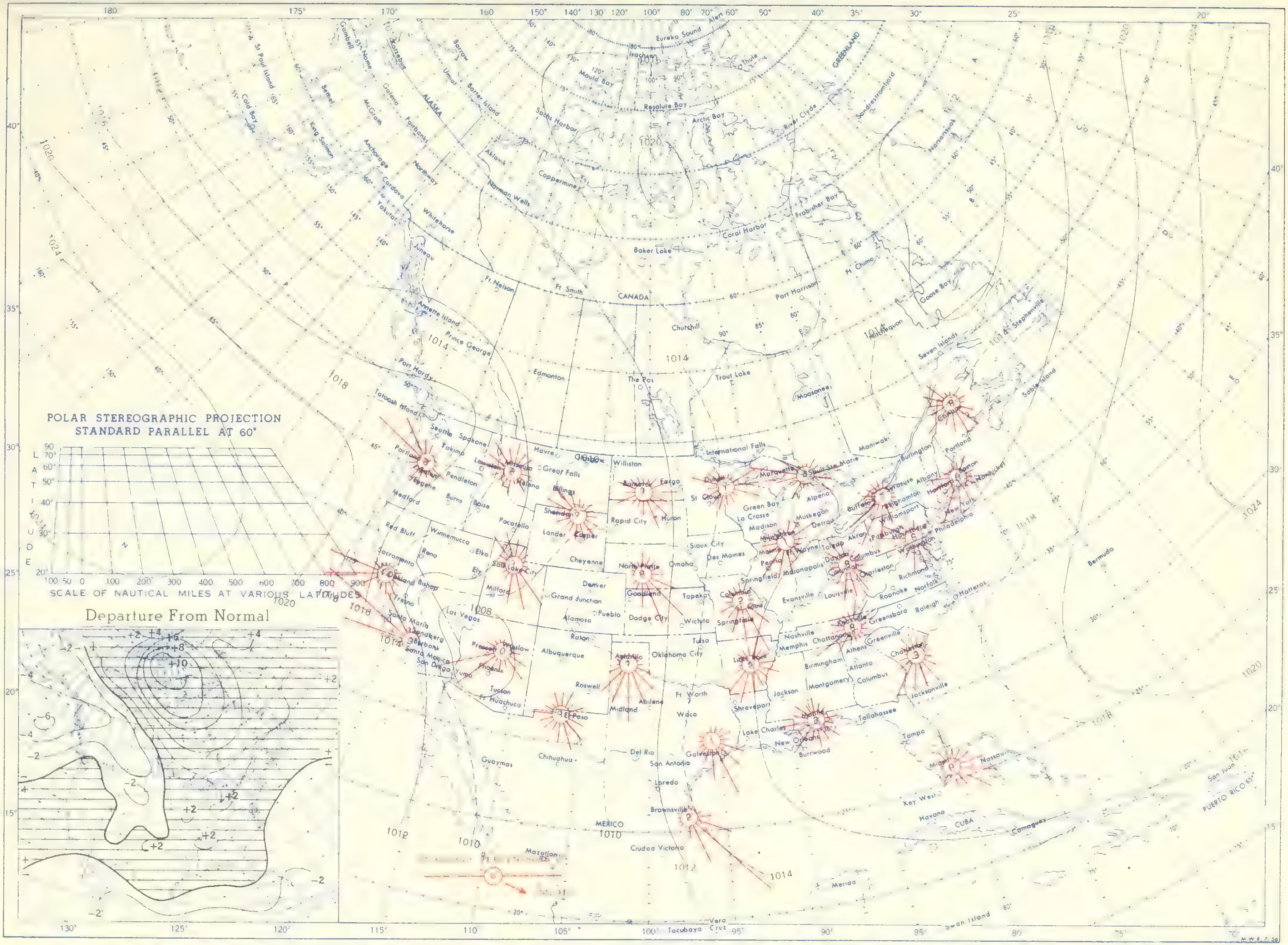
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, June 1956.



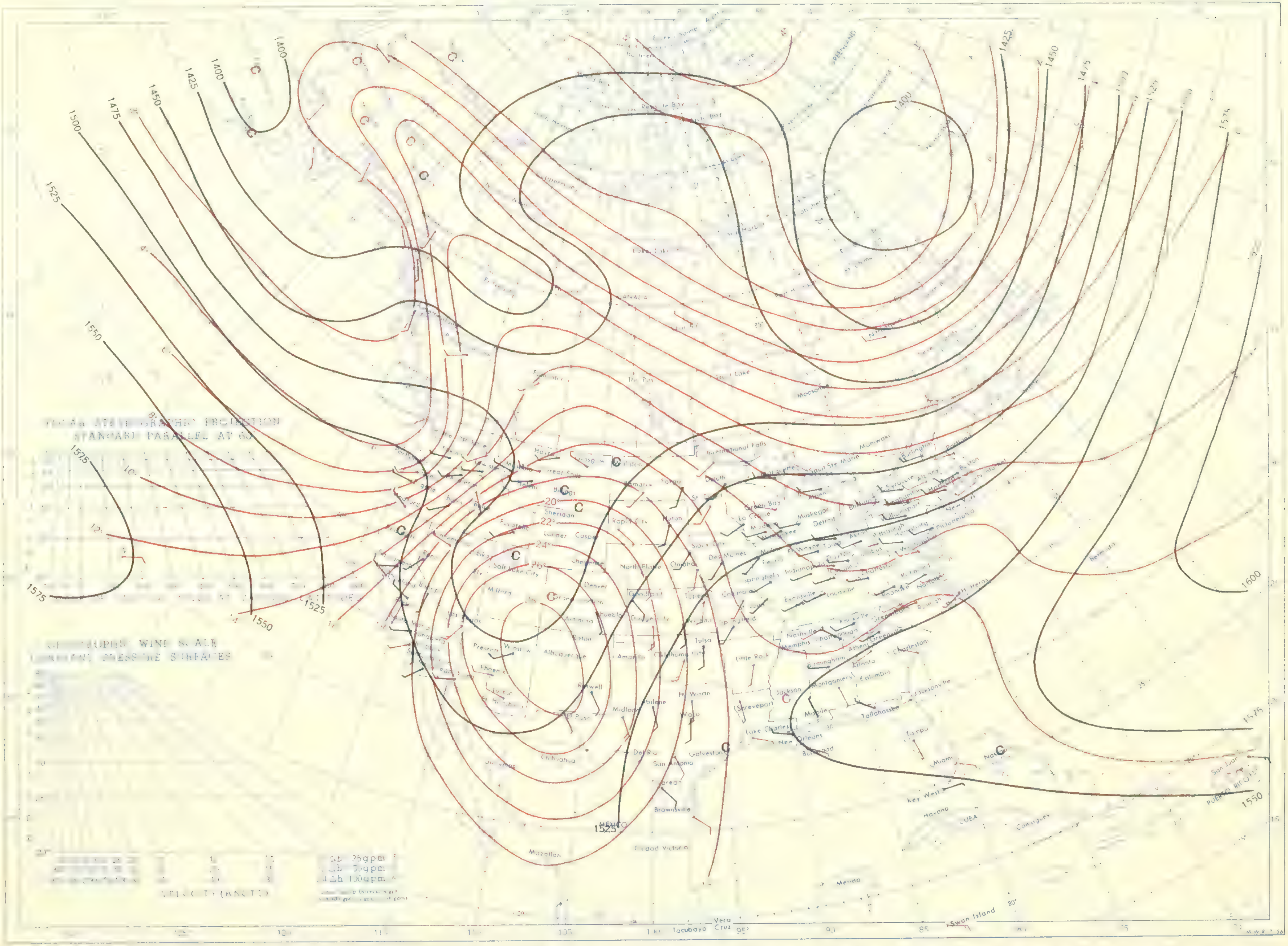
E. S. T. See Chart IX for explanation of symbols.

Average Pressure (mb.) from Normal, June 1956.



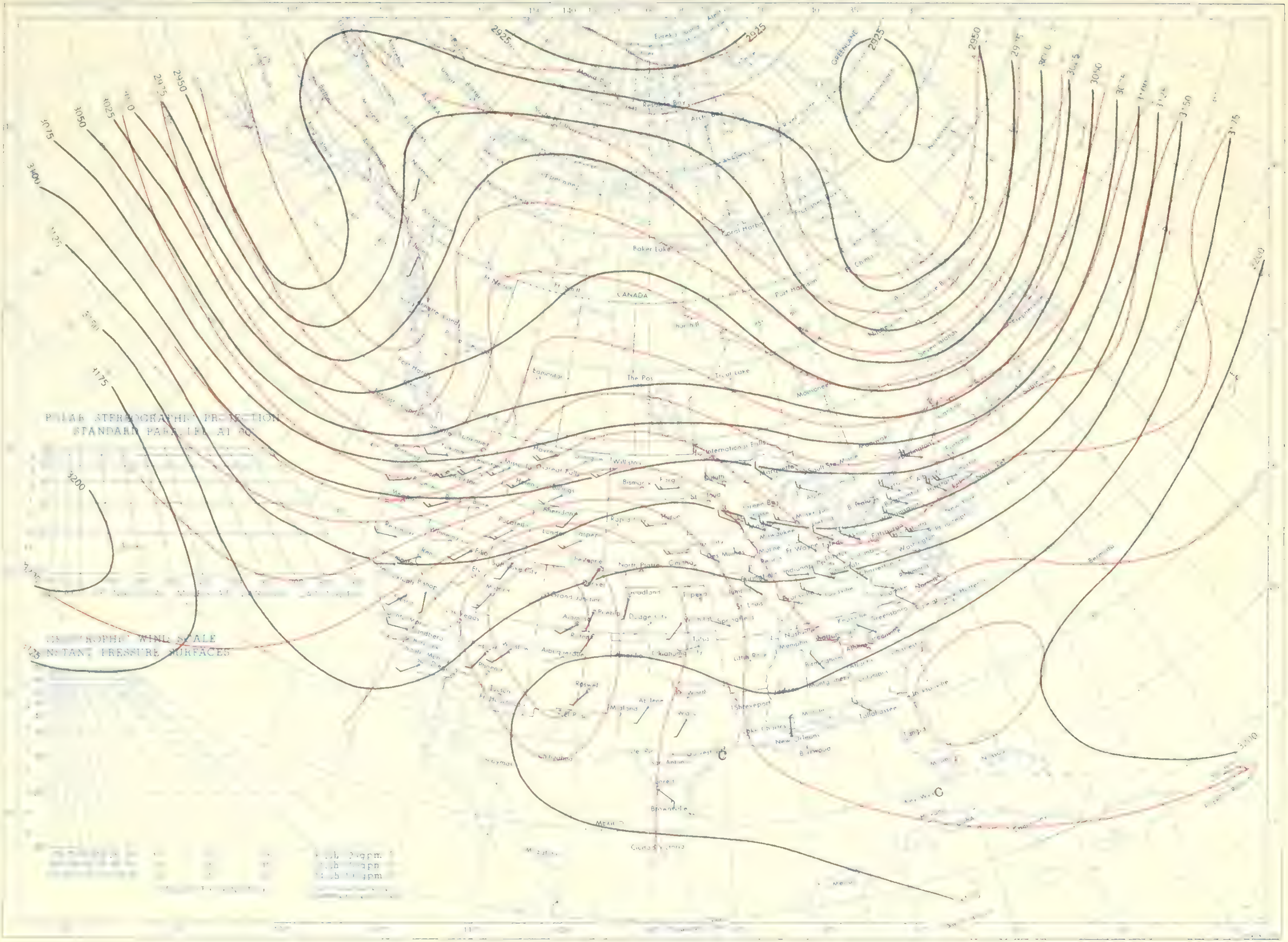
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 0300 GMT, June 1956. Average Height and Temperature, and Resultant Winds.



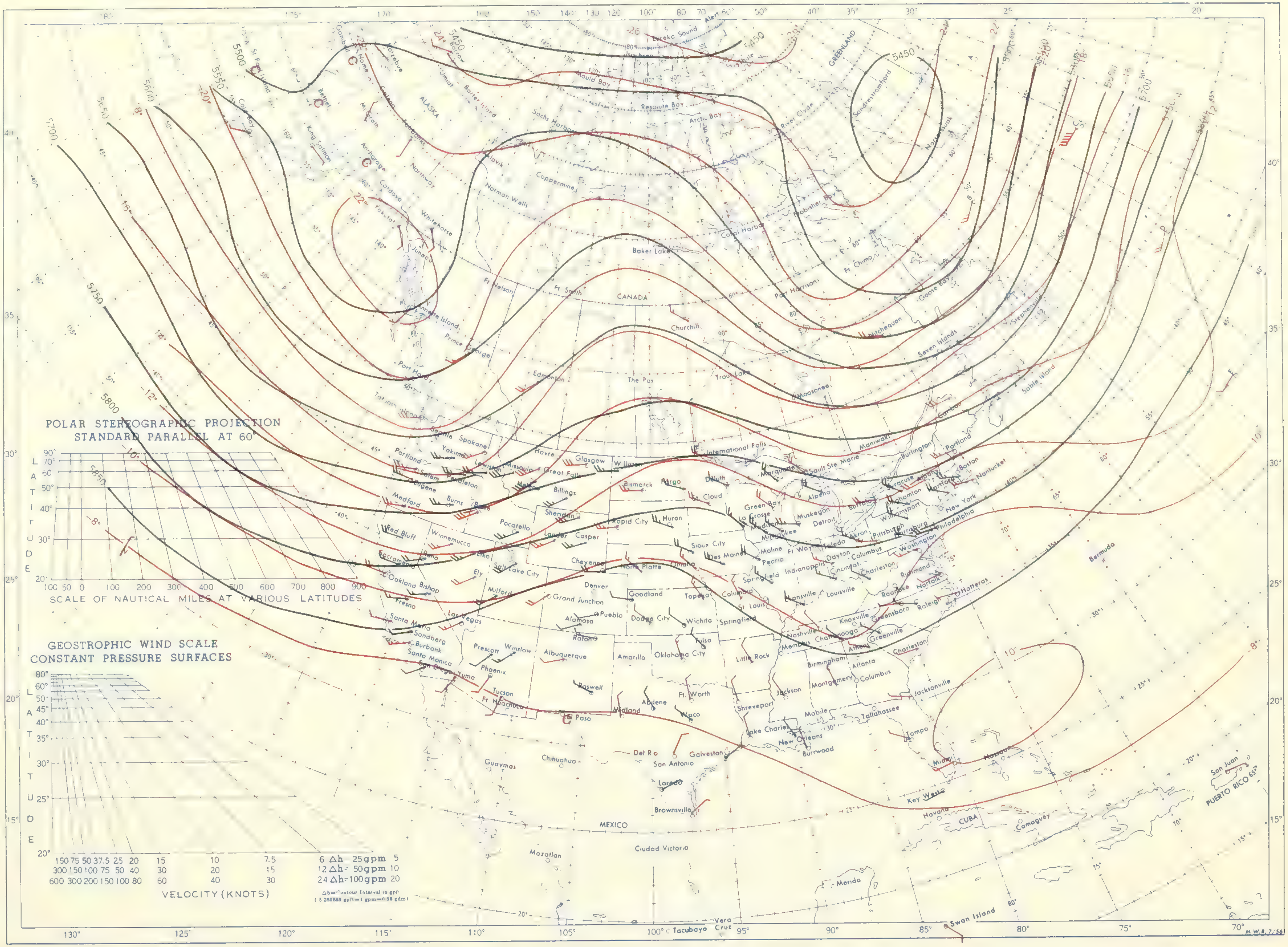
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. Winds shown in red are based on rawins taken at the indicated pressure surface and time. Those in black are based

Chart XIII. 700-mb. Surface, 0300 GMT, June 1956. Average Height and Temperature, and Resultant Winds.



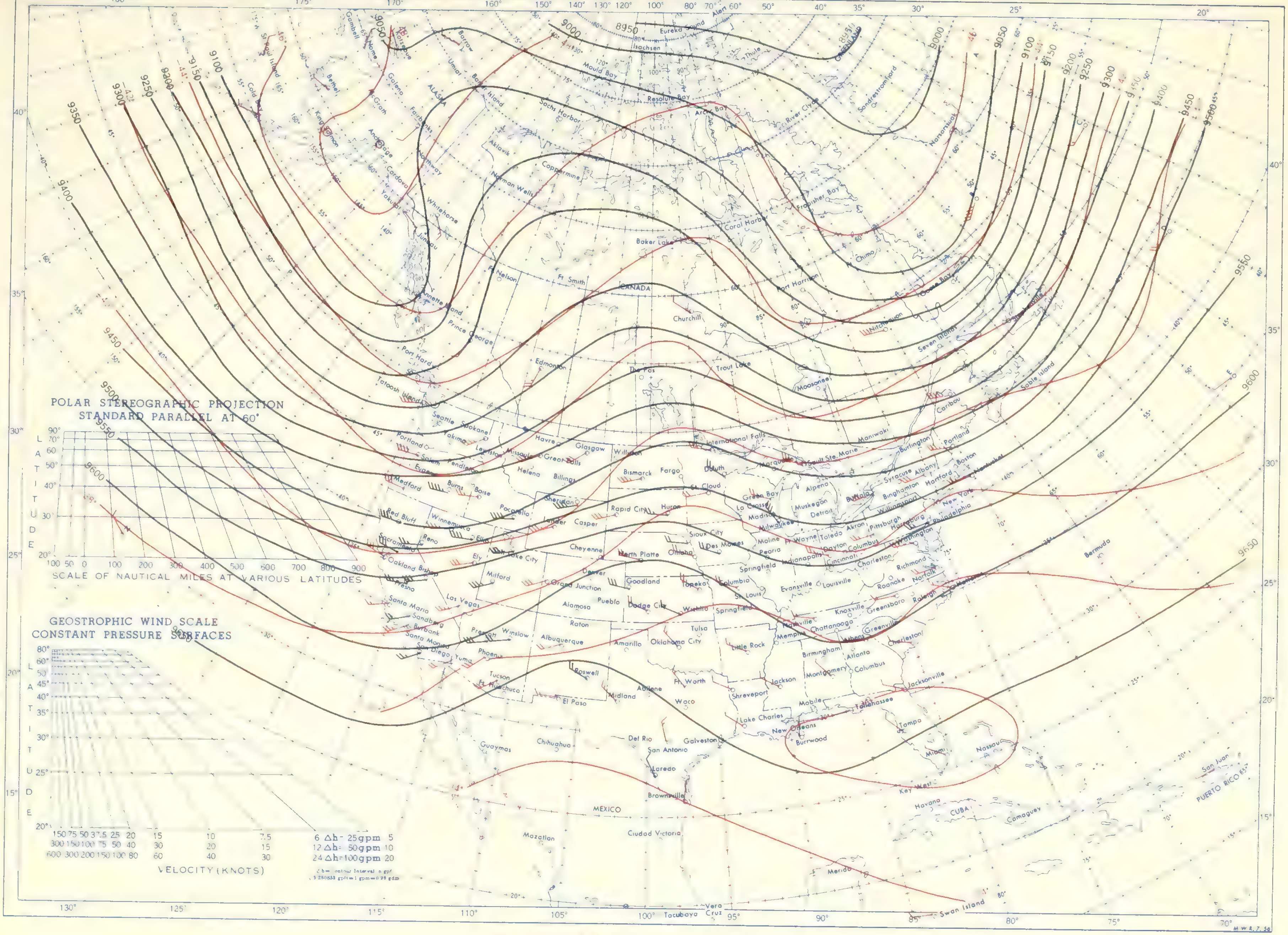
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 0300 GMT, June 1956. Average Height and Temperature, and Resultant Winds.


POLAR STEREOGRAPHIC PROJECTION
STANDARD PARALLEL AT 60°
SCALE OF NAUTICAL MILES AT VARIOUS LATITUDES
100 50 0 100 200 300 400 500 600 700 800 900
GEOSTROPHIC WIND SCALE
CONSTANT PRESSURE SURFACES
LATITUDE
150 75 50 37.5 25 20 15 10 7.5 6 Δh 25gpm 5
300 150 100 75 50 40 30 20 15 12 Δh= 50gpm 10
600 300 200 150 100 80 60 40 30 24 Δh=100gpm 20
VELOCITY (KNOTS)
Δh=Contour Interval in gpft
(3.280833 gpft=1 gpm=0.98 gdm)
5450
5500
5550
5600
5650
5700
5750
5800
5850
GREENLAND
ALASKA
CANADA
MEXICO
CUBA
PUERTO RICO
Bermuda
M.W.B. 7/56

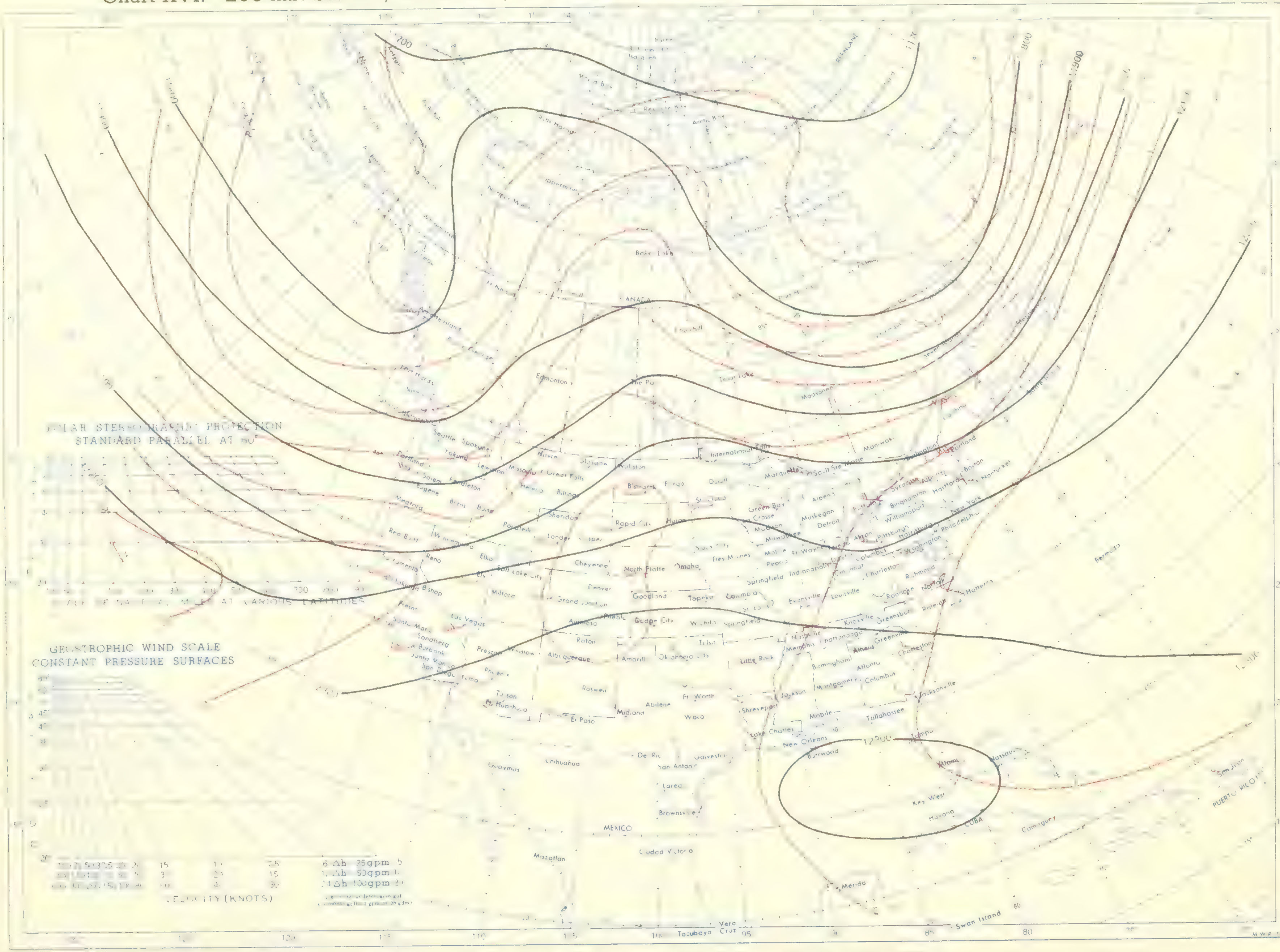
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 0300 GMT, June 1956. Average Height and Temperature, and Resultant Winds.



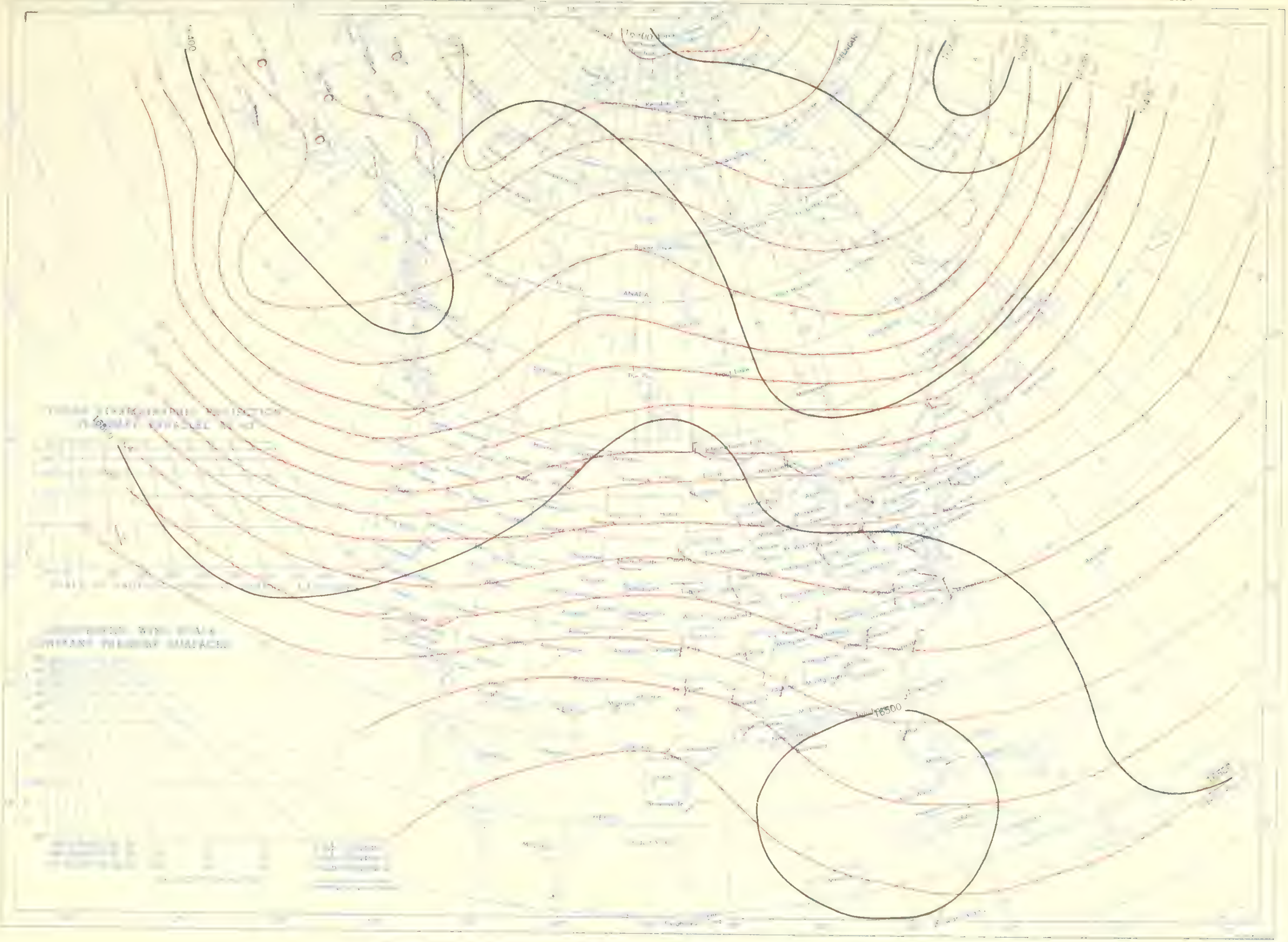
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 0300 GMT, June 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

Chart XVII. 100-mb. Surface, 0300 GMT, June 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

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JULY 1956

Volume 7 No. 7

ASHEVILLE: 1956

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CHARTS I-XV11

Corrected Charts 1X and X, the anticyclone and cyclone tracks, for the months October 1955 through February 1956, are included in this issue following the current charts.

NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 7

JULY 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

In northern areas east of the Rockies the weather was unusually cool, cloudy, and rainy and numerous severe storms, particularly of wind and hail, took a toll of crops and property amounting to millions of dollars. The subnormal temperatures with abundant moisture, however, furnished the basis for good to excellent crop prospects although temperatures were slightly too cool for optimum growth in some extreme northern areas and frequent rains delayed grain harvesting and caused some losses locally.

In contrast, intense heat and drought persisted in the lower Great Plains and typical July weather prevailed in the Southeast. Drought was particularly severe in central and southern Texas where hopes for feed crops had almost completely faded by the end of the month.

In the Far West temperatures averaged out near normal in most sections although the first half of the month was abnormally cool while the second half was on the warm side. Precipitation was less than half the long-term averages in parts of Washington and Oregon and the central Great Basin, while totals in northern Idaho and adjacent areas and northwestern Arizona and adjacent areas were twice the long-term averages. Numerous flash floods occurred, a few of which caused heavy damage.

TEMPERATURE.--Temperatures for the month averaged unusually low from Nebraska and the Dakotas eastward, and well above in the lower Great Plains. Monthly averages showed no unusual departures from normal elsewhere although they were above normal along the lower Pacific Coast and in the Columbia River Valley, and well below in the Lower Great Basin.

Below-normal temperatures were unusually persistent in Canadian Border regions of the eastern half of the country. Much of the time in this region maximum temperatures ranged in the 70's and minima in the 50's. Sault Ste. Marie, Mich., had a high for the month of only 78°, Deerfield, S. Dak., recorded 26° on the 9th, Champion Van Riper Park, Mich., 32° on the 17th, and light frost was observed in the vicinity of Muskegon, Mich., on the 30th. Green Bay, Wis., reported its lowest average temperature for July on record, 65.0°, and its lowest July maximum temperature on record, 83°. At Hartford, Conn., 76° was the lowest maximum temperature ever recorded there in July and the average temperature for the month, 69.4° was the lowest there since 1891. The temperature of the water in Lake Ontario at Buffalo, N. Y., averaged 66°, the lowest in 29 years of record.

In contrast to the abnormally cool weather in northern areas east of the Rockies, the Deep South experienced unusually persistent July heat with maxima exceeding 90° virtually every day in the month but without any unusual extremes. For the second time of record maxima of 90° or above were recorded at Shreveport, La., every day of the month. The heat was most severe in the lower Great Plains where maxima frequently reached or exceeded 100°, Wichita Falls, Tex., reporting 23 such days. Extreme temperatures in this region, although not record breaking, reached 112° at Wills Point, Tex., on the 9th and 106° at Lincoln, Kans., on the 15th and Fremont, Nebr., on the 26th.

In the Far West Burns, Ore., recorded a low of 38° with light frost on the 3d and Fresno, Calif., reported a record low of 51° for July 2. Hottest weather in the Far West occurred during the 8th to 12th, and 16th to 26th. On the 19th, Portland, Oreg., recorded its second highest July temperature on record, 106°.

PRECIPITATION.--Monthly totals generally exceeded 2 inches east of a line joining Mobile, Ala., and Williston, N. Dak., with heaviest totals of 8 inches or more occurring in extreme southeastern Mississippi, northern Florida and southern portions of Alabama and Georgia. Whatley, Ala., reported the largest total in the Country, 17.38 inches. Although totals were generally less, rains were more frequent in northern portions of this area, occurring on more than 20 days at many stations. It was the cloudiest July on record at Milwaukee, Wis., and Buffalo, N. Y., had an unusual record of not one clear day during the month. Sault Ste. Marie, Mich., had its wettest July, with rainfall totaling 6.04 inches.

An extraordinary cloudburst occurred at Unionville, Md., on July 4 when 1.23 inches of rain fell in an estimated period of 1 minute (3:23 pm to 3:24 pm EST), which, if not proved unreliable, will set a new world record for rainfall intensity.

The month's total precipitation in Texas, except in some northwestern sections, western Louisiana, and southeastern New Mexico totaled less than one-half inch which was less than 50 percent of the long-term averages. The basis for the Texas drought was not only the scanty rainfall and persistent high heat in July but also the accumulated deficiency of rain for the first 7 months of 1956, which, in many sections was the driest such period since 1934 and in many sections was also less than 50 percent of normal. With the intense heat and dry powdery soil, the little rain which fell soon evaporated and benefits, if any, were of short duration. Hopes for cotton and corn had faded over a wide area by the end of the month, particularly in central and southern areas where farmers were putting acreage in the soil bank reserve to full extent. Rice was good but irrigation water was becoming short in some areas.

Although rains were heavier and more frequent in Oklahoma and Kansas, drought was only slightly less severe as benefits of rains were limited by high temperatures and short subsoil moisture resulting from large accumulated deficiencies since January 1. Crops, although benefited by rains early in the month, were declining rapidly by the end. In Nebraska corn was fair to good until the last week when hot, dry winds caused severe damage in many sections, although the crop was still fairly good in the main producing area of the State.

STORMS.--July was noted for many destructive storms, particularly in the north-central Interior.

The worst outbreak of storms occurred on the 18th as a low pressure trough moved across the North Central States. On that date estimated damage, mostly from hail, in Iowa, Nebraska, Minnesota, Wisconsin, and Missouri totaled several million dollars. Severe thunderstorms on numerous dates in Iowa, with hail the most damaging agent, caused damage of several hundred thousand dollars on the 1st and over a million on the 7th, 11th, 15th, and 18th.

Storms on the 5th and 6th caused a few hundred thousand dollars damage in Iowa, a few million in Minnesota, and over a million in South Dakota where squall line winds set a new July record of 73 m.p.h. for the fastest mile at Huron. On the 30th a hailstorm caused nearly a million dollars damage in Montana. Thunderstorms and tornadoes were responsible for damage estimated at more than a million dollars in Michigan on the 1st and several hundred thousand in Wisconsin on the same date, and wind and hail caused over a million dollars damage in Michigan on the 16th. Tornadoes caused several hundred thousand dollars damage and a few injuries in eastern Kentucky on the 13th. One of the worst flash floods in the Far West caused over a million dollars damage at Mitchell, Oreg., on the 13th. On the 20th two flash floods near Reno, Nev., were responsible for the loss of 4 lives and a few hundred dollars damage. In California the cost of suppressing about 600 forest fires (mostly lightning caused) from the 17th through the 29th was about one-half million dollars.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

JULY 195

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	3 Stations	100	5+	Calera 2SW	52	11	Whatley	17.38	Waterloo	0.20
Arizona	6 Stations	116	8+	Fort Valley	30	3+	Crown King	8.45	5 Stations	T
Arkansas	Paris	105	15	Gravette	49	10	Hot Springs 1NNE	8.64	Brinkley	.30
California	2 Stations	121	9+	White Mountain 2	22	2	White Mountain 1	3.30	262 Stations	.00
Colorado	Sedgwick	105	26	Platoro Dam	25	4+	Fort Morgan	6.70	2 Stations	.19
Connecticut	Bridgeport WB AP	95	2	4 Stations	43	30+	Whitney Lake	7.29	Stafford Springs	3.01
Delaware	Georgetown 5SW	96	2	Georgetown 5SW	51	31	Lewes	10.35	Middletown 2S	3.84
Florida	Eustis 2S	100	15+	Panama City 2	60	22	Blountstown 2SE	16.09	Marathon Vaca Key	.49
Georgia	Louisville	104	27	Blairsville Exp. Sta.	48	12	Talbotton	13.89	Mill Haven 8E	1.56
Idaho	Swan Falls PH	110	9	Gray 6NNW	23	1	Wallace Woodland Pk	2.60	6 Stations	.00
Illinois	Quincy	108	27	Kankakee 3SW	45	30	Monmouth	10.41	Joliet Brandon Rd.	1.78
Indiana	3 Stations	102	2+	Wheatfield	45	30	Frankfort Disposal Pl.	7.16	Terre Haute 8S	1.11
Iowa	2 Stations	107	27	Atlantic 1NE	45	22	Blockton 2S	12.11	Lake View	1.32
Kansas	Lincoln	111	15	Mound City	49	10	Medicine Lodge	7.79	Norton	.60
Kentucky	Bardstown S J Prep. Sch.	104	8	Clermont 1SSE	48	11	Richmond	11.20	Hickman 1E	2.23
Louisiana	Many 4NNE	103	18	Leesville	60	25	Bogalusa 2NE	10.11	Logansport	.20
Maine	West Buxton 2NNW	91	14	2 Stations	38	5+	E. Sangerville 5SE	5.69	Old Town CAA AP	1.83
Maryland	2 Stations	100	2	New Germany	42	30	Westminster	12.73	Vienna	2.58
Massachusetts	do	93	1+	2 Stations	37	18+	Middleboro	6.80	Winehendon	1.67
Michigan	Charlotte	98	1	Champion Van Riper Park	32	17+	Dunbar Forest Exp. Sta.	8.05	Detroit WB AP	1.20
Minnesota	2 Stations	94	26+	Big Falls Ranger Sta.	38	29	Albert Lea	7.02	Virginia OIMC Lab.	1.26
Mississippi	9 Stations	100	4+	2 Stations	54	11	Leakesville	12.78	Thyatira	.00
Missouri	3 Stations	106	1+	do	48	10	Kirksville Radio KIRX	12.01	Caruthersville	.56
Montana	Miles City	110	24	Dell 19SW	27	1	Ridgway 1S	5.21	2 Stations	.16
Nebraska	Fremont	111	26	Mullen 21NW	42	10	Hallam 3W	7.92	Oconto 6SW	.32
Nevada	North Las Vegas DOX	113	8+	2 Stations	28	3	Las Vegas WB AP	1.64	4 Stations	.00
New Hampshire	Franklin Falls Dam	92	1	do	35	19+	Mount Washington	10.32	Peterboro 2S	2.1
New Jersey	Runyon	97	2	Layton 3NW	40	30	Newton	10.67	Princeton Water Works	3.20
New Mexico	Hobbs	107	17	2 Stations	29	4+	Cloudcroft 1	6.01	Ochoa	.00
New York	Poughkeepsie	97	4	3 Stations	36	17+	Binghamton WB AP	7.40	Theresa	.8
North Carolina	2 Stations	103	2+	Banner Elk	40	11	Rocky Mount	13.07	Whiteville 5N	.8
North Dakota	Medora 3NNE	101	25	Belcourt Indian Res.	38	27	Washburn	8.35	Grand Forks CAA AP	1.0
Ohio	3 Stations	99	27	Caldwell 6NW	42	31	Westville Water Pl.	9.07	Canton Repository	1.0
Oklahoma	2 Stations	110	8+	Jay	50	10	Buffalo	7.45	Madill	.1
Oregon	The Dalles	112	20	2 Stations	26	1	Baker KBKR	3.31	18 Stations	.0
Pennsylvania	Phoenixville 1E	99	2	Phillipsburg CAA AP	36	18	Bear Gap	12.48	Scranton WB AP	3.1
Rhode Island	Providence WB AP	90	2	Kingston	47	31	Kingston	6.96	Woonsocket	4.0
South Carolina	Union 7SW	104	29	Walhalla	55	12	Walterboro	10.74	Hilton Head	.8
South Dakota	3 Stations	105	11+	Deerfield 5NW	26	9+	Castlewood	6.75	Orman Dam	.8
Tennessee	2 Stations	101	27+	Mountain City 2	46	11+	Crossville CAA AP	11.93	Dyersburg CAA AP	.2
Texas	Wills Point	112	9	2 Stations	55	2+	Booker	8.40	Numerous Stations	.0
Utah	St. George PH	109	21	do	28	3+	Monticello	4.41	Geneva Steel	.0
Vermont	Bellows Falls	92	2	do	35	17+	Union Village dam	6.47	Newport	1.7
Virginia	Gordonsville CAA AP	102	2	Burkes Garden	44	11	Warrenton 5NE	16.27	Buckingham	2.2
Washington	3 Stations	108	19+	Rainier Paradise RS	31	4	Chesaw	2.85	7 Stations	.0
West Virginia	Kearneysville 1 NW	98	2	2 Stations	40	12+	Birch River 6SSW	13.70	Matoaka	2.3
Wisconsin	2 Stations	94	1+	Long Lake Dam	33	17	Baraboo	9.51	Superior 7SE	1.4
Wyoming	5 Stations	103	23+	3 Stations	25	1	Wheatland 1N	4.09	2 Stations	.0
Puerto Rico	Dos Bocas	96	1	Guineo Reservoir	58	19	Puerto Real	9.22	do	.0

+ And also on a later date or dates.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observatio

CLIMATOLOGICAL DATA

Table 2

JULY 1956

State and station	Elevation (ground)	Pressure		Temperature													Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station ∅	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F.	°F	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h		M. p. h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	993.1	1017.8	91	69	80.2	0.6	96	4+	58	11	22	0	69	73	7.97	2.86	1.76	14	15	0.0	0	6.7	SW	40	NE	4	2	20	9	6.3	64
Mobile	211	1010.4	1018.2	89	71	80.3	-.4	95	18	67	22	16	0	73	83	10.13	1.16	3.53	15	21	.0	0	8.3	SW	--	---	--	2	13	16	7.0	--
Montgomery	198	1010.5	1017.7	92	71	81.1	-.1	96	4+	64	11+	23	0	71	77	8.92	3.16	2.67	15	10	.0	0	6.3	SW	44	W	21	4	17	10	6.1	63
ARIZONA																																
Flagstaff	6993	------	------	79	49	64.3	-.9	90	8	37	4	1	0	-	--	1.19	-1.30	.52	8	16	.0	0	----	---	--	-	--	10	10	11	5.5	--
Phoenix	1114	972.2	1010.4	100	76	87.9	-2.2	110	8	66	5	29	0	56	37	.92	.22	.61	4	8	.0	0	6.3	W	*35	E	10+	14	11	6	4.2	89
Prescott	5014	849.3	1012.5	89	60	74.4	-1.6	100	9	50	4	13	0	--	--	2.51	-.20	.82	12	17	.0	0	8.8	SSW	38	SW	2	9	13	9	5.1	73
Tucson	2558	925.2	1010.9	98	73	85.4	-.8	108	7+	66	3	28	0	54	41	2.77	.97	1.37	11	16	.0	0	6.6	ESE	35	SW	12+	9	17	5	4.9	80
Winslow	4880	853.0	1010.5	93	61	76.8	-.4	103	9	51	4	25	0	43	37	1.55	.31	.54	8	14	.0	0	9.6	WSW	*43	SE	25	11	6	14	5.5	--
Yuma	199	1004.7	1009.7	107	77	91.9	-2.7	114	11	63	3	31	0	57	36	.20	-.03	.20	1	2	.0	0	9.5	SSE	38	S	17	19	9	3	2.9	89
ARKANSAS																																
Fort Smith	458	998.6	1014.9	96	71	83.4	1.1	103	15	62	10	27	0	68	65	1.93	-.63	1.49	6	5	.0	0	7.2	NE	30	W	19	8	18	5	5.0	74
Little Rock	257	1003.1	1015.8	94	72	82.7	.8	99	26	65	11	26	0	70	69	5.47	2.37	1.78	8	9	.0	0	8.7	SW	40	NW	28	9	14	8	5.3	78
Texarkana	361	------	------	96	73	84.7	1.8	101	8	67	20	31	0	--	--	1.98	1.96	.82	6	6	.0	0	----	---	--	---	--	--	--	--	---	--
CALIFORNIA																																
Bakersfield	489	994.9	1012.5	98	68	83.0	-1.2	109	23	57	2+	30	0	51	36	T	-.01	T	0	0	.0	0	6.9	NW	*23	NW	1	28	2	1	1.0	--
Bishop	4108	874.4	1012.5	96	54	75.2	-.3	102	9+	45	14	31	0	--	--	.05	-.05	.03	3	10	.0	0	---	---	--	---	-	21	9	1	2.3	--
Blue Canyon	5280	841.9	1012.9	77	58	67.9	.1	88	17	46	2	0	0	--	--	T	-.03	T	0	6	.0	0	----	--	--	- -	--	29	1	1	1.2	--
Burbank	699	988.5	1014.7	86	61	73.3	.1	92	22+	56	5+	9	0	57	65	T	.00	T	0	0	.0	0	4.8	S	*14	S	30	20	9	2	2.8	
Eureka (U)	43	1015.6	1018.0	60	52	55.7	-.7	67	18	48	1	0	0	--	--	.06	-.03	.05	2	0	.0	0	6.9	---	20	SW	25	3	11	17	7.2	41
Fresno	331	1000.7	1012.4	96	64	79.7	-2.4	106	23	51	2	27	0	53	43	T	-.01	T	0	0	.0	0	6.7	NW	19	S	12+	27	4	0	1.0	99
Los Angeles (U)	312	------	------	82	62	71.8	-.7	87	22+	58	15	0	0	58	69	.00	.00	.00	0	0	.0	0	5.4	---	17	W	16+	24	5	2	2.8	79
Los Angeles	99	1010.8	1014.8	75	62	68.4	.8	78	23+	58	16	0	0	59	75	T	.00	T	0	0	.0	0	7.7	WSW	%23	W	15+	12	19	0	3.9	--
Mt. Shasta (R)	3544	893.7	1015.2	85	52	68.5	1.3	97	23	44	2+	11	0	-	--	.59	.40	.48	3	7	.0	0	----	---	--	---	--	24	7	0	1.8	--
Oakland	3	1015.2	1015.7	70	55	62.2	-.5	83	22	51	11	0	0	53	77	T	-.01	T	0	1	.0	0	10.0	WNW	*25	WSW	1	11	16	4	4.3	--
Red Bluff	341	1000.0	1012.4	98	68	82.6	-.6	112	18	57	13	27	0	50	35	T	-.02	T	0	1	.0	0	7.7	SSE	29	SE	12	27	3	1	.9	97
Sacramento	17	1011.5	1012.8	91	57	74.3	-.3	103	23+	52	2	19	0	52	53	.00	.00	.00	0	0	.0	0	11.0	SW	36	SW	12	30	0	1	.6	98
Sandberg (R)	4517	864.5	1013.2	84	61	72.5	-1.4	93	22	45	1	6	0	--	--	T	-.02	T	0	0	.0	0	13.5	---	*38	N	6	24	4	3	1.8	--
San Diego	19	1011.5	1014.5	75	64	69.4	.1	79	28	60	4	0	0	60	74	T	-.01	T	0	0	.0	0	7.3	WNW	16	NW	15+	19	9	3	3.6	71
San Francisco (U)	52	------	------	62	52	57.1	-1.8	70	22	50	1+	0	0	--	--	T	-.01	T	0	0	.0	0	10.9	---	28	W	5	6	14	11	5.9	53
San Francisco	8	1015.2	1015.8	71	53	61.7	1.3	83	22	49	3+	0	0	53	80	T	-.01	T	0	1	.0	0	12.5	NW	31	W	5+	17	10	4	3.8	--
Santa Maria	238	1007.5	1016.2	69	53	60.7	-1.5	77	23	47	14	0	0	53	80	.02	-.01	.02	1	1	.0	0	7.2	WNW	*21	WNW	5+	10	18	3	4.3	--
COLORADO																																
Alamosa	7538	776.8	1017.9	82	46	63.8	-.3	87	8	37	4	0	0	--	--	.19	-.68	.05	8	9	.0	0	----	---	--	---	-	13	14	4	4.5	--
Colorado Springs	6173	815.1	1015.0	85	55	70.0	-1.2	94	26	50	2+	7	0	45	48	3.03	.31	.82	12	15	.0	0	10.1	NNW	*42	NW	3	9	18	4	4.7	--
Denver	5292	841.2	1014.1	86	59	72.2	-.6	94	26	54	4+	10	0	45	44	4.17	2.81	1.64	8	10	.0	0	11.4	SSW	44	SE	4	11	14	6	4.5	74
Grand Junction	4849	860.1	1012.3	91	63	77.1	-1.1	97	9+	53	3	23	0	38	30	.53	-.26	.37	5	9	.0	0	9.9	ESE	52	NW	10	16	9	6	3.8	77
Pueblo	4639	859.1	1014.1	91	61	75.8	.9	98	11+	55	3+	19	0	48	45	1.54	-.27	.78	8	10	.0	0	9.2	SE	43	NW	12	11	15	5	4.4	81
CONNECTICUT																																
Bridgeport	7	1014.8	------	80	62	71.1	-1.7	95	2	54	30	1	0	--	--	5.99	2.02	1.55	11	6	.0	0	--	--	--	--	--	3	16	12	6.6	--
Hartford	169	1008.3	1014.7	80	60	69.9	-3.9	92	2	49	30	1	0	60	74	3.51	-.05	1.45	9	1	.0	0	9.1	SW	31	W	14	2	13	16	7.1	52
Middletown (U)	133	1010.2	------	80	59	69.2	---	92	2	49	31	1	0	--	--	4.47	----	1.83	11	4	.0	0	8.3	--	%39	NW	14	--	--	--	---	--
New Haven	6	1014.5	1014.9	77	62	69.4	-1.8	94	2	53	31	1	0	--	--	5.25	1.59	1.69	14	7	.0	0	5.7	---	22	S	13+	4	14	13	6.8	61
DELAWARE																																
Wilmington	78	1012.0	1015.4	82	64	73.4	-2.5	94	2	55	30	3	0	64	76	7.39	2.90	3.53	15	7	.0	0	8.5	WSW	--	---	--	3	14	14	6.9	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	86	68	76.9	-.9	97	2	58	31	7	0	--	--	5.93	1.82	2.20	14	6	.0	0	6.3	---	29	NW	22	--	--	-	---	--
Wash. Nat'l. AP	14	1011.1	1015.4	84	68	75.6	-1.7	94	2	58	31	5	0	65	73	5.88	1.62	1.96	13	7	.0	0	8.2	S	35	E	20	4	15	12	6.8	52
FLORIDA																																
Apalachicola (U)	13	1016.5	------	88	75	81.1	-.2	93	14	70	4+	5	0	--	--	4.16	-3.40	1.64	16	19	.0	0	6.9	- -	32	NE	27	3	19	9	6.1	62
Daytona Beach	31	1017.7	1019.3	91	71	80.7	-.1	95	16+	69	1+	19	0	71	77	3.01	-4.10	1.15	9	15	.0	0	8.8	SSW	*35	S	5	8	17	6	5.2	--
Fort Myers	15	1018.4	------	92	71	81.3	-.7	95	24+	68	4+	27	0	--	--	5.34	-3.38	3.48	11	24	.0	0	6.5	---	*28	W	11+	3	20	8	5.8	--
Jacksonville	24	1017.8	1018.9	94	73	83.3	1.2	97	14+	70	1+	29	0	71	75	8.25	.61	1.52	13	12	.0	0	8.2	SW	39	S	16	6	21	4	5.5	72
Key West (U)	9	1017.2	------	92	79	85.6	1.9	95	14	76	1+	30	0	--	--	.62	-3.62	.21	8	11	.0	0	6.8	- -	19	SE	24	1	23	7	6.2	82
Lakeland (U)	214	------	------	91	72	81.5	.3	96	15	69	3+	25	0	-	--	5.94	-2.22	1.35	15	19	.0	0	5.4	---	-	--	-	5	19	7	5.7	76
Miami (U)	8	-- ---	------	87	76	81.4	-.2	92	17	65	17	2	0	--	--	1.78	2.58	.99	9	10	.0	0	10.1	--	40	S	4	4	24	3	5.0	81
Miami	8	1017.7	1018.7	90	76	82.7	.1	93	31	71	11	18	0	72	74	2.34	-4.39	.84	13	10	.0	0	9.6	SE	28	SW	18	2	23	6	6.1	--
Miami Beach	9	------	------	87	78	82.5	.0	92	17	71	7	1	0	--	--	1.02	-2.81	.21	13	--	.0	0	- -	---	--	---	--	12	10	9	---	--
Orlando	106	1015.2	1019.5	93	71	82.1	.0	97	15	68	29	27	0	71	76	5.88	-1.82	2.52	16	16	.0	0	7.7	S	30	W	11	5	21	5	5.4	--
Pensacola (U)	13	1015.7	------	88	74	81.0	.0	96	18	70	5+	9	0	--	--	8.73	1.14	2.58	16	11	.0	0	8.0	--	26	NW	10	--	--	--	---	45
Tallahassee	64	1015.6	1018.2	89	70	79.6	-1.4	94	27	65	11+	18	0	72	83	9.78	1.91	2.29	19	22	.0	0	5.2	S	--	---	--	1	16	14	7.1	--
Tampa	19	1017.7	1019.2	89	73	81.0	-.7	94	21	69	14	14	0	72	76	3.69	-4.42	.94	13	21	.0	0	7.7	SE	*27	SE	27	3	19	9	6.2	65
West Palm Beach	15	1017.7	1018.7	91	74	82.7	.7	95	16+	70	11	25	0	73	76	2.98	-3.72	1.94	11	14	.0	0	8.9	ESE	*43	NW	17	6	18	7	5.5	--
GEORGIA																																
Atlanta	975	977.2	1017.9	89	70	79.3	-.2	95	27+	63	11	13	0	69	76	7.26	2.85	1.40	14	13	.0	0	10.3	W	35	W	9	2	19	10	6.4	58
Athens	798	988.7	1017.4	89	68	78.9	-1.9	99	28	61	11+	14	0	69	78	6.03	1.22	1.30	15	19	.0	0	8.0	SW	*32	SW	23	5	17	9	6.0	-
Augusta	143	1010.3	1016.7	93	70	81.5	.5	99	27	61	12	28	0	70	74	2.19	-3.02	.84	12	21	.0	0	6.9	SW	*46	WNW	15	5	15	11	6.1	--
Columbus	385	1003.9	------	92	70	80.6	-.3	98	27	61	12	25	0	--	--	6.41	.49	1.45	16	17	.0	0	----	---	--	--	-	3	16	12	6.8	--
Macon	356	1004.0	1017.3	93	70	81.5	-.9	97	27	64	11+	28	0	70	75	5.73	.39	.92	18	18	.0	0	8.8	WSW	52	NW	25	2	18	11	6.5	67
Rome	637	994.4	------	91	67	78.9	-1.1	98	27	57	11+	22	0		--	8 85	4.14	2.58	16	23	.0	0	----	-	--	---	-	2	18	11	6.6	--
Savannah	48	1015.4	1017.7	92	70	81.0	-.4	98	18	65	19	23	0	71	76	5.86	-1.23	2.68	7	14	.0	0	8.4	SW	36	N	27	5	20	6	5.9	73
Thomasville (U)	283	------	------	92	70	80.9	.3	97	27	65	11	24	0	--	--	7.06	.04	1.68	20	18	.0	0	----	---	--	---	--	--	--	--	---	--
IDAHO																																
Boise	2842	919.1	1013.0	91	60	75.2	.4	106	9	44	1	21	0	46	39	.15	-.03	.14	3	3	.0	0	7.6	NW	36	W	11	24	5	2	2.4	93
Idaho Falls 46W (R)	4933	850.7	1014.9	88	51	69.5	.3	96	9+	37	1	15	0	--	--	.17	-.27	.11	4	3	.0	0	7.3	---	a29	WSW	6	-	--		---	-
Idaho Falls 42NW (R)	4790	------	------	89	51	69.9	1.8	100	20	35	3	16	0	--	-	.26	-.25	.14	4	--	---	--	8.8	---	a33	SSW	6	--	--		--	--
Lewiston	1413	963.4	1014.2	91	58	74.0	-1.2	102	19	44	1	20	0	--	--	.30	-.12	.08	8	10	.0	0	----	--	-	---	--	19	8	4	3.2	..
Pocatello	4444	864.2	1013.6	89	56	72.2	-.5	98	9+	46	4	16	0	42	37	.08	-.68	.04	3	7	.0	0	10.3	SW	36	SW	24	21	8	2	2.7	86
ILLINOIS																																
Cairo (U)	314	1002.7	-----	91	72	81.6	.4	99	27	63	10	19	0	--	--	2.36	-.24	1.49	10	10	.0	0	6.6	- -	22	NE	18+	17	12	2	3.7	76
Chicago	610	991.9	1014.2	82	64	72.9	-1.7	103	1	54	6	3	0	59	65	2.49	-.24	.79	10	5	.0	0	8.2	W	30	NE	16	6	12	13	6.5	61
Moline	589	992.2	1014.2	84	63	73.2	-2.3	103	1	52	30	5	0	62	71	4.09	.87	2.32	13	12	.0	0	9.1	W	36	W	7	7	15	9	5.9	67
Peoria	654	992.9	1014.7	83	64	73.7	-2.0	99	1	55	30	3	0	63	69	4.67	.97	2.00	8	8	.0	0	10.0	---	37	NW	7	6	15	10	6.0	58
Springfield	589	991.9	1014.8	84	65	74.5	-1.8	97	1+	53	10	6	0	65	73	6.88	3.77	1.27	12	10	.0	0	8.8	SSW	50	W	13	7	12	12	5.8	67
INDIANA																																
Evansville	383	1000.0	1015.5	89	67	77.7	-.5	98	2+	55	11	11	0	66	72	2.23	-.77	.66	13	11	.0	0	6.9	SW	33	N	28	7	15	9	5.5	66
Fort Wayne	801	983.7	1014.5	83	63	73.0	-.5	99	27	54	30	3	0	61	70	2.63	-.65	.83	12	6	.0	0	10.6	SW	38	NW	27	2	13	16	7.2	52
Indianapolis	793	986.1	1015.7	82	64	72.9	-3.1	94	27	55	10	4	0	64	76	3.93	.90	1.05	12	12	.0	0	9.5	SW	35	SW	13	3	12	16	6.7	57
South Bend	768	986.8	1014.5	81	62	71.6	-1.8	99	1	52	30	2	0	61	72	1.59	-1.45	.75	12	7	.0	0	10.2	SSW	*32	N	27	4	14	13	6.7	-

See footnotes at end of table

Table 2—Continued

State and station	Elevation (ground)	Pressure: Ø Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Date	Temperature: Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min. 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max. depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F.	°F	°F.	°F.		°F				°F	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
IOWA																																
Burlington	694	990.2	1015.4	85	63	74.1	-2.7	103	1	54	10	6	0	63	72	4.68	1.25	1.30	13	11	0.0	0	8.1	SSW	30	N	17	5	17	9	5.8	76
Des Moines	948	984.1	1014.9	86	63	74.6	-1.6	103	26	56	10+	8	0	61	67	2.76	-.18	.75	9	8	.0	0	10.8	WNW	52	W	15	7	14	10	5.9	70
Dubuque	1065	989.2	1014.6	82	60	70.7	-2.6	95	15	51	10	1	0	60	67	3.44	.03	1.30	7	10	.0	0	----	---	--	---	--	4	13	14	6.6	--
Sioux City	1094	973.9	1014.6	86	63	74.3	-2.0	102	26	54	19	8	0	61	66	5.36	2.44	2.74	12	15	.0	0	11.0	SSE	57	S	15	10	14	7	5.2	76
Waterloo	870	---- -	----	83	60	71.7	-2.8	98	15+	54	14+	3	0	--	--	4.27	.51	2.46	9	7	.0	0	10.6	---	--	---	--	--	--	--	---	--
KANSAS																																
Concordia (U)	1375	962.8	----	92	69	80.1	1	105	26	60	20	17	0	—	57	1.58	-1.81	.62	8	13	.0	0	6.7	---	26	NE	11	12	11	8	4.8	85
Dodge City	2594	927.5	1013.1	91	67	79.3	-.6	103	15	63	4+	18	0	57	51	2.13	-.52	.67	14	15	.0	0	13.0	SSW	56	NW	6	10	15	6	4.9	77
Goodland	3645	889.9	1014.1	90	60	74.7	-.9	102	26	54	23	16	0	53	53	1.93	-.87	.45	9	12	.0	0	10.2	S	*27	WNW	3+	9	17	5	4.7	--
Topeka	879	979.3	1014.4	92	68	80.0	.8	103	26+	57	10	19	0	66	67	4.44	1.19	1.23	13	17	.0	0	9.1	S	63	NE	11	7	17	7	5.3	69
Wichita	1321	965.5	1013.2	95	70	82.4	1.5	104	15	62	9+	24	0	61	54	2.51	-.92	.85	8	11	.0	0	11.9	SSW	66	NW	5	7	18	6	5.2	74
KENTUCKY																																
Lexington	979	980.9	1016.3	85	65	75.2	-.5	95	27	56	10+	7	0	66	78	6.10	1.85	1.63	14	12	.0	0	8.9	S	--	---	--	5	17	9	6.1	--
Louisville	474	996.4	1015.4	87	67	76.9	-1.0	96	27	56	11	9	0	67	73	2.59	-.49	.86	10	8	.0	0	7.7	SW	40	SW	5	8	14	9	5.7	75
LOUISIANA																																
Baton Rouge	64	1015.2	1018.3	92	72	82.0	.9	95	4+	66	6+	29	0	72	77	6.25	.38	2.34	13	17	.0	0	7.3	W	--	---	--	3	16	12	6.6	--
Lake Charles	12	1015.9	1017.4	94	75	84.1	1.9	98	17	71	23	28	0	72	74	.48	-6.45	.25	7	10	.0	0	6.2	SW	*18	SSW	13+	5	19	7	5.6	--
New Orleans (U)	9	1015.9	--	91	76	83.4	.3	94	28	69	29	26	0	--	--	8.27	1.18	2.22	12	18	.0	0	5.2	---	22	N	5+	3	19	9	6.3	58
New Orleans	3	1015.9	1017.8	91	73	81.9	.1	94	4+	69	9	23	0	74	80	6.65	.76	2.35	13	14	.0	0	7.8	SSW	*30	E	4	6	16	9	5.6	--
Shreveport	252	1007.1	1016.2	97	73	84.8	1.2	100	16+	69	23	31	9	69	64	.30	-3.40	.24	2	6	.0	0	9.1	SSW	--	---	--	11	14	6	4.6	83
MAINE																																
Caribou	624	989.8	1012.8	71	52	61.1	-2.9	81	21	44	5	0	0	53	77	2.86	-1.17	.71	14	6	.0	0	8.7	WSW	*48	WSW	10	1	16	14	7.2	--
Portland	61	1010.5	1014.5	76	54	65.1	-2.7	88	2	43	30+	0	0	56	74	3.03	.20	.79	11	4	.0	0	7.4	W	28	NW	15	6	11	14	6.5	6
MARYLAND																																
Baltimore (U)	14	------	-- --	86	71	78.2	-.3	98	2	62	6+	6	0	-	--	6.02	2.08	4.05	13	--	---	--	----	---	--	---	--	--	--	--	---	--
Baltimore	146	1011.3	1016.1	84	66	74.7	-1.6	97	2	54	31	5	0	66	75	7.06	3.12	4.26	11	9	.0	0	8.6	W	36	NW	14	5	12	14	6.8	5
Frederick	294	----	-----	83	63	72.9	-3.8	96	2	52	30	4	0	--		8.82	5.17	3.28	17	2	.0	0	----	---	--	---	--	--	--	--	---	--
MASSACHUSETTS																																
Blue Hill Obs (R)	629	991.9	1015.0	77	60	67.6	-1.6	88	2	51	7+	0	0	--	74	4.90	1.19	1.75	12	3	.0	0	12.7	WSW	46	WNW	14	3	14	14	6.7	5
Boston	15	1009.6	1014.2	80	64	71.7	-.5	93	2	55	7	1	0	58	67	3.32	.14	1.22	9	2	.0	0	11.0	SW	*37	W	2	3	14	14	6.9	6
Nantucket	43	1014.9	1015.5	73	60	66.3	-.8	78	20+	53	5+	0	0	61	84	2.75	-.08	1.27	7	3	.0	0	11.9	WSW	29	S	2	5	10	16	7.0	6
Pittsfield	1153	973.1	- --	75	55	65.0	-2.6	86	1	43	18	0	0	--	--	4.65	-.30	1.46	12	4	.0	0	----	---	--	---	--	--	--	--	---	-
MICHIGAN																																
Alpena (U)	587	992.6	----	72	55	63.8	-3.6	83	1+	46	29+	0	0	--	--	3.36	.91	1.12	14	8	.0	0	8.6	---	26	SE	20	6	13	12	6.1	6
Detroit	619	988.5	1014.8	81	63	71.8	-1.3	94	27	54	18	2	0	59	67	1.20	-1.71	.31	11	6	.0	0	8.5	W	43	WNW	9	1	14	16	7.2	5
Detroit (Willow Run)	722	986.1	1014.2	81	61	71.3	-2.2	94	27	54	18+	2	0	58	68	2.93	.44	.85	13	6	.0	0	9.9	SW	*28	WNW	9	2	16	13	6.8	--
East Lansing (U)	856	------	- --	80	60	69.8	-1.3	92	27	50	18+	2	0	--	--	2.69	.41	.90	13	9	.0	0	4.0	---	12	N	1+	--	--	--	---	6
Escanaba (U)	594	992.2	---- -	72	56	63.7	-3.2	83	10	45	29	0	0	--	--	2.65	-.57	.91	11	4	.0	0	9.1	---	34	NW	9	4	14	13	6.5	6
Flint	761	987.1	1014.7	78	59	68.7	-2.3	89	27	48	18	0	0	58	71	3.90	1.01	1.22	19	12	.0	0	6.9	SW	*27	WNW	1	5	9	17	6.6	-
Grand Rapids	681	989.5	1014.4	79	60	69.2	-2.3	90	1	49	29	1	0	58	71	2.97	.32	1.19	11	8	.0	0	8.9	WSW	26	W	8+	5	10	16	6.9	5
Marquette (U)	677	987.8	------	68	53	60.6	-5.5	86	26	44	18	0	0	--	75	5.11	1.98	2.14	11	7	.0	0	6.0	---	23	NW	9	3	14	14	6.9	6
Muskegon	627	991.9	1014.8	77	59	68.2	-1.7	85	15	46	30	0	0	58	70	3.90	1.78	1.56	13	9	.0	0	----	---	—	---	--	6	16	9	6.1	-
Sault Ste. Marie	721	992.9	1015.5	70	51	60.6	-3.3	78	24	44	3	0	0	54	80	6.04	3.55	2.20	9	8	.0	0	8.0	WNW	21	NW	28	5	11	15	6.7	5
MINNESOTA																																
Duluth	1409	974.6	1015.9	72	52	61.7	-4.7	84	26	46	5	0	0	53	76	1.78	-1.86	.48	10	6	.0	0	11.3	WNW	29	NE	7+	2	15	14	7.2	57
Intern'l Falls	1179	974.9	1015.7	74	50	61.7	-4.1	84	23	41	3	0	0	54	75	3.56	.12	.87	14	10	.0	0	8.4	W	--	---	--	5	8	18	7.1	--
Minneapolis	830	982.4	1015.5	79	61	70.1	-4.0	90	26	55	9	1	0	58	70	5.32	2.65	1.38	15	8	.0	0	9.8	NNE	35	N	17	8	8	15	6.1	59
Rochester	1017	978.3	1015.0	79	57	68.3	-3.5	91	26	51	14+	2	0	59	74	1.88	-1.59	.77	10	11	.0	0	7.0	NW	--	---	--	6	11	14	6.3	--
St. Cloud	1034	977.7	1015.2	77	57	66.5	-4.1	89	26	50	29	0	0	58	77	4.79	1.74	1.31	15	8	.0	0	5.6	NW	--	---	--	7	12	12	6.1	--
MISSISSIPPI																																
Jackson	305	1005.7	1017.3	93	71	81.9	-.2	96	5+	64	23	29	0	70	72	1.71	-2.90	1.22	10	13	.0	0	5.5	WSW	38	E	5	8	16	7	5.6	6
Meridian	294	1003.5	------	94	70	81.7	.8	99	16	63	23	27	0	--	--	2.53	-3.43	.90	13	18	.0	0	----	---	--	---	—	6	21	4	5.0	--
Vicksburg (U)	234	1008.3	------	92	74	83.0	1.5	96	30	67	23	27	0	--	-	.61	-3.35	.49	6	14	.0	0	7.2	---	24	N	8+	5	18	8	6.0	72
MISSOURI																																
Columbia	778	986.8	1015.0	88	66	77.2	-.6	101	1	56	10	10	0	66	72	6.75	3.74	3.23	12	13	.0	0	7.4	SSW	40	NW	3	11	12	8	5.0	8
Kansas City	741	980.7	1014.7	91	71	80.8	-.1	102	26+	63	10	16	0	65	62	4.58	1.75	1.15	11	13	.0	0	10.3	S	34	NW	18	9	18	4	4.8	7
St Joseph	809	------	-----	90	67	78.7	-1.4	103	27	56	10	17	0	--	--	3.05	-.04	.85	11	17	.0	0	8.8	---	*46	N	11	9	16	6	4.9	--
St. Louis (U)	465	994.9	-----	86	70	78.0	-2.6	99	26+	62	10+	9	0	--	--	7.66	4.75	1.90	13	13	.0	0	9.0	---	40	E	3	11	13	7	5.0	6
St. Louis	552	994.9	1015.2	88	68	77.8	-1.9	98	26+	59	10+	11	0	66	70	7.03	4.45	2.87	13	12	.0	0	7.3	WSW	--	---	--	6	15	10	5.9	--
Springfield	1265	968.8	1015.5	88	67	77.7	.2	95	15+	56	10	16	0	67	72	4.21	1.04	2.20	8	8	.0	0	11.0	S	49	NW	8	7	16	8	5.5	6
MONTANA																																
Billings	3568	893.7	1014.9	86	58	72.1	-1.2	102	24	49	1	11	0	50	48	1.07	-.07	.64	9	10	.0	0	10.3	SW	42	NW	24	16	11	4	3.8	80
Butte	5530	833.4	1018.0	78	45	61.7	-.7	90	23	34	4	1	0	41	--	1.86	.62	.49	12	13	.0	0	6.6	NW	*37	S	13	12	15	4	4.2	--
Glasgow (U)	2277	942.1	1015.9	82	56	68.7	-3.5	99	24	46	2+	5	0	50	56	1.62	.15	.94	9	7	.0	0	9.5	ESE	*40	WSW	13	10	10	11	5.6	--
Great Falls	3664	891.0	1015.6	82	57	69.4	-.2	94	20+	48	1+	8	0	45	46	1.02	-.33	.56	7	4	.0	0	11.4	WSW	59	SW	5	16	9	6	4.0	82
Havre	2488	927.9	1015.6	84	56	70.1	-1.2	98	22+	45	2	11	0	50	54	1.41	-.06	.97	5	3	.0	0	7.6	---	31	NW	17	12	12	7	4.9	67
Helena	3893	876.4	1015.8	83	53	67.8	-.2	95	20	41	4	7	0	46	51	1.04	.06	.38	7	9	.0	0	8.3	WNW	50	S	13	14	13	4	4.0	76
Kalispell	2965	----	- ----	81	51	66.0	.0	91	19+	41	7	3	0	—	--	2.32	1.16	.86	11	8	.0	0	----	---	--	---	--	17	9	5	3.5	--
Miles City	2629	932.3	1015.6	87	59	73.1	-1.9	105	24	50	1+	11	0	54	--	1.83	.41	.88	10	8	.0	0	11.1	NE	*35	SSW	13	10	15	6	4.6	--
Missoula	3200	903.8	1016.8	84	51	67.8	-.6	96	24	43	7	13	0	47	55	1.96	1.13	1.42	7	8	.0	0	6.0	NNE	35	S	28	14	15	2	3.7	78
NEBRASKA																																
Grand Island	1841	949.5	1014.2	88	63	75.5	-3.4	102	26	54	8	11	0	62	66	.94	-1.69	.20	11	11	.0	0	11.4	SE	--	---	--	13	7	11	4.8	--
Lincoln (U)	1166	------	-- ---	89	66	77.8	-1.4	105	27	60	8+	16	0	--	—	4.38	1.28	1.15	9	8	.0	0	9.0	---	46	NW	15	13	13	5	4.4	78
Norfolk	1544	960.0	1014.9	85	62	73.8	-2.4	105	26	54	9+	7	0	60	63	3.48	.45	1.44	10	12	.0	0	----	---	--	---	--	6	17	8	5.7	--
North Omaha	1323	967.5	------	84	63	73.7	---	104	26	56	9	6	0	--	--	5.92	----	1.52	12	10	.0	0	----	---	--	---	--	--	--	--	---	--
North Platte	2779	917.4	1014.1	87	59	73.2	-2.6	100	26	47	9	9	0	60	67	3.16	.76	.98	10	8	.0	0	8.0	SE	36	N	17	11	13	7	4.9	74
Omaha	978	975.3	1014.7	87	65	76.2	-2.3	106	26	59	9+	11	0	63	68	7.44	4.10	2.09	11	11	.0	0	9.2	SSE	57	NW	7	8	15	[illegible]	5.3	70
Scottsbluff	3950	881.1	1013.9	87	58	72.4	-2.2	98	26	49	20	10	0	53	57	2.08	.63	1.85	9	10	.0	0	9.3	ESE	--	---	--	16	10	5	4.2	--
Valentine (U)	2587	924.1	-----	88	59	73.5	-1.8	104	26	48	9	11	0	--	--	1.49	-1.21	1.14	10	12	.0	0	10.4	---	39	N	7	7	17	7	5.5	73
NEVADA																																
Elko	5075	847.3	1014.7	90	48	68.8	-1.4	98	9	35	3	20	0	39	37	.05	-.32	.05	1	7	.0	0	5.3	WSW	*28	NNW	24	22	7	2	2.8	--
Ely	6257	812.7	1015.9	86	46	65.6	-2.8	92	8+	34	3	5	0	29	32	.18	-.37	.10	5	9	.0	0	10.3	---	37	NW	31	11	15	5	4.1	76
Las Vegas	2162	945.5	1009.4	103	74	88.2	-2.3	110	8	64	4	31	0	38	22	1.64	1.18	1.32	6	7	.0	0	11.5	SW	*46	WSW	20	18	10	3	3.0	86
Reno	4397	863.9	1015.1	89	48	68.6	-1.0	96	17	39	1+	17	0	42	44	.49	.26	.41	3	6	.0	0	6.0	WNW	*54	S	19	23	5	3	2.4	89
Winnemucca	4299	868.9	1013.4	92	53	72.2	-2.0	99	19	39	[illegible]	22	0	35	30	.11	-.20	.11	1	5	.0	0	8.4	W	38	S	20	20	8	3	2.5	86
NEW HAMPSHIRE																																
Concord	339	1003.6	1014.4	79	54	66.2	-2.8	90	1	40	30	1	0	58	76	3.27	-.30	1.15	13	4	.0	0	5.7	NNW	20	W	2	3	15	13	6.7	52
Mt. Washington	6262	808.0	- ----	50	40	44.9	-4.4	61	1	30	29	0	3	--	95	10.32	3.96	1.96	19	4	.0	0	29.4	[illegible]	%88	WNW	14	2	6	23	8.5	24

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
NEW JERSEY																																
Atlantic City(U)	8	1013.2	------	78	67	72.4	-1.2	89	2	61	6+	0	0	--	--	4.79	1.01	1.80	12	9	0.0	0	13.7	---	45	S	21	5	14	12	6.9	52
Newark	11	1014.0	1015.3	82	65	73.1	-2.2	95	2	57	5+	1	0	62	70	4.99	.79	1.30	16	8	.0	0	8.8	WSW	•25	NW	14+	1	15	15	7.3	--
Trenton (U)	56	1008.2	1014.8	81	65	72.7	-2.6	93	2	57	5+	3	0	--	--	3.51	-.55	1.85	14	9	.0	0	8.2	---	32	NW	3	3	14	14	6.9	52
NEW MEXICO																																
Albuquerque	5310	850.7	1011.6	92	65	78.4	-.6	100	8	58	20	22	0	47	40	1.49	.06	.72	7	5	.0	0	9.0	SE	43	NE	19	14	13	4	4.2	81
Clayton	4969	848.3	1013.9	87	59	73.0	-1.1	96	7+	55	4	9	0	--	--	4.23	1.67	1.73	10	15	.0	0	----	---	--	---	--	12	12	7	4.5	--
Raton	6379	809.7	1014.2	85	53	68.8	.2	93	7+	46	3	8	0	-	--	3.48	.98	1.36	11	19	.0	0	----	---	--	---	--	10	15	6	4.9	--
Roswell	3612	894.0	1011.9	96	65	80.5	1.5	104	16	59	26	28	0	52	43	.54	-1.27	.31	7	6	.0	0	10.2	---	63	N	16	12	10	9	4.9	--
NEW YORK																																
Albany	277	1010.6	1014.5	79	59	69.0	-2.4	90	1	49	17	1	0	59	73	2.76	-.54	1.18	11	4	.0	0	6.8	S	26	W	14+	2	15	14	7.1	71
Binghamton	1601	956.5	1015.2	74	57	65.5	-3.6	87	1	47	30	0	0	57	78	7.40	3.58	2.10	15	8	.0	0	10.4	WSW	58	W	1	0	15	16	7.7	54
Buffalo	693	987.6	1015.0	74	60	68.9	-1.7	90	1	52	18	1	0	59	74	3.54	1.11	1.86	11	5	.0	0	12.0	SW	48	W	1	0	17	14	7.1	59
New York (U)	10	1013.9	------	80	66	72.7	-1.9	92	2	57	5+	1	0	--	--	3.50	-.74	1.27	11	7	.0	0	11.7	---	48	W	3	3	16	12	6.7	57
New York	19	1013.6	1015.5	82	67	74.2	-1.7	94	2	57	6	2	0	62	68	4.15	.03	1.24	12	8	.0	0	11.2	WSW	41	NE	21	2	16	13	7.1	--
Rochester	543	995.4	1014.5	77	59	68.2	-3.0	92	1	50	19+	2	0	59	74	2.91	-.18	1.20	13	7	.0	0	11.5	SW	56	W	1	4	17	10	6.5	60
Schenectady	217	------	------	79	61	70.1	-2.6	91	1	52	17	1	0	--	--	3.17	-.40	.90	11	3	.0	0	----	---	--	---	--	14	12	5	4.1	--
Syracuse	424	993.4	1015.1	77	59	68.2	-4.3	91	1	51	7+	1	0	58	71	3.75	.49	.73	17	8	.0	0	7.4	WNW	44	W	1	3	17	11	6.6	60
NORTH CAROLINA																																
Asheville (U)	2203	------	------	84	63	73.6	-.2	90	28	54	11	1	0	--	--	5.11	.61	1.24	19	17	.0	0	5.5	---	22	NW	28	3	17	11	6.3	61
Charlotte	727	989.5	1017.1	91	68	79.7	1.1	98	28	62	12	22	0	68	75	3.16	-1.51	1.18	15	12	.0	0	8.1	SW	45	N	28	6	11	14	6.4	70
Greensboro	891	985.9	1017.3	88	66	76.9	-.3	95	2+	58	11+	12	0	67	75	4.71	-.23	1.15	12	11	.0	0	7.0	SW	40	WNW	9	5	13	13	6.1	71
Hatteras (R)	4	1016.2	1016.9	84	74	79.0	.5	87	29	68	31	0	0	73	83	5.35	-1.13	3.16	9	11	.0	0	14.5	S	34	S	9	9	11	11	5.9	80
Raleigh	433	1003.7	1016.6	88	67	77.8	-.7	97	2+	59	31	12	0	68	77	6.83	1.38	1.90	15	13	.0	0	8.3	S	•35	NW	28	7	11	13	6.2	74
Wilmington	30	1015.7	------	90	73	81.3	1.3	95	25+	63	12	20	0	--	--	3.31	-4.85	1.49	10	9	.0	0	11.9	---	37	SW	9	6	17	8	5.6	72
Winston-Salem	967	982.3	1017.0	88	67	77.5	.0	97	3	60	31	13	0	66	73	5.34	.77	1.40	14	12	.0	0	7.0	SW	•25	SW	8	6	14	11	6.0	--
NORTH DAKOTA																																
Bismarck	1650	956.3	1016.0	79	57	67.9	-4.2	92	25	51	6	3	0	56	71	2.78	.45	.75	14	10	.0	0	9.5	WNW	42	N	26	9	11	11	5.8	68
Devils Lake (U)	1471	963.1	------	77	55	65.9	-3.4	90	25	47	6	1	0	--	--	2.10	-.57	1.08	11	1	.0	0	6.3	---	22	S	1+	8	13	10	5.7	71
Fargo	895	982.1	1016.1	79	58	68.0	-3.3	88	15	49	6	0	0	57	72	3.58	1.27	1.55	13	6	.0	0	10.5	N	49	W	17	5	14	12	6.1	44
Williston (U)	1877	948.9	1015.9	78	56	67.2	-3.7	94	24	47	1	3	0	53	62	2.20	.07	.57	13	7	.0	0	6.8	---	26	E	3+	8	10	13	5.8	68
OHIO																																
Akron	1210	978.2	1016.0	79	60	69.7	-2.7	90	2+	50	30	2	0	61	77	5.12	.92	1.30	15	12	.0	0	9.0	SW	--	---	--	1	14	16	7.4	--
Cincinnati Obs.	761	------	------	84	66	75.0	-1.6	96	27	58	31	6	0	--	--	3.97	.27	1.07	13	11	.0	0	4.7	---	21	NW	16	--	--	--	---	75
Cincinnati	869	984.0	1015.5	84	65	74.3	-.8	95	27	55	11	5	0	64	75	3.90	.15	1.69	10	8	.0	0	8.0	SW	•31	N	28	4	11	16	6.9	--
Cleveland	787	987.5	1015.0	80	63	71.7	-2.0	93	1	51	30	3	0	62	72	3.74	.70	1.41	15	8	.0	0	11.8	SSW	65	W	8	1	18	12	7.0	49
Columbus (U)	724	------	------	83	65	73.9	-1.9	95	2	58	18+	3	0	--	--	3.44	-.09	1.16	13	8	.0	0	----	---	--	---	--	--	--	--	---	--
Columbus	815	985.9	1015.5	85	63	73.8	-.6	96	2+	55	30+	3	0	63	73	4.92	1.07	1.11	13	7	.0	0	7.3	SSW	49	NW	2	1	13	17	7.2	62
Dayton	1002	979.6	1015.3	82	65	73.3	-1.7	97	27	57	18+	3	0	63	74	4.47	1.18	1.65	13	8	.0	0	10.0	SW	34	S	8+	2	9	20	7.5	62
Sandusky (U)	603	992.6	------	81	65	73.1	-1.5	95	1	56	30	3	0	--	--	1.70	-1.75	.89	12	8	.0	0	6.0	---	32	SW	8	3	20	8	6.2	59
Toledo	676	989.7	1014.7	82	62	72.1	---	95	27	52	30	4	0	61	72	2.98	----	1.60	11	9	.0	0	9.3	SSW	36	SW	8	2	18	11	6.7	69
Youngstown	1178	973.8	1015.8	79	60	69.4	-2.9	90	1+	50	18	2	0	61	77	7.07	2.91	1.57	15	10	.0	0	9.5	SSW	•32	SW	9	3	13	15	7.1	--
OKLAHOMA																																
Oklahoma City	1280	971.2	1013.9	95	71	83.0	.9	100	26+	66	19+	26	0	63	55	2.19	.04	.62	10	14	.0	0	13.1	S	43	NW	20	11	12	8	4.6	78
Tulsa	672	990.2	1013.9	97	74	85.2	3.1	103	26	64	10	29	0	64	54	1.36	-1.33	.61	9	8	.0	0	9.3	S	39	NW	5	8	18	5	5.1	70
OREGON																																
Astoria	8	1019.0	1019.4	69	53	60.9	.1	89	19	46	7+	0	0	54	80	.18	-.89	.17	3	1	.0	0	7.6	NW	--	---	--	9	11	11	5.8	--
Burns (U)	4140	875.0	1015.2	86	54	70.0	.2	96	9+	38	3	12	0	41	38	.59	.34	.27	5	6	.0	0	----	---	--	---	--	18	11	2	2.8	--
Eugene	361	1004.4	1017.8	82	51	55.5	.0	100	18+	42	29+	8	0	--	--	T	.26	T	0	1	.0	0	8.2	---	--	---	--	17	9	5	3.3	--
Meacham	4050	------	------	80	52	65.8	2.6	94	19+	40	1	4	0	--	--	.46	.00	.30	5	8	.0	0	----	---	--	---	--	20	7	4	2.7	--
Medford	1312	968.8	1015.8	91	56	73.2	1.4	104	18	44	1	16	0	51	52	.94	.77	.91	2	4	.0	0	5.8	NNW	•23	WNW	10	24	5	2	2.0	--
Pendleton	1492	962.1	1014.8	91	61	75.9	1.4	104	19	48	1	17	0	44	36	.27	.01	.15	6	3	.0	0	10.6	WNW	•40	WSW	9+	22	6	3	2.4	--
Portland	21	1012.2	1017.7	80	56	68.0	.7	102	19	48	31	4	0	54	65	.01	-.41	.01	1	3	.0	0	8.2	NW	31	S	19	17	6	8	4.2	64
Roseburg	505	998.6	1016.9	84	52	68.2	1.0	101	18	43	29+	10	0	--	--	T	-.20	T	0	1	.0	0	5.9	---	20	N	2	20	6	5	2.9	78
Salem	195	1010.2	1017.7	85	51	67.8	.1	106	19	42	29	9	0	52	62	T	-.32	T	0	3	.0	0	7.6	N	--	---	--	16	10	5	3.5	--
Sexton Summit(R)	3836	------	------	77	54	65.8	2.6	92	18	39	1	2	0	--	--	1.20	.88	1.20	1	2	.0	0	---	---	--	---	--	24	3	4	2.0	--
PENNSYLVANIA																																
Allentown	376	1002.0	1016.1	79	61	69.9	-4.2	90	2	51	30	1	0	62	78	6.16	1.38	1.77	17	11	.0	0	8.9	WSW	--	---	--	2	13	16	7.1	--
Harrisburg	335	1001.6	1015.6	80	64	72.0	-3.4	93	1	53	30	3	0	61	73	4.57	.93	1.63	19	7	.0	0	6.6	W	25	NW	11	3	10	18	7.4	59
Philadelphia (U)	26	------	------	81	67	73.6	-3.6	93	2	59	5+	1	0	--	--	4.70	.49	----	15	--	.0	0	----	---	--	---	--	--	--	--	---	--
Philadelphia	10	1010.9	1015.3	82	65	73.6	-2.7	94	2	58	31	2	0	64	73	4.61	.41	2.30	16	6	.0	0	9.0	WSW	37	SW	8	1	13	17	7.6	50
Pittsburgh (U)	749	------	------	82	64	73.1	-2.3	93	2	54	30	3	0	--	--	4.15	.43	.81	20	--	.0	--	----	---	--	---	--	--	--	--	---	48
Pittsburgh	1151	985.9	1015.9	79	62	70.3	-2.0	88	1	50	30	0	0	62	77	4.25	.34	1.32	13	10	.0	0	9.4	WSW	51	WSW	9	2	11	18	7.5	56
Reading (U)	266	1003.3	1014.9	81	64	72.8	-2.9	94	2	55	31	3	0	--	--	4.01	-.42	1.29	18	10	.0	0	8.4	---	43	S	1	1	15	15	7.3	42
Scranton	940	981.9	1016.0	77	58	67.5	-4.7	89	1	47	30+	0	0	59	74	3.18	-2.15	.85	17	12	.0	0	6.1	SW	40	N	1	1	16	14	7.3	44
Shippingport (U)	736	------	------	79	61	70.0	---	90	2	52	15	1	0	--	--	5.08	----	1.52	14	10	.0	0	2.1	---	%42	W	9	--	--	--	---	--
Williamsport	527	996.6	------	80	60	69.9	-3.4	93	1	49	30	3	0	--	--	7.17	3.46	1.51	20	--	.0	0	----	---	--	---	--	1	13	17	7.6	--
RHODE ISLAND																																
Block Island	110	1010.5	1014.7	73	61	67.1	-2.0	80	3	55	5+	0	0	--	--	4.35	1.80	1.74	10	5	.0	0	----	---	--	---	--	--	--	--	6.7	--
Providence	55	1008.6	1014.5	80	61	70.5	-.5	90	2	51	31	1	0	60	72	4.92	1.86	1.51	10	3	.0	0	10.1	SW	•27	S	8	6	12	13	6.6	62
SOUTH CAROLINA																																
Charleston (U)	9	------	------	89	76	82.1	.6	95	14	72	1+	11	0	--	--	5.60	-2.44	2.51	13	13	.0	0	9.4	---	34	NW	27	9	12	10	5.8	79
Charleston	41	1016.3	1018.1	89	71	79.9	-.2	95	14	67	11+	9	0	72	82	10.60	2.56	2.32	14	18	.0	0	10.9	SW	--	---	--	1	18	12	6.5	--
Columbia	217	1008.3	1016.5	94	71	82.5	1.1	100	27	68	11+	28	0	70	71	3.68	-2.88	1.73	9	12	.0	0	8.2	SW	35	SSW	8	6	16	9	6.0	81
Florence	146	1011.6	------	92	71	81.6	.7	98	16	65	12	26	0	--	--	3.10	3.35	1.25	11	13	.0	0	----	---	--	---	--	11	14	6	5.0	--
Greenville	1018	980.1	1016.6	89	68	78.4	.0	96	27+	64	12	12	0	66	71	8.14	3.33	2.73	16	18	.0	0	9.4	WSW	37	W	23	4	15	12	6.7	63
Spartanburg	801	------	------	90	69	79.4	.5	97	27	64	11+	16	0	--	--	3.96	-.74	1.39	13	13	.0	0	7.8	---	•23	SW	9	--	--	--	---	--
SOUTH DAKOTA																																
Huron	1282	968.8	1015.1	84	59	71.9	-3.5	98	26	50	9	6	0	59	68	3.47	1.39	1.20	11	13	.0	0	9.9	SSE	73	NW	6	10	13	8	5.2	76
Rapid City	3165	903.2	1015.4	85	59	72.0	-.3	98	14	52	8	10	0	49	49	2.27	.21	1.55	12	15	.0	0	10.2	NNW	35	N	5+	10	17	4	4.7	67
Sioux Falls	1420	964.4	1015.2	83	59	70.8	-4.0	94	6+	50	29	4	0	57	68	4.02	1.02	1.48	13	13	.0	0	8.9	NE	•46	NNW	6	10	13	8	5.6	--
TENNESSEE																																
Bristol	1519	963.9	------	86	64	74.9	.1	92	3+	55	11+	6	0	--	--	4.34	-.80	1.13	15	13	.0	0	----	---	--	---	--	3	14	14	6.8	--
Chattanooga	670	989.8	1016.8	90	68	79.3	1.0	97	27+	57	11	20	0	68	73	3.49	-1.85	.83	13	14	.0	0	5.4	S	39	SW	24	4	17	10	6.2	67
Knoxville	950	982.6	1017.4	87	68	77.5	-.9	95	28	57	11	8	0	67	74	4.54	-.18	1.00	17	16	.0	0	6.7	WSW	37	SW	9	3	16	12	6.3	61
Memphis (U)	271	------	------	91	74	82.2	.9	95	4+	64	21	22	0	--	--	3.59	.49	2.14	3	--	.0	0	----	---	--	---	--	--	--	--	---	--
Memphis	263	1002.0	1016.4	94	72	82.6	1.4	98	31	60	11	27	0	67	69	3.05	-.18	1.32	4	4	.0	0	8.8	SSW	37	W	24	10	15	6	4.8	84
Nashville	577	996.8	1016.4	92	70	81.3	1.3	101	27	61	10	24	0	67	69	1.94	-2.02	.47	13	15	.0	0	7.7	WSW	37	NW	12	5	17	9	5.8	79
Oak Ridge (R)	905	984.3	------	87	67	77.0	-.8	96	27	54	11	8	0	--	--	7.90	2.56	1.63	19	18	.0	0	3.5	---	54	---	16	5	11	15	6.6	--
TEXAS																																
Abilene	1759	953.9	1013.1	98	74	86.2	3.1	104	8	66	21	31	0	58	44	.87	-1.18	.66	3	7	.0	0	11.8	S	45	S	2	12	15	4	4.4	72

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure: Station ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90° F. or above	Temperature: No. of days: Min. 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max. depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days (sunrise to sunset): Partly cloudy	No. of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
TEXAS (Cont'd.)																																
Amarillo	3590	890.6	1012.8	91	65	77.6	-0.2	99	7	57	18	21	0	58	54	2.82	0.46	1.09	13	14	0.0	0	14.5	S	42	E	12	10	14	7	4.9	7
Austin	615	994.2	1015.7	99	75	87.0	2.9	103	16+	71	17+	31	0	65	55	.11	-2.07	.08	2	2	.0	0	11.4	S	40	SE	26	18	7	6	3.8	8
Brownsville	16	1013.5	1014.7	91	73	81.9	-1.9	93	16+	71	21+	24	0	73	79	.05	-1.95	.02	3	1	.0	0	14.4	SSE	35	S	11	15	12	4	3.7	8
Corpus Christi	41	1015.2	1016.2	93	75	83.8	.0	95	6+	72	21+	31	0	73	77	.98	-1.28	.55	3	0	.0	0	13.1	SSE	33	SE	13	13	13	5	4.5	9
Dallas	487	996.6	1014.8	100	78	89.3	3.8	107	8	73	20	31	0	66	49	.13	-1.84	.12	2	3	.0	0	13.4	SSE	34	SW	6+	14	14	3	4.2	8
Del Rio	1091	980.0	1013.6	99	75	87.2	2.5	103	8+	71	3	31	0	61	46	T	-1.58	T	0	0	.0	0	13.7	---	41	SE	26	21	8	2	2.7	8
El Paso	3920	886.9	1011.7	94	70	82.0	.7	101	8	63	25+	26	0	51	37	1.10	-.22	.39	7	7	.0	0	11.1	SSE	45	SE	29	9	14	8	4.9	7
Fort Worth	544	994.2	1014.6	101	77	89.0	3.9	107	8	72	20	31	0	62	44	.38	-1.51	.32	4	6	.0	0	12.6	S	*30	NE	8	13	15	3	4.3	-
Galveston (U)	7	------	------	87	80	83.1	.1	89	27	78	6+	0	0	--	--	.05	-4.75	.05	1	--	.0	0	12.0	---	32	S	10	--	--	--	---	9
Galveston	5	1015.6	1017.7	88	79	83.7	.4	90	30+	77	18+	2	0	74	75	.51	-4.20	.51	1	4	.0	0	14.2	SSW	--	---	--	14	13	4	4.1	-
Houston (U)	41	1011.9	------	95	76	85.5	1.7	98	18	70	10	29	0	--	--	2.37	-2.08	1.57	5	7	.0	0	8.7	---	28	SE	30	15	12	4	4.4	8
Houston	50	1014.6	1016.9	95	74	84.3	1.7	99	17+	72	12+	30	0	72	73	.38	-4.41	.14	6	8	.0	0	9.0	S	--	---	--	11	14	6	4.9	-
Laredo	500	998.6	1013.6	101	76	88.6	.9	105	16	72	3	31	0	66	55	.13	-1.27	.10	3	5	.0	0	16.5	SSE	*55	ESE	25	21	7	3	3.3	-
Lubbock	3243	904.2	1012.8	94	66	79.9	.6	101	16	59	25	26	0	59	53	.69	-1.20	.28	9	11	.0	0	12.9	S	*53	NNW	4	12	16	3	4.5	-
Midland	2854	916.4	1013.1	95	70	82.5	.5	101	16	64	25	30	0	58	47	1.71	-.10	1.02	5	7	.0	0	9.1	SSE	*29	SE	30	14	12	5	4.2	-
Port Arthur	16	1016.6	1017.7	93	73	82.9	1.2	96	5+	71	11+	27	0	74	78	.63	-6.17	.17	7	12	.0	0	9.8	SSW	33	NE	6	9	17	5	5.1	7
San Angelo	1903	948.2	1013.6	97	72	84.5	1.8	102	16	64	21	31	0	57	43	.21	-1.36	.12	3	6	.0	0	10.7	S	*35	NNE	4	15	14	2	3.6	-
San Antonio	792	990.9	1015.4	98	73	85.5	1.3	103	16	69	17	31	0	65	57	.53	-1.38	.30	3	4	.0	0	10.7	SSE	33	SE	26	18	9	4	3.7	8
Victoria	110	1011.5	1016.2	96	74	85.0	.2	99	6	70	23	30	0	70	66	.70	-3.43	.47	4	5	.0	0	12.2	---	%39	S	13+	13	12	6	4.6	-
Waco	500	994.2	1014.8	100	76	87.5	2.5	104	17	71	20	31	0	65	51	.34	-1.60	.34	1	2	.0	0	14.4	S	--	---	--	12	14	5	4.5	-
Wichita Falls	1020	977.3	1013.1	101	75	87.9	4.1	106	17	68	19+	31	0	61	43	.68	-1.51	.33	4	6	.0	0	10.7	S	*37	WNW	8	9	20	2	4.7	-
UTAH																																
Milford	5028	846.3	1013.5	92	56	74.0	.0	101	9	45	5	21	0	--	--	.29	-.48	.19	3	11	.0	0	----	---	--	---	--	16	7	8	4.0	-
Salt Lake City	4220	868.3	1012.4	93	60	76.4	-.2	101	9+	48	4	22	0	42	34	.08	-.53	.04	4	6	.0	0	10.1	SSE	36	NW	11	20	11	0	2.8	8
VERMONT																																
Burlington	331	999.5	1014.0	76	57	66.5	-3.9	87	1	47	18	0	0	56	70	4.06	.31	1.69	13	6	.0	0	6.4	S	38	SW	23	2	10	19	7.2	5
VIRGINIA																																
Lynchburg	947	983.3	------	87	65	76.1	.1	98	2	56	11	9	0	--	--	6.40	2.25	2.65	15	11	.0	0	6.7	---	31	S	3+	5	14	12	6.6	5
Norfolk	26	1015.3	1016.5	88	70	78.7	1.2	97	2	61	31	14	0	69	77	6.63	.58	2.90	19	13	.0	0	8.1	SSW	63	SW	9	7	12	12	6.1	6
Richmond	162	1010.4	1016.2	88	68	77.8	.3	99	2	57	31	14	0	68	76	10.32	4.68	2.92	12	13	.0	0	7.2	SSW	36	SW	9	5	11	15	6.4	7
Roanoke	1174	977.4	1016.7	87	65	76.3	.4	98	2	57	11+	12	0	64	71	2.85	-2.06	.52	17	12	.0	0	7.1	W	--	---	--	6	11	14	6.5	-
WASHINGTON																																
Olympia	190	1010.8	1018.3	79	50	64.5	1.7	100	19	40	1	2	0	51	66	.38	-.34	.38	2	0	.0	0	6.8	SW	*28	WSW	13	10	10	11	4.8	-
Seattle (U)	14	------	------	77	57	66.7	1.1	94	19	51	27	1	0	--	--	.15	-.37	.15	2	0	.0	0	7.8	---	28	S	13	10	13	8	4.7	6
Seattle	14	1017.6	1018.6	--	--	----	---	---	--	--	--	--	--	53	65	----	----	----	--	--	---	--	7.4	NW	--	---	--	--	--	--	---	-
Seattle-Tacoma	376	1005.1	1019.1	76	54	64.6	.7	94	19	46	27	1	0	53	71	.33	-.25	.32	3	0	.0	0	12.2	SW	*30	SW	13	10	13	8	4.9	-
Spokane	2357	947.2	1015.1	86	58	71.6	2.0	96	19+	49	1	11	0	46	44	.50	.14	.38	4	2	.0	0	7.5	NE	33	SW	20	17	9	5	3.1	7
Stampede Pass (R)	3958	882.8	1019.9	68	48	58.1	1.2	85	9+	40	1+	0	0	--	--	1.05	-.24	.56	10	4	.0	0	----	---	--	---	--	16	5	10	4.2	-
Tatoosh	101	1016.3	1019.2	59	51	55.1	-.4	70	18+	48	3+	0	0	52	88	1.53	-.46	1.33	9	0	.0	0	10.9	SSW	35	S	20	6	8	17	6.7	4
Walla Walla (U)	949	978.7	1013.5	91	65	77.8	1.6	103	19+	54	1	17	0	--	--	.08	-.20	.03	4	4	.0	0	----	---	--	---	--	22	5	4	2.5	-
Yakima	1061	976.3	1014.5	90	56	72.8	1.4	101	19	46	28	17	0	48	45	.02	-.16	.02	1	2	.0	0	6.3	NNW	--	---	--	18	10	3	3.1	-
WEST VIRGINIA																																
Charleston	950	981.0	1016.1	83	64	73.5	-1.9	93	2	52	31	5	0	65	78	4.80	-.65	1.26	15	10	.0	0	6.0	SW	*35	WSW	22	0	13	18	7.8	-
Elkins	1970	------	------	79	58	68.4	-1.6	87	1+	49	12+	0	0	62	--	6.06	-.92	1.45	18	12	.0	0	4.7	WNW	*21	WSW	14	0	11	20	7.8	-
Huntington (U)	565	------	------	85	66	75.3	-1.6	94	2	54	31	7	0	--	--	4.24	-.58	.78	14	--	.0	0	----	---	--	---	--	--	--	--	---	-
Parkersburg (U)	615	------	------	83	64	73.8	-1.9	93	2	53	31	2	0	--	--	3.79	-.37	1.15	14	14	.0	0	4.9	---	24	NW	28	4	16	11	6.6	
WISCONSIN																																
Green Bay	689	992.2	1014.6	74	56	65.0	-4.9	83	26	46	18	0	0	58	78	5.85	3.26	2.32	12	8	.0	0	8.6	SW	63	NW	1	7	8	16	6.8	5
La Crosse	652	990.2	1014.5	79	61	70.3	-3.7	90	26	55	5+	1	0	60	69	2.47	-.74	.88	11	11	.0	0	7.5	SE	*35	WSW	1	5	11	15	6.7	-
Madison	857	980.0	1014.6	81	59	70.0	-3.0	91	15	46	30	3	0	59	70	4.50	1.20	1.34	11	9	.0	0	9.1	NW	45	W	7	3	15	13	6.9	
Milwaukee	672	990.2	1014.8	77	59	67.9	-3.4	88	1+	49	30+	0	0	60	77	5.37	2.94	2.03	13	12	.0	0	11.4	NNE	40	W	7	2	16	13	6.8	
WYOMING																																
Casper	5322	840.2	1013.3	86	56	70.8	-.3	95	24	47	8	9	0	39	38	.76	-.41	.34	7	9	.0	0	11.2	WSW	*38	NW	11	13	12	6	4.5	
Cheyenne	6131	815.8	1015.3	81	54	67.5	-.6	90	26	44	9	1	0	44	48	1.43	-.53	.54	11	13	.0	0	10.9	WNW	42	NW	25	9	14	8	5.2	
Lander	5563	838.8	1015.1	86	55	70.3	-.1	98	24	46	4	7	0	41	39	.37	-.51	.26	3	5	.0	0	7.0	---	42	W	11	14	13	4	4.0	
Sheridan	3942	886.6	1015.7	86	55	70.6	.0	102	24	45	4	9	0	47	47	.35	-1.03	.19	8	11	.0	0	8.0	NNW	42	NW	6+	14	15	2	3.8	
PACIFIC AREA																																
Canton Island	9	1010.2	1010.5	87	77	82.3	-1.9	89	11+	74	4+	0	0	73	76	1.20	-1.13	.50	11	0	.0	0	16.2	E	--	---	--	11	12	8	5.3	-
Hilo	31	1015.6	1016.9	82	67	74.5	-.3	85	10+	63	8+	0	0	67	78	5.74	-4.15	2.00	28	0	.0	0	8.3	SW	*23	ESE	7+	4	11	16	7.1	
Honolulu	7	1016.6	1017.0	85	72	78.4	-.4	87	19+	68	9+	0	0	65	67	.12	-.22	.06	6	0	.0	0	11.5	ENE	31	NE	14+	6	19	6	5.7	8
Koror (R)	94	1005.8	1009.5	87	75	80.8	.3	90	25	73	3+	1	0	76	86	12.84	-5.97	3.21	26	4	.0	0	----	---	--	---	--	0	5	26	9.2	-
Lihue	115	1012.2	1017.6	84	71	77.8	.4	86	23+	68	4+	0	0	68	74	.75	-1.12	.15	19	0	.0	0	11.7	ENE	25	NE	15	2	21	8	6.0	5
Majuro	10	1009.5	1009.8	85	77	81.0	---	87	4+	72	6	0	0	75	82	15.27	----	5.39	25	2	.0	0	----	---	--	---	--	1	4	26	8.6	-
Ponape (R)	118	1004.7	1010.2	87	71	79.2	-1.2	90	6	69	15	1	0	75	89	16.90	-.16	4.83	29	0	.0	0	----	---	--	---	--	0	9	22	8.2	-
Truk (Moen Is.)	8	1009.8	1010.2	85	75	80.2	-.1	88	21+	73	2+	0	0	75	85	15.76	2.30	3.68	23	4	.0	0	----	---	--	---	--	0	9	22	8.6	-
Wake Island	11	1013.9	1014.2	86	77	81.6	-.4	88	3+	69	13	0	0	74	79	4.94	-.48	2.15	18	0	.0	0	14.1	E	--	---	--	4	10	17	6.9	-
Yap (R)	53	1007.5	1009.1	89	75	81.8	.1	93	6+	70	12	14	0	76	84	19.56	2.96	3.98	25	0	.0	0	----	---	--	---	--	0	2	29	9.7	-
WEST INDIES																																
San Juan, P.R. (U)	47	------	------	83	76	79.8	-.2	87	21	73	18	0	0	--	--	4.24	-1.78	2.53	--	--	.0	0	----	---	--	---	--	--	--	--	---	-
San Juan, P.R.	15	1015.5	1017.6	87	74	80.3	---	88	9+	70	18+	0	0	72	77	3.51	----	1.66	18	2	.0	0	11.0	ENE	34	E	21	10	14	7	5.0	8
ALASKA																																
Anchorage	92	1013.5	1018.5	64	49	56.3	-1.0	80	15	39	5	3	0	47	69	3.07	1.52	2.06	13	2	.0	0	5.8	S	*23	S	4+	4	6	21	7.8	3
Annette	110	1016.9	1020.8	63	50	56.5	-.3	81	13	45	2	3	0	51	82	5.28	-.31	2.36	13	1	.0	0	8.2	SSE	*29	SSE	21	3	8	20	7.7	-
Barrow	22	1012.2	1012.6	46	32	38.9	-.8	66	10	26	19+	0	21	35	90	1.43	.60	.29	9	0	T	T	12.1	SW	32	S	4	5	8	18	7.5	-
Bethel	10	1014.2	1015.5	64	49	56.5	2.0	84	13	41	9	8	0	50	81	1.76	-.53	.30	16	1	.0	0	10.0	SSW	*29	SSE	26+	3	6	22	8.1	-
Cold Bay	90	1013.2	1017.1	55	45	49.8	-.2	67	29	39	6+	0	0	47	91	2.51	.37	.47	18	0	.0	0	16.9	SSE	*43	SSE	26	0	3	28	9.4	-
Cordova	40	1017.6	1019.3	61	45	52.8	-.5	80	14	40	10+	5	0	48	85	4.07	-2.37	2.78	14	0	.0	0	4.0	E	*20	WNW	11	5	2	24	8.0	-
Fairbanks	436	998.6	1015.5	73	49	61.0	.1	86	13	40	22	20	0	51	70	1.41	-.51	.58	6	0	.0	0	7.7	SW	*21	NE	21+	3	11	17	7.2	-
Juneau	15	1018.3	1019.1	66	47	56.3	1.6	84	14	38	9	10	0	48	74	2.96	-1.69	.69	13	0	.0	0	8.2	N	29	SE	20	7	3	21	7.6	3
King Salmon	44	1014.9	1016.8	65	46	55.2	.6	81	14	36	21	10	0	48	78	2.05	-.77	.81	11	1	.0	0	9.7	SSW	*33	NE	5	1	7	23	8.2	-
Kotzebue	10	1014.6	1014.9	59	45	52.0	-.6	68	18+	37	3	0	0	47	82	.85	-.68	.57	5	0	.0	0	10.8	WNW	*37	SE	26	6	11	14	6.8	-
McGrath	334	1003.7	1016.1	69	49	59.1	.4	85	13+	41	23	14	0	48	66	1.45	-.87	.37	14	0	.0	0	6.1	S	*21	S	18+	3	7	21	7.9	-
Nome	13	1015.2	1015.6	54	45	49.5	-.1	63	21	38	2	0	0	46	87	2.25	-.21	1.36	11	1	.0	0	8.1	WSW	32	SE	26	2	3	26	8.6	3
Northway	1713	953.6	1016.6	67	47	56.8	-2.4	82	14+	34	22	13	0	--	--	2.40	-.49	.54	14	7	.0	0	----	---	--	---	--	4	7	20	7.4	-
St. Paul Island	22	1015.2	1016.6	48	40	43.8	-2.1	58	14	31	16	0	2	43	96	4.38	1.95	1.33	18	0	.0	0	----	---	--	---	--	2	5	24	8.6	-
Yakutat	28	1019.0	1019.9	60	47	53.7	1.0	81	14	36	9	3	0	49	86	5.81	-2.82	2.09	15	0	.0	0	7.2	ESE	*29	SE	21	4	5	22	8.1	-

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates.

% Peak gust.

a Maximum hourly average.

# Number of days maximum 70° or above for Alaskan stations.

ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.

HEATING DEGREE DAYS

Table 3

(Base 65°F.)

JULY 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	0	0	0
Mobile	0	0	0
Montgomery	0	0	0
ARIZONA			
Flagstaff	51	51	49
Phoenix (U)	0	0	0
Phoenix	0	0	0
Prescott	0	0	0
Tucson	0	0	0
Winslow	0	0	0
Yuma	0	0	0
ARKANSAS			
Ft. Smith	0	0	0
Little Rock	0	0	0
Texarkana	0	0	0
CALIFORNIA			
Bakersfield	0	0	0
Bishop	0	0	0
Blue Canyon	43	43	36
Burbank	0	0	0
Eureka (U)	279	279	267
Fresno	0	0	0
Los Angeles (U)	0	0	0
Los Angeles	0	0	31
Mt. Shasta (R)	31	31	37
Oakland	83	83	84
Red Bluff	0	0	0
Sacramento (U)	2	2	0
Sacramento	2	2	0
Sandberg (R)	22	22	0
San Diego	0	0	11
San Francisco (U)	238	238	189
San Francisco	105	105	144
San Jose	9	9	7
Santa Maria	126	126	98
COLORADO			
Alamosa	38	38	64
Colorado Springs	2	2	8
Denver	1	1	5
Grand Junction	0	0	0
Pueblo	0	0	0
CONNECTICUT			
Bridgeport	12	12	0
Hartford	20	20	0
New Haven	18	18	0
DELAWARE			
Wilmington	1	1	0
DIST. OF COLUMBIA			
Washington (U)	0	0	0
Washington	0	0	0
FLORIDA			
Apalachicola (U)	0	0	0
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	0	0	0
Key West (U)	0	0	0
Miami (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	0	0	0
Tallahassee	0	0	0
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	0	0	0
Atlanta	0	0	0
Augusta	0	0	0
Columbus	0	0	0
Macon	0	0	0
Rome	0	0	0
Savannah	0	0	0
IDAHO			
Boise	11	11	0
Lewiston	5	5	0
Pocatello	7	7	0
ILLINOIS			
Cairo (U)	0	0	0
Chicago (U)	2	2	
Chicago	3	3	0
Chicago University	3	3	
Moline	0	0	0
Peoria	0	0	0
Springfield	0	0	0
INDIANA			
Evansville	0	0	0
Ft. Wayne	0	0	0
Indianapolis	0	0	0
South Bend	2	2	5
IOWA			
Burlington	0	0	0
Des Moines	0	0	5
Dubuque	3	3	8
Keokuk (U)	0	0	
Sioux City	0	0	8
KANSAS			
Concordia (U)	0	0	0
Dodge City	0	0	0
Goodland	0	0	0
Topeka (U)	0	0	0
Topeka	0	0	0
Wichita	0	0	0
KENTUCKY			
Lexington	0	0	0
Louisville	0	0	0
Pikeville (U)	0	0	
LOUISIANA			
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (U)	0	0	0
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	125	125	85
Greenville (U)	116	116	
Portland	62	62	15
MARYLAND			
Baltimore (U)	0	0	0
Baltimore	0	0	0
Frederick	1	1	0
MASSACHUSETTS			
Blue Hill Obs. (R)	35	35	
Boston	15	15	0
Nantucket	21	21	22
Pittsfield	67	67	25
MICHIGAN			
Alpena (U)	71	71	50
Detroit	0	0	0
Detroit (Willow Run)	3	3	0
East Lansing (U)	9	9	
Escanaba (U)	68	68	62
Grand Rapids	14	14	14
Marquette (U)	161	161	69
Muskegon	22	22	26
S. Ste. Marie	131	131	109
MINNESOTA			
Duluth (U)	153	153	66
Duluth	122	122	56
Internat. Falls	114	114	70
Minneapolis	9	9	8
Rochester	9	9	24
St. Cloud	27	27	32
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	0	0	0
Kansas City	0	0	0
St. Joseph	0	0	0
St. Louis (U)	0	0	0
St. Louis	0	0	0
Springfield	0	0	0
MONTANA			
Billings	7	7	8
Glasgow	34	34	14
Great Falls	40	40	24
Havre (U)	20	20	20
Helena	49	49	36
Kalispell	61	61	47
Miles City	1	1	6
Missoula	54	54	22
NEBRASKA			
Grand Island	0	0	0
Lincoln (U)	0	0	0
Norfolk	0	0	0
North Platte	0	0	7
Omaha	0	0	0
Scottsbluff	0	0	0
Valentine (U)	0	0	11
NEVADA			
Elko	23	23	6
Ely	36	36	22
Las Vegas	0	0	0
Reno	20	20	27
Tonopah	2	2	0
Winnemucca	9	9	0
NEW HAMPSHIRE			
Concord	50	50	11
Mt. Washington Obs.	615	615	
NEW JERSEY			
Atlantic City (U)	1	1	0
Newark	9	9	0
Trenton (U)	8	8	0
NEW MEXICO			
Albuquerque	0	0	0
Clayton	0	0	0
Roswell	0	0	0
NEW YORK			
Albany	22	22	0
Binghamton	51	51	16
Buffalo	12	12	16
New York (U)	9	9	0
New York	8	8	0
Rochester	19	19	9
Schenectady	14	14	
Syracuse	21	21	0
NORTH CAROLINA			
Asheville (U)	0	0	0
Asheville	0	0	
Charlotte	0	0	0
Greensboro	0	0	0
Hatteras (R)	0	0	0
Raleigh	0	0	0
Wilmington	0	0	0
Winston-Salem	0	0	0
NORTH DAKOTA			
Bismarck	17	17	29
Devils Lake (U)	48	48	47
Fargo	14	14	25
Grand Forks	35	35	
Williston (U)	40	40	29
OHIO			
Akron	5	5	0
Cincinnati (U)	0	0	0
Cincinnati	0	0	0
Cleveland	4	4	0
Columbus	0	0	0
Dayton	0	0	0
Sandusky (U)	0	0	0
Toledo	1	1	0
Youngstown	8	8	0
OKLAHOMA			
Oklahoma City	0	0	0
Tulsa	0	0	0
OREGON			
Astoria	138	138	138
Burns (U)	27	27	10
Eugene	46	46	33
Meacham	74	74	88
Medford	9	9	0
Pendleton	1	1	0
Portland (U)	17	17	13
Portland	22	22	25
Roseburg	30	30	
Salem	33	33	21
Sexton Summit (R)	97	97	88
PENNSYLVANIA			
Allentown	12	12	0
Harrisburg	7	7	0
Philadelphia (U)	4	4	0
Philadelphia	2	2	0
Pittsburgh (U)	0	0	0
Pittsburgh	4	4	0
Reading (U)	6	6	0
Scranton	28	28	0
Williamsport	10	10	0
RHODE ISLAND			
Block Island	15	15	6
Providence	13	13	0
SOUTH CAROLINA			
Charleston (U)	0	0	0
Charleston	0	0	0
Columbia	0	0	0
Florence	0	0	0
Greenville	0	0	0
Spartanburg	0	0	0
SOUTH DAKOTA			
Huron	1	1	10
Pierre	0	0	
Rapid City	1	1	32
Sioux Falls	0	0	16
TENNESSEE			
Bristol	0	0	0
Chattanooga	0	0	0
Knoxville	0	0	0
Memphis	0	0	0
Nashville	0	0	0
TEXAS			
Abilene	0	0	0
Amarillo	0	0	0
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio	0	0	0
El Paso	0	0	0
Ft. Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	0	0	0
Midland	0	0	
Port Arthur	0	0	0
TEXAS (Cont'd.)			
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Witchita Falls	0	0	0
UTAH			
Milford	0	0	0
Salt Lake City	0	0	0
VERMONT			
Burlington	41	41	19
VIRGINIA			
Lynchburg	0	0	0
Norfolk	0	0	0
Richmond	0	0	0
Roanoke	0	0	0
WASHINGTON			
Olympia	80	80	91
Seattle (U)	32	32	49
Seattle-Tacoma	70	70	75
Spokane	17	17	17
Stampede Pass (R)	239	239	251
Tatoosh Island (R)	300	300	295
Walla Walla (U)	0	0	0
Yakima	2	2	0
WEST VIRGINIA			
Charleston	0	0	0
Elkins	11	11	8
Huntington (U)	0	0	0
Parkersburg (U)	0	0	0
WISCONSIN			
Green Bay	46	46	32
La Crosse	4	4	11
Madison (U)	5	5	10
Madison	10	10	13
Milwaukee	27	27	20
WYOMING			
Casper	3	3	13
Cheyenne	19	19	33
Lander	9	9	7
Sheridan	7	7	27
ALASKA			
Anchorage	265	265	239
Annette	259	259	262
Barrow	801	801	784
Bethel	263	263	326
Cold Bay	463	463	
Cordova	370	370	363
Fairbanks	135	135	149
Juneau	263	263	319
King Salmon	296	296	
Kotzebue	396	396	384
McGrath	187	187	206
Nome	474	474	477
Northway	252	252	186
St. Paul	648	648	592
Yakutat	346	346	381

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

JULY 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEBRASKA Wisner (3 miles southeast of), Cuming County	1	2 a.m.			0	0	2	1	Tornado (suspected)	Corn crib demolished; other nearby buildings undamaged.
NEBRASKA Furnas County (northeastern portion)	1	3-4 a.m.	15	*2-1/2			3	5	Hail	Hailstones 1 inch in diameter.
IOWA Monona and Woodbury Counties to Winneshiek County	1	3-8 a.m.			0	0	5	5	Tornado, wind, rain, hail, and electrical	Thunderstorm ruined crops and damaged buildings. Some witnesses reported rugs and linoleum bulged upward, and 2 reported seeing funnel cloud aloft west of town of Sloan, and 1 person reported seeing funnel cloud aloft in northeastern Iowa. Storm moved northeastward.
IOWA Promise City and Plano, Appanoose and Wayne Counties	1	4:30 a.m.					4	1	Electrical	Burned 1 home to ground and damaged another.
NEBRASKA Atlanta (southwest of) Phelps County	1	Early a.m.	1	Narrow	0	0	3	3	Hail and tornado	Barn and chickenhouse scattered over wide area, other nearby buildings undamaged. Storm moved northeastward.
MINNESOTA Hollandale, Freeborn County	1	6:45 a.m.			2	1			Electrical	3 farm workers struck by lightning in open field. Storm moved eastward.
WISCONSIN Most of State	1	8 a.m.-noon			6	2	5	4	Tornadoes, waterspout, wind, rain, hail, and electrical	Squall line entered west side of State about 8 a.m., moving over Lake Michigan about noon. Most intense activity with squall line occurred in east-central where funnels reported at De Pere, Bellevue, and Brussels. Meteorologist in Charge at Green Bay reported apparent tornado at Brussels. Timber from demolished barn south of house driven into east side of house. In Brussels area 15 barns demolished and numerous other buildings damaged or destroyed. 1 casualty occurred in Five Lakes, Washington County, and 3 in Lake Winnebago where 7-foot waves occurred and waterspouts reported by North Central Airline Pilots. 1 person killed and 2 injured when airplane was flipped over in landing attempt. Lightning killed 1 person. Some other areas reporting losses from squall line activity included Tomah, Coulee, Elroy, Hillsboro, Holmen, Two Rivers, La Crosse, and Wisconsin Rapids eastward through Appleton, Green Bay, and Door County. Hail 3 inches in diameter reported at Rosiere. Winds to 74 m.p.h., in gusts recorded at Appleton and La Crosse. Winds 55 to 60 m.p.h., at 8 a.m. Excessive rainfall in some areas caused localized flooding. Storm moved eastward.
MICHIGAN (Lower) Northern and central portions	1	1 p.m.					6	5	Wind and "seiche wave"	Squall line first struck west-central and northwest portions and swept eastward, causing heavy property damage in many areas. Wind speeds reached at least 85 m.p.h. Hundreds of trees uprooted and some orchards heavily damaged. Power- and telephone lines downed in many counties. "Seiche wave" damaged lakeshore property near Ludington. Many persons narrowly escaped injury in this storm. No damage reported in extreme northern tip of Lower Michigan.
MICHIGAN Hubbard Lake, Alcona County	1	2 p.m.	1	Narrow	0	0	3	1	Waterspout	Waterspout formed on Hubbard Lake, moved northeastward, lifted as it hit shore, but destroyed drive-in movie screen, moved docks, and uprooted trees.
MICHIGAN Sparta (near), Kent County	1	Afternoon			0	0	3	1	Tornado	Funnel aloft dipped briefly to surface at Camp Lake, tore roof off home, and uprooted a few trees.
MISSOURI Livingston, and Linn Counties	1	2-2:30 p.m.						2	Hail, wind, and rain	3/4-inch hail. 2.70 inches of rain in 45 minutes. Much damage to powerlines, buildings, and trees.
ALABAMA Athens, Limestone County	1	2:30 p.m.				1			Electrical	Man injured by lightning while attending soft-drink booth at sports-car races.
NORTH CAROLINA Gaston County	1	Afternoon				1			Electrical	Boy under tree injured by lightning.
KANSAS Lyon, Osage, and Shawnee Counties	1	4:30-5 p.m.							Wind, rain, hail, and electrical	Storm centered near Allen, Lyon County, where buildings damaged and TV aerials, trees, and powerlines broken. High winds caused minor damage over northwestern Osage and southwestern Shawnee Counties. Storm moved northeastward.
KANSAS South-central portion	1	5:25-8 p.m.			0	0			Tornadoes, wind, hail, rain, and electrical	Series of thunderstorms from Marion County southwestward to Barber County left local damage from 2 tornadoes, hail, and severe winds. Tornado at

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										5:25 p.m., 3 miles northeast of Andale, Sedgewick County, where large barn demolished; funnel observed by neighbors; damage estimated at $5,300. About 6 p.m., another tornado followed path from 4 miles southwest of Florence, Marion County, to 4 miles northeast of town, passing immediately north of Florence; some farm buildings damaged, trees broken, and stacks of baled hay scattered; most of path over pastureland; damage estimated $500. Severe winds caused tree damage near Newton about 6 p.m.; at Hutchison winds estimated at 74 m.p.h., at 8 p.m. 2 storms at Medicine Lodge, Barber County, at 5:30 and 8:45 p.m., demolished outbuildings south of town, and powerlines, trees, and TV aerials damaged in town by later storm. Torrential rains and some hail caused additional local damage at several other localities. Lightning struck barn 7-1/2 miles west of Newton; barn and contents burned.
OKLAHOMA Harmon area, Ellis County	1	6-6:30 p.m.	3	*2			2	3	Hail, wind, and rain	Hailstones up to 2 inches in diameter resulted in complete destruction of crops over 6-square mile area 8 miles south of Harmon. Many large trees uprooted by strong wind. Storm moved northeastward.
OKLAHOMA Leedey, Dewey County	1	6:30 p.m.			0	1		1	Tornado (suspected), wind, rain, hail, and electrical	Severe wind lifted roof on home, requiring extensive repairs. Many TV antennas blown down and utility lines and outbuildings damaged. Man slightly injured when wind blew storm-cellar door against his arm. Storm moved northeastward.
OKLAHOMA Burlington, Alfalfa County	1	6:45 p.m.	Several	880	0	0		1	Tornado (suspected), wind, rain, and hail	Several buildings destroyed or damaged, doors torn off, TV antennas downed, utility lines damaged, and trees broken or uprooted. Storm moved southwestward.
NEW YORK Glenora Point, Yates County	1	8:45 p.m.	1/2	600	0	0		1	Tornado and waterspout	Small tornado, advancing from west over Glenora Point, became waterspout when it moved out into Seneca Lake. Trees blown down and roofs and chimneys damaged. Monetary value of losses unestimated.
NEW YORK Steuben County	1	8:45 p.m.					5	5	Wind, rain, and hail	Hailstones 1/4 to 1/2 inch over area 1/2 by 3 miles, with heaviest damage in vicinity of Pulteney. Vineyards badly damaged and wheat fields beaten to ground. Some fields eroded by heavy rain and highways washed out. A number of cottages on shores of Keuka Lake flooded. $100,000 hail damage to crops, and $50,000 wind damage to crops. Wind estimated at 70 m.p.h. Storm moved east-southeastward.
NEBRASKA Stanton County (southwestern portion)	1	9-10 p.m.	10	*2-3			1	4	Hail	Storm moved southeastward.
IOWA Louisa County	1	9:45 p.m.					4	1	Electrical	Barn and contents burned.
NEW YORK Geneva, Ontario County	1	P.m.				6	4	1	Wind	High winds during thunderstorm, blew down circus tent. 6 persons seriously injured by falling tent and tentpoles.
KENTUCKY Whitley County	1				1				Electrical	Fatality result of being struck by lightning.
NEW YORK Delta Lake, Oneida County	1				3				Wind	High winds from thunderstorm caused drowning of 3 men.
NEW YORK Lake Ontario	1				4				Wind	Drownings resulted from thunderstorm squalls.
	1									Minor storms also reported at Tuscaloosa, Ala.; in Cabarrus County, N.C.; in Batesburg and Lexington Counties, S.C.; in Somerset and Waldo Counties, Maine; and in Coolidge community, Tenn.
PENNSYLVANIA Entire State	1-2					4	5	4	Electrical, rain, wind, and hail	Squall line which crossed State in 30 hours set off severe thunderstorms accompanied by strong winds, heavy rains, and in some sections, hail. Strong winds and hail caused moderate damage to grapes and cherries in Erie County, while in other sections heavy rains and flood waters were major source of crop damage. Relatively little damage occurred to private dwellings and other buildings; however, storm took its usual toll of trees, utility lines, and barns. Warehouse at Mt. Carmel struck by lightning and set afire, resulting in almost total destruction of structure and its contents. In Montoursville 4 persons burned when bolt of lightning hit garage in which they were working.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEBRASKA Thurston County (southern half)	2	Midnight-3 a.m.	40	*6-8			4	4	Hail and wind	Hailstones up to 1 inch in diameter. Property damage by wind, crop by hail.
MISSOURI Excelsior Springs, (2 miles north of), Clay County	2	2:30-2:50 p.m.			0	0			Tornado, rain, wind, hail, and electrical	Much damage to farm buildings. 1.50 to 2.00 inches of rain in 20 minutes. Storm moved northwestward.
KANSAS Between Manhattan and Wamego, Pottawatomie County	2	2:30-3 p.m.	12	*2			4	4	Hail and rain	Hailstones averaged 2 inches in diameter, with larger stones at center of storm near St. George, followed by rain of approximately 2 inches near St. George, and from 0.65 to 1.00 inch at edges. Crops severely damaged near St. George and roofs in town battered. Some cornfields suffered a 50 percent loss. Storm moved southeastward.
MISSOURI St. Joseph (5 miles north of), Buchanan County	2	3-4 p.m.							Hail, rain, wind, and electrical	1-1/2 inch hail. Over 2 inches of rain in 30 minutes. Storm moved eastward.
MISSOURI Norton, Saline County	2	3:30 p.m.	8	*2					Hail	Heavy damage to corn.
OKLAHOMA Mangum area, Greer County	2	3:30 p.m.	3	*2			4	4	Wind, rain, and hail	Severe thunderstorm with hard wind and heavy hail caused widespread damage over 6-square-mile area between Duke and Mangum. Houses, barns, and outbuildings destroyed or damaged. Hail stripped cotton of all leaves. Storm moved northwestward.
OKLAHOMA Eldorado (5 miles southwest of), Jackson County	2	3:30 p.m.	1	50	0	0	2	1	Tornado, wind, rain, and electrical	Small tornado hit farm. Dairy barn destroyed and 2 windows and a door exploded out of house. Bark twisted off fence posts.
OKLAHOMA Hitchcock area, Blaine County	2	3:30 p.m.	Short		0	0		1	Tornado, wind, rain, hail, and electrical	What appeared to be twister struck farm near Hitchcock, destroyed 5 farm buildings, damaged house, and twisted off trees. Loud roar and buildings burst outward indicated tornado. Witnesses said funnel dipped momentarily and dissipated in clouds. Storm moved northeastward.
MISSOURI Bogard, Carroll County	2	3:30-4 p.m.	2						Hail, wind, and rain	Hail size of golf balls. Small pigs and chickens killed by hail. Severe damage to corn, oats, and gardens.
MONTANA Hammond-Albion area, Carter County	2	4 p.m.	20	*2			4	1	Rain and hail	Hailstones 1/2 inch in diameter. Flash flooding drowned 700 sheep. Crops had previously been severely damaged by drought. Storm moved eastward.
KANSAS Douglas and Osage Counties	2	4-4:15 p.m.	4	*1	0	0	3	3	Tornado (suspected), wind, and rain	Funnel reported north of Baldwin and west of Overbrook. A few tree limbs downed in area. About 3/4 inch of rain accompanied wind. Storm moved eastward.
NEBRASKA Scotts Bluff County (eastern portion)	2	4:30-6 p.m.	12	*1-1/4			5	6	Hail and rain	Hailstones 1/2 to 1 inch in diameter. Heavy damage to crops by hail, and to roads, bridges, and irrigation ditches by flash flooding.
COLORADO Montrose and Delta Counties	2	Afternoon							Electrical, rain, wind, and hail	Electrical and hailstorm went through eastern Montrose and Delta Counties damaging fruit and field crops. It was more severe in Surface Creek Valley near Cedaredge, where 7 head of cattle killed by lightning, and some lightning damage to chimney and trees reported. Storm widespread, but hail damage "spotty."
IDAHO Bingham and Bonneville Counties	2	Afternoon							Hail, rain, and electrical	Numerous insurance claims filed for hail damage. Extent and amount of damage not yet determined. Lightning hit house near Shelley, starting small fire.
SOUTH CAROLINA Richland, Anderson, Greenville, and Newberry Counties	2	Afternoon					4	4	Hail, wind, rain, and electrical	Series of severe local thunderstorms, with considerable minor damage in Columbia, Iva, and Greenville.
MISSOURI Clarks Fork, Cooper County	2	Late afternoon				1			Wind, rain, and hail	Many trees and farm buildings damaged.
MISSOURI Independence, Jackson County	2	Late afternoon							Electrical, wind, rain, and hail	5 buildings hit by lightning.
COLORADO East-central portion	2	Afternoon-evening							Rain, hail, wind, and electrical	Storms extended from Pikes Peak area, moving northeastward to Weld and Morgan Counties. Northern part of Colorado Springs battered by heavy rain, hail, and wind, while southern part of city received very light amount. 3 to 4 inches of rain

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
COLORADO (Cont'd)										fell north of Calhan, putting Big Sandy Creek out of its banks. Bridges, roads, hay, and livestock washed away along creek in Elbert County. 6 inches of hail reported with this storm in places, which beat crops into ground. Hail- and windstorm went across Weld County damaging grain and beets. Beets expected to make a come back. Rain shower with hail beat up cantaloupes, onions, beets, and grains at Las Animas in Bent County.
KANSAS Neosho Falls area, Woodson County	2	Afternoon-evening							Electrical, wind and rain	Lightning struck house in town, damaging upstairs. Wind broke windows and damaged buildings at farm southeast of town.
VIRGINIA Roanoke	2	5-6 p.m.					4		Wind, rain, and hail	Damage by winds up to 50 m.p.h. Several hundred homes without electricity and more than 400 telephone outages.
MISSOURI Middlegrove (1 mile east of), Monroe County	2	5:30 p.m.	1-1/2	100	0	0			Tornado, rain, wind, hail, and electrical	Farm buildings destroyed. 2.50 inches rain in less than 1 hour. Storm moved eastward.
FLORIDA Lakeland, Polk County	2	6 p.m.			0	0			Tornadoes	3 funnel clouds sighted, 1 touched ground over uninhabited area.
SOUTH DAKOTA Northwestern corner	2	6-9 p.m.					3	3	Rain, hail, and electrical	30 sheep killed, other animals wounded. Estimated 4-inch rains caused local flooding South Grand River near Ralph and Indian Creek north of Belle Fourche.
OKLAHOMA El Reno area, Canadian County	2	6:37 p.m.	17	400	1	0	4	1	Tornado (suspected), wind, rain, and electrical	Funnel-like cloud unroofed barn 15 miles southwest of El Reno. Lightning struck and killed woman working in cotton field. Strong wind, calm, then severe damaging wind believed to be tornado struck 1-1/2 miles east of El Reno. Considerable damage resulted to buildings, and semitrailer truck and housetrailer overturned. Sacks of cement lifted over fence and glass jars lifted over wall. 10,000-pound granary picked up and carried away. Storm moved northeastward.
TEXAS Rankin, Upton County	2	7:50 p.m.	2	*1			3		Wind	Estimated 80-m.p.h., wind destroyed small house and several garages. About 50 TV antennas and several electric lines downed . Storm moved southwestward.
MISSOURI Warrensburg, Johnson County	2	8 p.m.							Electrical, wind and rain	Lightning set farm buildings and gas station afire.
OKLAHOMA Gage (50 miles northwest of), Beaver County	2	11 p.m.			0	0			Tornado	Pilot reported sighting funnel; evidently remained aloft.
MISSOURI Tipton and Sedalia areas, Pettis and Moniteau Counties	2	Evening							Rain, wind, hail, and electrical	Heavy rains up to 5 inches at Tipton. Much local flooding. Trees and powerlines downed. House set afire by lightning.
MISSOURI Jefferson City and Tipton areas, Moniteau and Cole Counties	2	During night							Rain and electrical	5 inches of rain fell at Tipton. Lightning hit farm home.
INDIANA Greens Fork, Wayne County	2					1	3	1	Electrical and rain	Severe thunderstorm caused heavy rain, resulting in flooded basements. Lightning injured farmer as he unhooked hay baler from tractor.
WASHINGTON Growmore area, Yakima County	2						1	4	Hail	Fruit damaged by hail.
	2									Minor storms also reported at De Kalb and Hazel Dell, Mo.; at Binger and Oklahoma City, Okla.; at Shenandoah, Va.; and at Malott and in Adams, Garfield, and Whitman Counties, Wash.
MISSOURI Osage (5 miles north of), Miller County	3	Early morning			1	3			Electrical	Farm building destroyed.
TEXAS Gray County	3	3 p.m.					5		Electrical	Lightning struck 2 oil-storage tanks, destroying them and 1 other as result of fire. Lightning also knocked Radio Station KPDN off air and damaged clinic at Pampa.
MISSOURI Boonville (5 miles south of), Cooper County	3	4 p.m.			1				Electrical	Boy and horse killed by lightning.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NORTH DAKOTA Bismarck (50 miles south of), Sioux County	3	4:10 p.m.			0	0			Tornado	Funnel touched ground and then dissipated.
SOUTH CAROLINA Horry, Charleston, and Spartanburg Counties	3	Afternoon					3	5	Hail, wind, and rain	Wind and hail damage to cotton and tobacco in Maple, Good Hope, and Adrian communities, Horry County; hail damage in north Charleston area, Charleston County; minor wind damage in Reidsville, Spartanburg County.
KANSAS Central portion	3	Afternoon-evening							Electrical, wind, rain, and hail	Storm throughout central counties. Lightning strikes at El Dorado, Galva, Peabody, and Salina caused property damage. Wind damage to trees, antennas, and power- and telephone lines. Heavy rains accompanied storm, also a little hail reported southeast of Wichita.
NORTH CAROLINA Catawba, Columbus, Hertford, Mecklenburg, Nash, and Richmond Counties	3	Afternoon-evening					4	4	Electrical, rain, wind, and hail	Widespread thunderstorm activity caused scattered damage. Hail damage to crops. Wind damage to roofs $1,000; rain and flooding of basements and storage $5,000; lightning, fires, and structural damage $14,000.
MISSOURI Columbia, Boone County	3	5-6 p.m.						1	Rain, electrical, and wind	Wind hit gusts of 60 m.p.h. 0.97 inch of rain in 1/2 hour. Minor flooding occurred. Lightning hit horse.
SOUTH DAKOTA Haakon and Mellette Counties	3	5:40-8:30 p.m.			0	0	5	5	Tornadoes and hail	Tornadoes in open country 18 miles northeast and 35 miles southeast of Philip. Damage caused by hail at Midland. Storm moved southeastward.
NORTH CAROLINA Richmond, Franklin, Johnston, and Wayne Counties	3	6 p.m.					4	5	Hail	6-square miles damaged, mostly tobacco.
KANSAS Pratt County	3	6-8 p.m.							Wind, electrical, rain, and hail	Severe wind and lightning preceded rain and hail. Barn destroyed by lightning 2 miles north of Coats. Hail caused no reported damage. Estimated 80-m.p.h. winds caused local damage at airport in Pratt. In Iuka wind downed tree limbs and TV aerials and rain, described as "falling horizontally" due to wind, totaled 0.80 inch. Storm moved northeastward.
NEBRASKA Lisco (northeast of), Garden County	3	6-9 p.m.	8	*8			5	4	Hail	Hailstones up to 2 inches in diameter. Storm moved eastward.
VIRGINIA Farmville, Prince Edward County	3	6:15 p.m.							Wind and rain	Estimated winds up to 50 m.p.h. 1.78 inches rainfall. Telephone disruptions to numerous homes; power outages minor.
MISSOURI Golden City, Barton County	3	9-10 p.m.			0	0			Tornado, wind, rain, hail, and electrical	Funnel cloud did not touch ground; moved northeastward.
FLORIDA Brooksville, Hernando County	3	P.m.			1				Electrical	Lightning set off dynamite charge prematurely, killing 1 workman.
KANSAS East-central counties	3	P.m.						1	Wind, rain, and electrical	Good rains in area. Wind damage around Iola to barns, trees, power- and telephone lines.
COLORADO Pueblo, Elbert, and El Paso Counties	3	Evening					2		Rain, electrical and hail	Pueblo hit by severe rain- and hailstorm. Rain came down so fast that streets flooded and many basements filled with water. Pavements washed out and many cars stalled. Hail about the size of marbles, so hail damage light. Vicinity of Calhan received another heavy shower which flooded Big Sandy Creek again, and added more damage. Total dollars and cents damage from the 2 floods of 2d and 3d, could well reach over a quarter of a million dollars.
MISSOURI Steelville, Crawford County	3	Late evening							Rain, electrical and wind	Heavy rain accompanied thunderstorm. Heavy damage to telephone exchange.
MISSOURI Carrington, Calloway County	3	Night							Electrical	Barn and 50 tons of hay burned.
TEXAS Medina, Frio, La Salle, Zavala, Uvalde, Dimmit, Bandera, Webb, and Bexar Counties	3								Rain	Heavy rainfall amounts included 4.19 inches at Sabinal, 3.50 inches at Batesville, 2.50 inches at Bandera, 2.30 inches at Encinal, and 2.42 inches at Carrizo Springs. Some minor flooding in Nueces River Basin.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
VIRGINIA Fauquier and Loudoun Counties	3								Wind, rain, and electrical	Local power failures, minor lightning damage at Warrenton. Nearly completed brick house blown down near Leesburg.
	3									Minor storms also reported at Westminster, Md.; at Hume, Mo.; at Marsh, Mont.; in southwestern Chase County, Nebr.; at Ashley, Okla.; and at Oak Ridge, Tenn.
	3-4									Minor storm reported at Halifax, Va.
MARYLAND Myrtle Point (near California), St.Marys County	4	12:45 a.m.					4	1	Electrical	Lightning believed to have caused destruction of a barn in which bakery equipment was stored.
WYOMING Albin (8 miles northeast of), Laramie County	4	2 p.m.	4		0	0			Tornado	Storm formed about 1 mile inside Wyoming and moved northeastward into Nebraska.
NEBRASKA Cheyenne County (east-central portion)	4	2:20 p.m.		Narrow	0	0			Tornado	Occasionally touched ground.
NEX MEXICO Arch (vicinity of), Roosevelt County	4	2:30 p.m.	5	880			1	4	Hail	Stones reported up to 1-1/2 inches in diameter. Storm moved northeastward.
MARYLAND Unionville, Frederick County	4	2:47-3:37 p.m.						2	Rain	Cloudburst which dumped total of 1.23 inches in estimated period of 1 minute, which if not proved unreliable will set a new world's record for 1-minute rainfall; a total of 2.84 inches in 50-minute period caused flash flood which filled many basements.
ALABAMA Chilton County	4	3 p.m.					4	4	Hail and wind	Property damage all by wind. Crop damage included $8,000 by wind and $2,000 by hail. Peach crop most affected by wind. Storm originated over Clanton and moved southeastward.
TENNESSEE Mt. Pleasant, Maury County	4	2:35-3:30 p.m.	4	1,000-1,500					Wind and hail	Wind recorder measured 61 m.p.h., with trees uprooted and buildings unroofed. Corn and tobacco damaged by wind and some hail. Water damage to buildings and electric motors. Storm moved northwestward.
NEBRASKA Big Springs (near), Deuel County	4	3:25 p.m.	Short	Narrow	0	0	3	1	Tornado	Reported by Ground Observer Corps.
TEXAS Anson (7 miles north of), Jones County	4	3:50 p.m.			0	0			Tornado	Texas Highway Patrol reported tornado touching ground; no damage.
TENNESSEE Tracy City, Grundy County	4	4:30-6 p.m.					5	4	Wind, rain, and hail	Total deposit of 3 inches of rain in center of town. Gardens destroyed, leaves and fruit stripped from trees, windows and roofs of houses and business places damaged. Some flooding on account of clogged drain pipes. Power utilities damaged.
NEBRASKA Grand Island (10 miles north of), Hall County	4	4:40 p.m.			0	0			Tornadoes	2 funnels reported; did not reach ground.
ARIZONA Tucson, Pima County	4	Afternoon					3	1	Dust devil	Damage to plate-glass windows.
NEBRASKA Banner County (western portion)	4	Afternoon	Short	Narrow	0	0			Tornado	Funnel observed, touched ground once in sparsely settled country.
SOUTH DAKOTA	4	Afternoon						5	Hail	Heaviest falls in Miner, Minnehaha, Lake, and McPherson Counties.
TEXAS Lamb, Hale, and Floyd Counties	4	Afternoon							Hail and wind	Spotted severe hail damage over large area centered at Hale Center. Some wind damage.
TEXAS Canyon (near), Randall County	4	5 p.m.	20	880	0	0	3	3	Tornado	Funnel cloud moving northeastward touched ground for short time.
MARYLAND Charles County	4	6:54 p.m.			0	0			Tornado	United Airline Pilot flying over Charlotte Hall reported funnel cloud not touching ground in direction of Quantico, Va. Radar scopes indicated large storm area about 90 miles in diameter during afternoon.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEBRASKA Neligh (west of), Antelope County	4	6:58 p.m.	Short	Narrow	0	0			Tornado	Reported by State Highway Patrol. Storm moved southeastward.
KANSAS Southeastern portion	4	Afternoon-evening					4	4	Hail, electrical, wind, and rain	First evidence of storm was in Greenwood County about 4 p.m., when hail fell in several areas, but most severe in Janesville Township. Lightning and wind did minor damage at Chanute with hail near Erie. Winds of 60 to 70 m.p.h., about 5:30 p.m., in Sumner County caused some damage. Hail reported 8 miles northwest of Wellington. Chautauqua and Montgomery Counties both experienced high winds and severe storm conditions from 7 to 9 p.m., with a number of buildings struck by lightning. 1 house was complete loss, estimated at $8,000. Numerous July 4 celebrations abruptly terminated by storm. Trees uprooted, several store fronts blown in, and movie screen damaged. About 6:30 p.m., hail, wind, and rain hit, with considerable resulting damage to crops, glass, trees, and power- and communication lines at and near Girard. Hail caused $5,000 loss to crops and $12,000 damage to property. This storm covered path 3 miles long and 2 miles wide beginning immediately northeast of Girard. Hail in each of above storms attained golf-ball or hen-egg size. Storm moved southeastward.
NORTH CAROLINA Cabarrus, Caldwell, and Rowan Counties	4	Afternoon-evening				2	4		Electrical and rain	2 homes and barn burned by lightning. 2 men injured in accident during heavy rain.
NEBRASKA Ord to Cushing, Valley and Howard Counties	4	9 p.m.	35	*3			3	4	Hail	Storm moved southeastward.
NEBRASKA Grand Island (west of), Hall County	4	10-11:30 p.m.	1-1/2	*1			1	3	Hail	Hailstones 3/4 inch in diameter.
NEBRASKA Rockville to Boelus, Sherman and Howard Counties	4	11-11:30 p.m.	8				3	3	Hail	Many windows broken, automobiles dented. Crops complete loss in center of area. Hailstones up to 2 inches in diameter. Storm moved east-southeastward.
KENTUCKY Fulton County	4	P.m.					3	3	Wind	Damage done to farm buildings; trees uprooted, and crops blown down.
ILLINOIS East St. Louis and Evansville areas, St. Clair and Randolph Counties	4						4		Rain and electrical	3 to 5 inches of rain flooded Fairmount Racetrack. Barn at Evansville, struck by lightning, burned at 2 a.m.
TEXAS Dawson County	4								Tornadoes and hail	4 small tornadoes, not touching ground near Lamesa. Heavy hail damage to cotton in Munger community, near Lamesa, and near Ackerly.
VIRGINIA Lynchburg	4								Rain and wind	Torrential rains and high winds caused some power outages and flash flooding.
	4									Minor storms also reported at Mobile, Ala.; in Webster County, Ky.; at Westminster, Md.; in Cape Girardeau County, Mo.; and north of Shelton, Nebr.
COLORADO Ovid, Sedgwick County	5	9 a.m.							Hail and rain	Hail caused 30 to 40 percent loss to uncut wheat. Hail about size of golf balls. Heavy rain fell which covered most of summer-fallowed ground. Storm moved southeastward.
NEBRASKA Chase County (west-central and southwestern portions)	5	10 a.m.					3	5	Hail	
NEBRASKA Dundy County (southeastern portion)	5	11 a.m.-noon	15	*3					Hail	Hailstones up to 3 inches in diameter.
KANSAS Brown and Nemaha Counties	5	2-2:55 p.m.	4	*1			3	3	Wind, rain, and hail	Wind severe, blew in end of building under construction in Sabetha. Hit again southwest near Woodlawn community with less intensity. Hail in both areas, with relatively slight damage. Rain up to 2-1/2 inches, and hailstones up to 2 inches in diameter. Hiawatha, Brown County, had rain totaling only 0.23 inch. Storm moved southwestward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Rawlins to Sumner Counties	5	2:40-9 p.m.			0	6			Tornadoes, wind, rain, electrical, hail, and dust	Storm began in Rawlins County about 2:40 p.m., and progressed southeastward to south-central counties of Barber and Sumner by 8 p.m. Dust that reduced visibility to almost zero at times was stirred up by onrushing winds, and floods were aftermath of heavy rains. 2 tornadoes 9 miles west and 5 miles west of Atwood at 2:40 p.m., caused about $30,000 damage to farm buildings and transmission lines. 1 funnel aloft 7 miles west of Hoxie about 2:30 p.m. 1 tornado southern part of Hill City, time uncertain, took roof off of large building. 1 tornado at Hays at 3 p.m., came very close to ground. 1 funnel aloft observed west of Kingman about 7 p.m. 1 funnel aloft west of Belle Plaine came to ground once and disappeared as it passed over town. Severe winds occurred over whole path and caused extensive damage. At Hill City gust of 92 m.p.h., recorded about 2:30 p.m. At Hays 85-m.p.h., wind observed before anemometer damaged. Gust of 75 m.p.h., observed at Hutchinson about 8 p.m., and at Wichita 60-m.p.h., winds recorded about 9 p.m. Roofs, outbuildings, sheds, TV aerials, plate-glass windows, trees, power- and communication lines damaged by high winds. In Great Bend-Hutchinson-Medicine Lodge-Wellington areas onrushing winds caused severe duststorm, with visibility down to almost zero. Lightning strikes numerous. At Hays large church spire splintered. Telephone and powerlines put out of operation and some farm animals killed in localities over storm path. Hail added to destruction in several small areas. Flooding from excessive rains of several inches in 15 minutes to 1/2 hour reported in Atwood and the upper portion of Prairie Dog Creek. Progress of storm indicated by time of occurrence at Atwood 2:40 p.m.; Ellis 4 p.m.; Great Bend 5:30 p.m.; Pratt 6:30 p.m.; Kingman 7:30 p.m.; Wellington 8 p.m.
NEBRASKA Sheridan County (northern portion)	5	3 p.m.	55	*5			3	5	Hail	Hailstones 1 to 2 inches in diameter. Storm moved eastward.
NEBRASKA Max and vicinity, Dundy County	5	Afternoon					3		Hail	Hailstones up to size of baseballs. Roofs and cars damaged, cattle bruised.
LOUISIANA Kentwood, Tangipahoa Parish	5	4:30 p.m.						1	Electrical and wind	Severe electrical storm with high winds blew limbs from trees; lightning struck high school, causing considerable damage; electric services disrupted.
MINNESOTA Stevens, Pope, Stearns, Meeker, and McLeod Counties	5	4:30 p.m.					2	6	Hail	Thousands of acres of corn and soybeans stripped by hail as large as golf balls. Southeastern Stevens and southern Pope Counties hit first; damage estimated at $105,000. Greatest damage at Paynesville and Roscoe, Stearns County, reported $2,000,000. Loss throughout northern and eastern Meeker County $150,000. 10-square mile strip in northeastern McLeod County also shredded. Storm moved southeastward.
LOUISIANA Burrwood (20 miles west of), Plaquemines Parish	5	5-5:30 p.m.			0	0			Waterspouts	2 waterspouts sighted.
LOUISIANA Baton Rouge (10 miles southeast of), East Baton Rouge Parish	5	6 p.m.			0	0			Tornado	Funnel cloud aloft reported by pilot.
LOUISIANA Baton Rouge (30 miles south-southeast of), Assumption Parish	5	6 p.m.			0	0			Tornado	Funnel cloud aloft reported by pilot.
COLORADO Bent County	5	6 p.m.							Hail and rain	Hailstorm went through a farming area just south of Las Animas, ruining acres of melons and grain. Some farmers had to mow their grain for feed, instead of combining. Hailstones reported small, but frozen very hard and sharp.
KANSAS Salina (10 miles south of), Saline County	5	6:30 p.m.			0	0			Tornado	Funnel aloft observed, but quickly dissipated.
MONTANA Kremlin, Hill County	5	7:30 p.m.	3	400			1	4	Hail	Hailstones 1/2 inch in diameter. Storm moved northward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Coffeyville, Montgomery County	5	7:30-9:30 p.m.							Wind	Several plate-glass store fronts blown in, outdoor movie screen blown down, and trees and TV aerials damaged. Storm moved southeastward.
NEBRASKA Scotts Bluff County (eastern portion)	5	Evening					3	5	Hail	
SOUTH DAKOTA Northeastern portion	5							5	Hail	Heaviest losses in Potter, Clark, and Grant Counties.
	5									Minor storms also reported at Florence, Ala.; in Latah County, Idaho; in Fleming and Woodford Counties, Ky.; at Jeffers and Windom, Minn.; near Circle, Mont.; in Henderson County, Tex.; and in Okanogan, Stevens, and Spokane Counties, Wash.
OKLAHOMA Northern half	5-6	6 p.m.-after midnight			0	3	5	2	Wind, rain, hail, electrical, dust, and tornadoes	Line of severe thunderstorms moved across northern half of State from Guymon to Tulsa and southward to Norman and Seminole. Heavy rains badly washed some crops, requiring replanting in northwest. Many lightning strikes noted, but only major losses reported were 2 houses completely burned. Small hail fell in scattered areas. Strong winds of 50 to 80 m.p.h., blew clouds of dust that reduced visibility to near zero. Widespread wind damage resulted to roofs, windows, TV antennas, trees, utility lines, etc. Counties receiving hardest blow included Kay, Noble, Payne, Logan, and Lincoln 3 persons injured, 1 by flying debris causing head laceration, 1 had door slammed on his hand, and the other was blown against utility pole causing bruises. Funnels aloft reported between Chandler and Kendrick, Lincoln County, and near Boley, Okfuskee County. Storm moved southeastward.
TEXAS Dallas and Denton Counties	6	12:50-4 p.m.					4		Wind	15 by 110-foot brick wall fell on farm machinery at Dallas. Boats damaged, trees uprooted, and roofs damaged at Lake Dallas. Gusts to 57 m.p.h., at Weather Bureau Airport Office, Dallas. Storm moved northeastward.
TEXAS Hopkins County	6	1 p.m.							Wind and hail	Blew top off barn and scattered hay. Garages blown away or unroofed and houses damaged at Sulphur Springs. Some hail damage.
ARKANSAS Nashville (5 miles northeast of), Howard-Hempstead County line	6	3 p.m.	1	880			3	4	Wind and hail	Hailstones up to 1 to 1-1/2 inches in diameter reported. Hail damage confined to area of 1/2-square mile. Roofs and trees damaged by wind. Storm moved southwestward.
IOWA Clay and Palo Alto Counties	6	Afternoon					1	5	Hail and electrical	Corn and soybeans destroyed and a number of hogs killed.
IOWA Louisa County (northwestern portion)	6	4 p.m.					4	1	Wind	Barn, corncrib, and machine shed damaged.
LOUISIANA Baton Rouge, East Baton Rouge Parish	6	5-6 p.m.				2	4	1	Electrical and wind	Lightning and wind damaged several houses and caused extensive damage to bank building in Delmont village; 2 persons injured by flying glass.
SOUTH DAKOTA Eastern half	6	5-10 p.m.				1	5	6	Wind and hail	Squall-line thunderstorms with gusts to 81 m.p.h., caused extensive damage, mostly in northeast. 12 barns and many smaller structures wrecked.
KANSAS Southwestern portion	6	7:30-9:30 p.m.							Wind, rain, hail, electrical, and dust	Storm moved eastward and southward from Syracuse to Dodge City and Liberal. Liberal struck by vicious duster carried high in thunderheads. Dodge City hit by heavy rain, high winds, and some hail, resulting in downed electric lines in town, but no extensive damage.
KANSAS Southwestern portion	6	8 p.m.-midnight							Wind and electrical	High wind and lightning caused occasional damage with violent winds at Liberal about 8 p.m.; minor damage from lightning at Dodge City about 9:30 p.m.; and 3 lightning losses, including large barn, in southern Barber County about midnight.
MONTANA Crow Agency-Two Legging areas, Big Horn County	6	9 p.m.	15	*2			1	4	Hail	Hailstones 1/4 to 1 inch in diameter. Storm moved southeastward.
KANSAS Central portion	6	10:56-11:56 p.m.			0	0			Electrical, wind, and rain	Lightning accompanied heavy rains and wind. 9 strikes in Great Bend in 1 hour caused minor damages to roofs, powerlines, TV aerials, etc. Lightning struck 2 homes in Lindsborg, with no resulting

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										damage. Other towns reporting power failures were Bison, Timken, Otis, Olmitz, and Galatia.
MINNESOTA Springfield, Brown County	6	11:34 p.m.			0	0			Tornado (suspected)	Funnel-type cloud reported.
WYOMING Four Corners (near), Weston County	6	Evening	15	*7			2	5	Hail	Hail as large as golf balls. Storm moved southeastward.
WYOMING Arvada (near), Sheridan County	6	Evening					2	5	Hail	Storm moved southeastward.
	6									Minor storms also reported in Iowa and Washington Counties and At Kanawha, Iowa; at Busby, Mont.; at Richmond Hill and in Watauga County, N.C.; at Yukon, Okla.; and in Orange County, Tex.
NEBRASKA Omaha, Douglas County	7	3:30 a.m.					4	1	Electrical	Warehouse struck and set on fire.
IOWA Wright County	7	11 a.m.					3	4	Wind	Ripe oats downed and utility lines damaged.
SOUTH DAKOTA	7	A.m.					4	5	Hail and electrical	Heaviest crop losses in northeast. Lightning destroyed barn at Presho.
MISSOURI Nevada, Vernon County	7	2-3 p.m.							Rain and wind	1.95 inches of rain in 30 minutes. Minor wind damage.
MICHIGAN Detroit (near), Wayne County	7	Afternoon			1				Electrical	Man killed by lightning on golf course.
VIRGINIA Danville, Pittsylvania County	7	3-6 p.m.			1				Electrical and rain	Lightning struck and killed 1 person. Some flooding of streets and cellars, but damage slight. 0.75 inch of precipitation.
NEBRASKA Douglas County (central portion)	7	5:15-5:45 p.m.	4	*1-1/2			2	3	Hail	Some hailstones 2 inches in diameter.
NORTH DAKOTA Fargo (6 miles north of), Cass County	7	5:45 p.m.			0	0			Tornado	Tornado reported on RAWARC by Fargo.
MINNESOTA Borup (6 miles southwest of), Norman County	7	6:37 p.m.			0	0			Tornado	Tornado funnel observed.
OWA Hardin to Buchanan Counties	7	8 p.m.					3	6	Hail and wind	Crops destroyed and buildings damaged.
OWA Pottawattamie and Mills Counties to Wayne County	7	8 p.m.			0	0	5	6	Wind, rain, hail, and tornado (suspected)	Crops destroyed and buildings and utilities damaged. 1 person reported seeing funnel cloud. Storm moved eastward.
OKLAHOMA Mountain View, Kiowa County	7	10:03 p.m.	1	880	0	0	4		Wind, rain, hail, electrical, and tornadoes	1 home damaged and several barns and outbuildings destroyed by wind. Considerable small hail caused up to 100 percent loss of cotton over 2-square-mile area. 3 small funnels aloft sighted at one time. Storm moved southeastward.
OKLAHOMA Oklahoma City, Oklahoma County	7	11:15 p.m						1	Wind and dust	Unusual weather phenomenon occurred over narrow path from Kingfisher to northern and eastern portions of Oklahoma City. Sudden pressure change indicated at Kingfisher. Strong, hot winds with intense dust moved along path. Television weather station instruments in northern Oklahoma City indicated winds of 65 m.p.h., and sudden rise in temperature from middle 80's to near 100° at 11:15 p.m. Some wind damage to shingles and TV antennas noted in northern Oklahoma City. Storm moved southeastward.
OKLAHOMA Clinton (9-1/2 miles west of), Custer County	7	Night						1	Electrical	Highway Patrol reported lightning struck barn; barn and contents which included a tractor, 250 bales of hay, 50 bushels of wheat, 300 bushels of oats, and several hundred pounds of alfalfa and clover seed all destroyed.
ANSAS Douglas and Miami Counties	7	Night			0	0			Tornado (suspected), wind, rain, and hail	Wind swept from Lone Star, where sighted as funnel touching ground. Black clouds with trailing aprons observed passing northeast of Ottawa and near

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										Baldwin; touched ground near there. Followed by severe winds through Baldwin to Louisburg which uprooted and broke off trees, laid gardens and fields flat, and hail pitted fruit. Several buildings damaged or destroyed. Powerlines downed in many areas and all power and electricity out for 12 hours at Baldwin. Storm moved southeastward
MISSOURI Trenton, Grundy County	7	During night							Wind, rain, and hail	Many trees and powerlines downed.
	7									Minor storms also reported in Boone County and at Lisbon, Iowa; at Lexington Park, Md.; at Butler, Carrollton, Clarksburg, Lawson, Maryville, and Paris, Mo.' at Vici, Okla.; and at Columbus, Wis.
ALABAMA Southwestern portion	7-8						5	5	Tropical disturbance	Slight tropical disturbance moved in from Gulf, with heaviest rain and most severe flooding in Clark and Washington Counties and portion of Monroe County. Greatest 24-hour rainfall 10.85 inches at Whatley on 8th with storm total of 14.22 inches; Chatom reported 9.99 inches on 8th with storm total of 10.34 inches. Flood damage heavy. Weakening of plant-root support by wetness of soil contributed to widespread wind damage to crops and vegetation. Livestock losses estimated at about $3,000 when about 20 head of cattle lost in 1 herd. Freight train hit washout 5 miles north of Chatom; locomotive and 14 cars derailed and 200 yards of track torn up. Many highway and railroad bridges washed out and erosion of roads extensive. Business houses and homes flooded at Grove Hill, Clark County. Water reported 2 feet deep on Pine Barn Bridge on Highway 45 and up 1 foot above railroad tracks between Whatley and Suggsville.
MISSOURI Boonville (3 miles southwest of), Cooper County	8	Midnight-1 a.m.							Wind, rain, and electrical	190-foot radio tower toppled.
ILLINOIS Extreme northern portion	8	1 a.m.					5	5	Electrical, rain, wind, and hail	Squall line moved across northern third of Illinois. Damage from lightning, heavy rain, wind, or hail reported from more than a dozen communities. Storm moved eastward.
MISSOURI Sedalia, Pettis County	8	12:10 a.m.							Wind, rain, and electrical	Many telephone and powerlines downed.
ALABAMA McVay, Clarke County	8	8 a.m.			0	0	3	1	Tornado (suspected)	Storm 6 miles north of Jackson, reported by press as "small tornado." It damaged several farm buildings and residences and lifted sheet of asphalt paving from road.
MISSOURI Diamond, Newton County	8	Morning				1			Electrical and rain	Lightning destroyed barn and killed 2 heifers.
MARYLAND Talbot County	8	Noon-1:10 p.m.							Rain, electrical, and wind	Cloudburst in Royal Oak district dropped total of 3.61 inches of precipitation in 60- to 70-minute period during heavy thunderstorm. Some crops flattened by strong winds and heavy rains, but losses not expected to be great as storm confined to relatively small area. Based on rainfall intensity-duration-frequency curves for Baltimore, Md., and Washington, D.C., which if applied to Royal Oak area would indicate total of 3.61 inches of precipitation in 70 minutes would have frequency of occurrence of once in about 100 years on the average. Bolt of lightning struck home several hundred feet from gage in which the heavy rain was measured. Torrential rains also reported in Oxford area about 2 miles to southeast.
MASSACHUSETTS Greenfield, Franklin County	8	2-3 p.m.					3		Rain and wind	2.19 inches of rain in 1 hour flooded basements and caused road washouts. Wind knocked down some tree limbs.
WISCONSIN Menasha, Winnebago County	8	3 p.m.					1		Hail	Hail heavy.
OHIO Ashtabula County	8	3:30 p.m.	20-25	30-40	0	0	5	4	Tornado (suspected)	1 reporter called it tornado, but did not actually see funnel. Appears to have been 2 separate storms -- 1 over Hartsgrove Township, the other over Denmark Township. Principal damage to farm buildings and utilities in addition to crops. Corn and meadows flattened. This could have been case of poorly developed tornadic action, funnels barely or not quite touching ground. Storm moved northeastward.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MARYLAND Royal Oak, Talbot County	8	Afternoon			0	0		1	Wind or tornado (suspected)	Severe windstorm, possibly tornado, twisted off large tree and scattered debris. Damage confined to small area.
MARYLAND Choptank River (2 miles west of Hurlock), Talbot County	8	Afternoon			0	0			Waterspouts	3 waterspouts observed on Choptank River, but no damage reported.
NEW MEXICO Pastura (2 miles southwest of), Guadalupe County	8	4:30 p.m.	1	50	0	0			Tornado	Funnel reported to touch ground over open rangeland; no damage; moved southward.
TEXAS Childress, Wilbarger, Wichita, Cooke, Grayson, Denton, Fannin, Dallas, and Wise Counties	8	5 p.m.			0	4	4		Wind, hail, electrical, and tornadoes	Temperatures unusually high throughout area in advance of cold front moving down from Oklahoma. Squall line extended across northern portion from Texarkana to New Mexico. Thunderstorms, high winds, hail, lightning, and tornado funnels reported over large area of north-central. At Vernon, drive-in theater screen blown down; house destroyed by fire due to lightning at Burkburnett; 2 lightning fires reported at Gainesville; at Pleasant Grove, Dallas County, 4 persons injured by lightning. Moderate hail occurred at Bonham, Denison, and 10 miles north of Electra. 3 funnel clouds sighted at Valley View; 2 at Gunter where roof of railroad station blown off; funnel clouds also sighted at Slidell and south of Gainesville. High winds up to 84 m.p.h., at Childress destroyed or damaged homes, garages, and barns there and at Wichita Falls, Gainesville, Krum, Sanger, and other places in counties mentioned. Storm moved eastward.
GEORGIA Porterdale, Newton County	8	5:30 p.m.					5	1	Wind, rain, and electrical	Damaged roof of mill and blew shingles from 25 to 30 homes. Also caused other minor damage.
OKLAHOMA Jackson and Tillman Counties	8	6-7 p.m.						1	Wind, rain, hail, electrical, and dust	Thunderstorms, accompanied by strong winds, severe dust, and rain caused spotted damage across southern half of Jackson and Tillman Counties. Barn struck by lightning and burned near Elmer. Contents included 1,000 bales of alfalfa hay, considerable grain, and several saddles. Extensive damage to roofs, windows, outbuildings, trees, etc., occurred in Frederick to Hollister area. Storm moved eastward.
OKLAHOMA Glover to Iron Stob, McCurtain County	8	6:30-8 p.m.	10	*2	0	0	4	5	Wind, rain, and hail	Crops stripped; over 1,600 broiler chickens lost on 2 farms; another farmer lost 15 pecan trees, many barns, outbuildings, homes, and other buildings destroyed or damaged. Utility lines, trees, TV antennas, windows, etc., damaged. Storm moved southeastward.
OKLAHOMA Between Hugo and Antlers, Choctaw and Pushmataha Counties	8	11:40 p.m.			0	0			Tornadoes	Highway Patrol sighted 2 funnels between Hugo and Antlers, but evidently remained aloft as no damage reported.
ARKANSAS Yell, Garland, Grant, Hot Springs, Jefferson, Monroe, and Perry Counties	8	Evening				1	3	4	Hail, electrical and wind	Principal damage in Yell, Garland, and Grant Counties and minor damage in Hot Springs, Jefferson, and Monroe Counties. 90 acres of cotton and several acres of soybeans destroyed by hail on 1 farm in Garden Bottom community, Yell County. Man injured by lightning near Houston, Perry County.
	8									Minor storms also reported at York, Ala.; in Bourbon, Clark, Pulaski, and Woodford Counties, Ky.; at Rapides, La.; in Richmond County, N.C.; at Cameron, Eldon, and Jefferson City, Mo.; at Nebraska City, Nebr.; and at Mechanicsburg, Pa.
NEW JERSEY Sussex, Warren, and Morris Counties	8-9	Late p.m.-early a.m.				2			Rain, electrical and wind	2 Boy Scouts injured by lightning at camp near Beaver Lake, Sussex County. Locally excessive rain caused flooding of branch of Paulins Kill River and resultant derailing of freight train near Stillwater; highway near Columbia washed out, and telephone and powerlines downed. Storm moved eastward.
OREGON Entire State	8-13	Afternoons and nights	Several hundred	*Several hundred	1	1	5	5	Electrical, hail, rain, and wind	Very violent thunderstorms beginning on afternoon of 8th and continuing each afternoon and night for following 5 days included severe lightning that started hundreds of forest fires, none of which were serious, killed considerable number of sheep, damaged several buildings and much power and telephone equipment, set several ripe grain fields afire, and injured 1 man. Heavy hail, particularly in Klamath Falls and Baker and Union County areas, caused very heavy damage to buildings and

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OREGON (Cont'd)										crops. Torrential rains flooded farmland and business districts in several towns as capacities of city sewer systems exceeded. At Burns, powerlinesman killed when wind blew "live wire" against him as he was repairing other storm damage. Distribution of damage due to different storm elements approximately as follows: Lightning $130,000, rain $80,000, hail $260,000, and wind $10,000.
ARKANSAS Hamburg, Ashley County	9	1 a.m.							Wind and hail	Considerable wind damage to cotton and other crops. Trees uprooted, windows broken, and roofs damaged. No hail damage reported. Storm moved southeastward.
MISSOURI Norton (northeast of), Saline County	9	Midafternoon	8	*2					Hail, wind, and rain	Corn and wheat damaged.
NORTH CAROLINA Person County	9	3 p.m.	1	*1			4	4	Hail and wind	Hail damaged crops; wind damaged roofs, blew down trees; tree fell on automobile. Storm moved eastward.
NORTH CAROLINA Elizabeth City, Pasquotank County	9	Afternoon-evening					4		Rain	5-inch rain flooded streets and basements.
VIRGINIA Norfolk, Norfolk County	9	5:48 p.m.							Wind and rain	Wind gusts up to 69 m.p.h. Local damage to a few broken windows and upturned shingles on numerous roofs.
NEW YORK Pulteney, Steuben County	9	6:20 p.m.	6	440			3	4	Wind and hail	Hailstones ranging up to 2 inches in diameter over about 10-square mile area caused $5,000 damage to wheat, corn, oats, and other crops and some $500 injury to livestock. $1,000 wind damage to crops, and $3,000 to real and other property. Storm moved northeastward.
NEW HAMPSHIRE Colebrook area, Coos County	9	6:52 p.m.	2	200	0	0	4	3	Tornado	Funnel seen; damaged buildings, powerlines, timber, and potato crops. Path about 3 miles southeast of Colebrook; moved northeastward.
IDAHO Southwestern and south-central Counties	9	Evening			0	0			Wind and tornado (suspected	High winds about 6 p.m., did consierable damage on several ranches northeast of Richfield. Trees blown down, sheds damaged, 1 aluminum roof blown off, and some damage to crops sustained. In late evening, trees uprooted in Middleton by wind described as "miniature twister."
MARYLAND Mitchellville, Prince Georges County	9				1				Electrical	Boy killed when bolt of lightning struck tree under which he had sought refuge from storm.
VIRGINIA Hopewell and Petersburg areas, Prince George and Dinwiddie Counties	9								Rain and wind	Over 2 inches of rain and winds up to estimated 75 m.p.h. Some trees downed and telephone and power failures.
	9									Minor storms also reported in Covington County, Ala.; in Kennebunk area, Maine; in Rochester area, N.H.; in Beaufort County, N.C.; at Finley, Okla.; and at Williamsburg, Va.
LOUISIANA New Orleans and Metairie, Orleans and Jefferson Parishes	10	9 a.m.					4	1	Electrical and hail	Lightning struck several homes in New Orleans and Metairie, resulting fire in home in Metairie collapsed roof.
OKLAHOMA Elk City, Beckham County	10	A.m.				4			Rain and electrical	Heavy rains of near 4 inches during morning caused some flooding. Lightning struck building, traveled down conveyor belt along which women were working; 4 suffered shock, but no serious injury resulted.
MONTANA Lima (5 miles northwest of), Beaverhead County	10	1 p.m.			1	1	2	1	Electrical	Lightning strike killed boy, injured man, and killed 2 horses.
NEW MEXICO Hudson (vicinity of), Quay County	10	3 p.m.	3	1,000			1	4	Hail	Hailstones up to 1/2 inch diameter. Storm moved southwestward.
COLORADO Monarch Pass to San Isabel National Forest	10	Afternoon							Electrical	Electrical storms set many forest fires and knocked out transformers and fuses of powerlines along its path. Not accompanied by rain.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage be categories †: Property (exclusive of crops)	Estimated damage be categories †: Crops	Character of storm	Remarks
MONTANA Hungry Horse-Essex areas, Flathead County	10	Afternoon				1			Electrical	Survey engineer injured by lightning strike.
NORTH CAROLINA Beaufort County	10	5:15 p.m.						4	Hail	3-square miles damaged.
IDAHO Northern and eastern sections	10	Evening							Wind, hail, electrical, and dust	Hail damage to over 500 acres of crops in vicinity of Rexburg. 1 estimate placed crop damage at 30 to 50 percent. In Power County wind broke trees, raised duststorm, and caused power outages at American Falls and communities to south. In Nez Perce County strong, gusty winds flattened several fields of peas and grain and lightning knocked out several transformers. Near Cambridge wind leveled 200-foot machine shed.
	10									Minor storms also reported at Kinston, Ala.; in Wilson County, N.C.; and at Anatone and Dayton, Wash.
NEBRASKA Dakota County	11	1:30-2:30 p.m.	4	*1-1/2			2	5	Hail	Storm moved eastward into Iowa.
IOWA Woodbury County	11	2 p.m.	35	*6			5	6	Hail and wind	Crops destroyed and buildings damaged. Storm moved southeastward.
NEBRASKA Cedar and Dixon Counties	11	2:30-4 p.m.					4	4	Hail, electrical and wind	Hailstones up to 1-1/2 inches in diameter. 16 cattle killed by lightning. Property damage by lightning and hail, crop by wind and hail.
KANSAS Thomas and Logan Counties	11	3 p.m.			0	0	4	4	Tornadoes, wind, rain, hail, and dust	First tornado dipped to earth at 3:17 p.m., 2 miles east of Colby on Highway 24; funnel traveled at high rate of speed. 10 large light poles snapped off at ground. At airport small plane and small hangar damaged and nearby a farm silo and barn also destroyed. Second tornado hit farm buildings 4 miles west of Monument, about 20 miles south of Colby, at 4 p.m., destroying silo and large barn. Following tornado at Colby, high winds and severe duststorm occurred and 3 hangars and an airplane damaged at airport 3 miles north. Hail fell south and east of Colby, with stones as large as golf balls. Hail still unmelted in drifts 24 hours after storm. Small farm animals and fowls killed.
MONTANA Poplar to 16 miles west of Fairview, Roosevelt to Richland Counties	11	4 p.m.	15	*2			1	5	Hail	Hailstones approximately 1 inch in diameter. Storm moved southeastward.
NEBRASKA Thurston County (central portion)	11	4-4:30 p.m.	20	*6-8			1	4	Hail	Hailstones only 1/2 inch in diameter, but numerous.
NEBRASKA Pierce County (western and central portions)	11	4:30-8:30 p.m.	16	*3			3		Hail	Hailstones up to 2 inches in diameter.
WISCONSIN Chilton, Calumet County	11	4:45-5:15 p.m.					4	4	Hail	Hail 1-1/2 inches in diameter. Storm moved eastward.
IOWA Sioux County	11	Afternoon					3	5	Hail and wind	Crops destroyed and cars and buildings damaged. Storm moved southeastward.
SOUTH DAKOTA Scattered areas	11	Afternoon					4	5	Hail, wind, and electrical	Most property damage from hail and wind at Wall. Crop damage mainly in Moody and Minnehaha Counties.
MONTANA Drummond, Granite County	11	Late afternoon						1	Rain	Flash flood caused damage.
WISCONSIN Ripon, Fond du Lac County	11	5 p.m.					4	4	Hail	
NEBRASKA Madison County (northeastern portion)	11	5-7 p.m.	5	880			3	4	Hail	Hailstones 1/2 to 3/4 inch in diameter, very thick; corn stripped.
NEBRASKA Antelope County (southwestern portion)	11	5:20-6 p.m.	20	*5			4	4	Hail and wind	Hailstones 1 inch in diameter. Crop damage by hail, property by wind and hail. Storm moved eastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEBRASKA Stanton County (north-central and southeastern portions)	11	5:30-6 p.m.					3	5	Hail	Hailstones 1/2 inch in diameter, but very thick. Storm moved southeastward.
WISCONSIN Pine River, Waushara County	11	6 p.m.	10	*2-1/2			4	4	Hail	Storm moved eastward.
IOWA Cass, Adair, and Audubon Counties	11	6-7 p.m.					4	1	Electrical	2 barns and contents burned and several homes damaged.
NEBRASKA Johnson County (southern portion)	11	6:30-7:15 p.m.	14	*1			3	5	Hail	Storm moved southeastward.
LOUISIANA Clinton (2 miles west of), East Feliciana Parish	11	7-7:15 p.m.							Hail	Hail caused considerable crop losses.
NEBRASKA Nance County (southwestern portion)	11	7:30-7:55 p.m.	5	*2			1	5	Hail	Corn stripped.
MISSOURI Sheridan, Worth County	11	10 p.m.			0	0			Tornado (suspected)	
MICHIGAN Vermontville (near), Eaton County	11	10:30 p.m.					4	1	Electrical	Lightning set fire to 2 large barns which were destroyed with their contents.
KANSAS Geary County	11	11:30 p.m.							Wind and electrical	During rather severe thunderstorm, winds estimated at 60 m.p.h., blew down and broke drive-in theater screen which was under construction. Broken trees and limbs caused breaks in electric circuits over town. Storm moved southwestward.
MISSOURI St. Joseph, Buchanan County	11	Evening							Wind	Wind hit 58 m.p.h. Trees and powerlines downed.
MISSOURI Maryville, Nodaway County	11	Late evening							Wind, rain, and electrical	Many farm buildings damaged and powerlines downed.
KANSAS Wamego (5 miles southwest of), Wabaunsee County	11	Night							Electrical	After being struck by lightning, large barn and contents of hay and machinery burned.
NEBRASKA Boone County (southwestern portion)	11		8	*4			1	4	Hail	Hailstones 1/2 to 1-1/2 inches in diameter.
NORTH CAROLINA Madison County	11						3	4	Hail	5-square miles damaged.
	11									Minor storms also reported Tarpon Springs, Fla.; at Kamiah, Kellogg, Lapwai, and eastern Lewiston, Idaho; in Calhoun County, Iowa; at Atchison and Hiawatha, Kans.; in Cottonwood County, Minn.; at Marshall and Nevada, Mo.; at Arnett, Carmen, Clinton, Oklahoma City, Seward, and Yukon, Okla.; near Manti and Ephraim and at Herriman, Murray, Riverton, Salt Lake City, Sandy, and West Jordan, Utah; and at Shiocton, Wis.
NORTH DAKOTA Sargent and Richland Counties	12	1:30 p.m.			0	0			Tornadoes	Several funnels seen; 1 touched ground in open field no damage.
ARIZONA Tucson area, Pima County	12	Afternoon					4	2	Electric and wind	Lightning and wind damaged businesses and homes in Tucson and outlying sections.
WISCONSIN Cadott, Chippewa County	12	4 p.m.			1	2			Thunderstorm	
WISCONSIN Ripon, Fond du Lac, Racine, and Pine River, Fond du Lac, Racine, and Waushara Counties	12	5 p.m.					4	4	Rain and hail	Crop losses from hail, property losses from flood; at Pine River 2 inches of rain in 1-1/2 hours. Storm moved eastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEBRASKA Palisade (2-1/2 miles south of), Hitchcock County	12	5:30 p.m.	Short	Narrow	0	0			Tornado	Tornado funnel reported by U.S. Bureau of Reclamation. Storm moved northeastward.
OKLAHOMA North Miami and Commerce, Ottawa County	12	6:10 p.m.	5	1,320		2	4	1	Wind, rain, hail, electrical, and dust	Severe windstorm raced from North Miami through Commerce in about 5 minutes, causing extensive destruction. Several persons reported sighting what they believed was tornado funnel, but dust too dense to be sure. Highway Patrol and Meteorologists from Oklahoma A&M College Tornado Research concluded it to be straight winds. About 125 buildings destroyed or severely damaged. 9 houses completely demolished. 2 persons injured by falling buildings, 15-ton truck overturned and blown 30 feet off highway. Extensive damage also to trees and utility lines. Storm moved northeastward.
NEBRASKA Culbertson (north of), Hitchcock County	12	7 p.m.	Short	Narrow	0	0			Tornadoes	3 tornado funnels reported by Air Force Filter Center; moved northeastward.
KANSAS Wichita and Scott Counties	12	7:30 p.m.			1	1	4	4	Tornado, wind, rain, hail, electrical, and dust	Tornado funnel which dipped to earth near Marienthal, Wichita County, and intermittently from there to east of Scott City. Gale winds, hail, and heavy rain accompanied storm. Storm grew in intensity after passing Leoti and wind damage began at east edge of town. At Marienthal considerable damage resulted with indications of tornadic action, and a number of farm plants damaged as storm progressed across western Scott County. In one part of Scott City, TV aerials and trees bent and broken toward east and 2 blocks north toward northeast, showing effect of cyclonic winds. Peculiarity of storm occurred at Scott City Airport 1 mile east and 1/2 mile south where 5 sections of hangar demolished and strewn over path 200 yards wide west-northwestward for 1/2 mile, back toward Scott City, almost directly opposed to west-east direction of movement of general storm. With approach of storm, visibility reduced to almost zero by black cloud of dust at Scott City. Intermittent crop damage resulted from hail, especially near Modoc. Heavy rain, east of Leoti, estimated at near 7 inches locally, washed 8 large earth-moving equipment tires away and some were found 10 miles distant. 1 man who was suffering from heart ailment died and another hospitalized when cut by flying glass. Severe winds over wider path damaged buildings and trees and broke power- and transmission lines and some windows. An occasional building, such as a garage, picked up bodily and carried some distance. Crop damage by hail and rain, property damage by tornado, wind, and lightning. Many birds killed. Storm moved eastward.
KANSAS Palco area, Graham and Rooks Counties	12	8:30-10 p.m.			0	0			Tornado, rain, and electrical	Funnel cloud reported at dusk. Great deal of lightning with storm illuminated clouds. Storm moved northeastward.
KANSAS Burlington, Coffey County	12	9 p.m.						1	Wind and rain	High wind, lasting only a few minutes and accompanied by 1/2-inch rain, demolished 50x69-foot barn, killing 2 hogs and injuring several other animals. Also blew roof from nearby garage and uprooted some trees.
KANSAS Burlington (southeast of), Coffey County	12	9:15-9:45 p.m.	5	200	0	0	4	4	Tornado (suspected), wind, hail, and rain	Long, flat cloud observed about 200 feet off ground into which fragmentary clouds were sucked. Hail up to 2 inches in diameter fell over 3-square miles and caused damage to corn and beans. Storm moved southeastward.
ARIZONA Benson (5 to 10 miles west of), Cochise County	12	9:45-9:55 p.m.			0	0			Tornado (suspected)	Funnel cloud touched ground in open desert.
MISSOURI Bagnell Dam, Miller County	12	10 p.m.							Wind, rain, hail, and electrical	Considerable damage to buildings, trees, and power-lines.
NEBRASKA Chase County (western portion)	12	10-11:30 p.m.	20	*5			4	5	Hail	Hailstones 1 to 2 inches in diameter.
ARIZONA Stanfield (4 miles west of), Pinal County	12	Evening			1	1			Rain	Man drowned and his companion injured in flash flood.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
KANSAS Marion, Marion County	12	P.m.						1	Wind, rain, electrical, and hail	Brief storm brought 0.72-inch rain and 65-m.p.h., winds which blew down some powerlines and tree limbs. Lightning struck barn 4 miles south of town, completely demolishing it and tools, equipment, and grain stored in it.
TENNESSEE Brick Creek community, Giles County	12	P.m.							Rain and wind	Thousands of tiny frogs fell during a hard rain, blanketing 6-acre area about 6 miles east of Pulaski. Ground literally covered with frogs about 3/4 inch in size which could be scooped up by the handful. The only explanation offered by residents of area was that wind may have funneled frogs from a pond and dumped then over countryside.
PENNSYLVANIA Allegheny, Westmoreland and Indiana Counties	12	Evening				1	3		Hail, electrical, and rain	Hail about 1 inch in diameter caused considerable damage to crops and injured boy who was hit on head by large piece of hail. Hailstorm termed by local residents as worst since turn of the century. Electrical services interrupted when several transformers knocked out by lightning.
KANSAS Pottawatomie, Shawnee, Douglas, and Jefferson Counties	12	Night					3	4	Hail, wind, and electrical	Thunderstorm over much of east. Damages from lightning, wind, and some hail from Wamego to Oskaloosa. Some farm animals killed by lightning and house northeast of Wamego also hit. Building under construction at Topeka had 80-foot wall blown over by 63-m.p.h., wind. Hail and wind caused crop damages in Jefferson and Douglas Counties. Storm moved eastward.
KANSAS Washington, Clay, and Cloud Counties	12	Night							Electrical, wind, rain, and hail	Farm home near Clyde struck by lightning, with considerable resulting damage by fire. At Morganville wind damaged telephone and powerlines, haystacks, small farm buildings, and sheds.
COLORADO Prowers County	12				0	0			Tornado (suspected)	3 electric poles downed and farm building moved several feet from its foundation in vicinity of Lamar, Bristol, and Granada.
	12									Minor storms also reported at Decatur, Huntsville, and in Tuscaloosa County, Ala.; at Greenfield, Ind.; near Kansas City and at Ft. Scott and Sabetha, Kans.; at Clinton, Kansas City, Joplin, and St. Joseph, Mo.; near Curtis and Stockville, Nebr.; and in Lincoln County, N.C.
MISSOURI Independence, Jackson County	13	Early morning				1			Electrical	Man's pajamas set on fire when tent hit by lightning.
UTAH Kenilworth, Carbon County	13	Noon							Rain and hail	Small gardens ruined, yards and basements flooded by heavy rain and large hail.
NEW JERSEY Haddon Heights, Camden County	13	1:26-1:30 p.m.			0	8			Tornado	Small truck carried 80 feet around corner; roof and entrance to diner torn off; parked car tossed about; several plate-glass windows blown out; walls of garage blown out; 1 structure twisted on foundation and many trees uprooted, twisted, and blown over. All damage and debris strewn in every direction.
TENNESSEE Monterey, Putnam County	13	2-3:30 p.m.			0	0	3	1	Tornado (suspected)	Observer states there was roar of short duration. 50 to 100 trees and a few small buildings and road signs blown down. Short path through rolling, wooded section damaged trees. Storm moved eastward.
LOUISIANA Baton Rouge, East Baton Rouge Parish	13	2:30 p.m.			0	0	4	1	Tornado	Evidence indicated small tornado dipped and struck building, rising quickly; 35-foot front of concrete-block building apparently blown outward by internal pressure, falling on parked automobiles; wind reported began suddenly from west, shifting quickly to north via south and east.
IDAHO Kootenai, Latah, Nez Perce, Lewis, and Idaho Counties	13	Early afternoon					4	5	Hail, rain, and wind.	Hailstorms widespread, but area of greatest damage in vicinity of Craigmont and Nezperce. Hail reported up to 1 inch in diameter. 2.32 inches of rain and hail in 1 hour at Nezperce. General store at Mohler moved by mud and water. Heavy erosion damage on many fields and in area of greatest rain and hail damage.
MONTANA Camas Prairie Valley (12 miles northeast of Perma), Sanders County	13	3 p.m.	5	*2			1	5	Hail	Hailstones 1 inch in diameter. Storm moved northeastward.
INDIANA Versailles, Ripley County	13	3:10 p.m.	2/10	100	0	0	4	1	Tornado and rain	Tornado and heavy rain damaged several houses. Roofs removed from 7 houses. Large barn at edge of town blown 200 feet. Storm moved northeastward.
KENTUCKY Walton, Boone County	13	3:30-4 p.m.	1	440	0	12	5		Tornado	Destroyed completely about 6 houses and damaged a number of others. Also heavy damage to utilities. Storm moved eastward.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEW JERSEY Vincentown and Pemberton areas Burlington County	13	3:40-4 p.m.	1	100-200	0	0	4		Tornado	Wooden silo downed; wall of cinder-block shed blown out; front porch and rear shed of house torn off and demolished; wooden barn toppled and corncrib carried several yards; cinder-block addition to barn blown over; upper portion of wooden barn torn off and completely shattered; many trees blown down, twisted, and uprooted. Debris in all directions. Storm moved northeastward.
MONTANA Kalispell (6 to 7 miles east of), Flathead County	13	Afternoon	3	*1-1/2			1	4	Hail	Hailstones 1 inch in diameter. Storm moved eastward.
MONTANA Vida (7 miles south of), McCone County	13	4 p.m					1		Hail	Considerable crop damage.
ILLINOIS Rantoul, Champaign County	13	4:13 p.m.			0	0			Tornado	Tornado aloft moved southeastward.
MICHIGAN (Lower) Southeastern portion	13	5 p.m.					4	5	Wind, hail, and electrical	Principal damage to crops in 2-mile wide strip from northern Lapeer County into southern Sanilac and northern St. Clair Counties. Golf-ball-size hailstones and 80-m.p.h., winds reported. Some wind and hail damage also occurred in Shiawassee County, and a large barn destroyed by lightning in southern Saginaw County. Storm moved east-southeastward.
KENTUCKY Fayette and Bourbon Counties	13	5-6 p.m.		34	0	0	5		Tornado	Tornado moved northeastward across northeastern Fayette County and into Bourbon County. Damage to houses, barns, fences, trees, and utilities.
OREGON Mitchell, Wheeler County	13	5-6 p.m.	6	*1-1/2		2	6	2	Rain	Rains from cloudburst that struck Mitchell and hills immediately surrounding it drained into Bridge Creek, a small stream normally only a foot or two wide that flows through town. It rose rapidly becoming a torrent that swept away lower part of town including post office, a number of homes, several business establishments, a garage, and several cars. It also tore out or badly damaged 11 main highway bridges, swept several cars and loaded transport trucks off highway, and washed entire roadbed out at several points. Weather station at Mitchell swept away by flood, but 2 witnesses found who accidentally had exposed open containers during storm, 1 in town and 1 to east on Girds Creek. Geological Survey personnel who discovered these witnesses calculated that these vessels showed 3.5 inches in one at Mitchell and 4.0 inches in one at Girds Creek. Practically all of this occurred in period of 50 minutes. Storm moved northeastward.
ONTANA Dunkirk-Galata-Chester-Joplin areas, Toole to Liberty Counties	13	5:30 p.m.	30	*15			1	5	Hail	Storm moving northeastward extended to 25 miles north of Joplin.
ENTUCKY Montgomery and Bath Counties	13	6 p.m.			0	0	4		Tornado	Tornado struck in northern Montgomery County and moved eastward into Bath County. Barns damaged and limbs ripped from trees. Also damage to other buildings.
ANSAS Neosho and Labette Counties	13	P.m.							Electrical and wind	Several severe lightning strikes damaged homes and powerlines. Wind blew down chickenhouse at Mound Valley.
ENTUCKY Bath County	13	P.m.			0	0	3		Tornado	2 barns flattened, outbuildings demolished, and numerous trees uprooted.
OLORADO Otis area, Washington County	13	Evening			0	0			Tornado	Small tornado reported, but apparently moved into Nebraska without doing any damage.
NDIANA Rising Sun area, Ohio County	13						4	1	Wind	Roof of barn and henhouse blown off. Nearby in Pate area concrete-block garage and shed damaged.
OUISIANA Golden Meadow, Lafourche Parish	13							1	Rain	Nearly 4 inches of rain. Time not given and no data as to damage.
RGINIA Lee County	13								Electrical, hail, and rain	Most damage west of Jonesville. Hail damage to tobacco. Electric and telephone lines damaged. 3 cows struck by lightning. Store and contents completely destroyed by fire after lightning strike,

ee reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
VIRGINIA (Cont'd)										1-1/2 miles west of Ewing and 3 houses struck by lightning in Ewing vicinity. Serious damage to Flatwood school building when lightning struck chimney.
	13									Minor storms also reported near Red Rock, Ariz.; in northern Izard County, Ark.; at Lawson, Thayer, Wellsville, West Plains, and Willow Springs, Mo.; at Richey, Mont.; at Allendale and Iva and near Inman, S.C.; and at Langford, S. Dak.
SOUTH DAKOTA Eastern half	13	2-11 a.m.					3	2	Electrical, rain and hail	Lightning burned granary and damaged house. Heavy local rains near Garretson caused minor flooding; unofficial gages showed up to 5 inches.
PENNSYLVANIA Bloomsburg area, Columbia County	14	10:30 a.m.					4	1	Electrical	Bolt of lightning associated with thunderstorm struck barn, setting it afire which destroyed structure and contents.
ALABAMA Hamilton, Marion County	14	11 a.m.				1	3	1	Electrical	Woman injured when lightning hit home.
CONNECTICUT Fairfield, Hartford, Tolland, and Windham Counties	14	11 a.m.-2 p.m.	90			4	4	4	Electrical, wind, and hail	Wind and hail caused moderate damage to 75 acres of shade tobacco and other crops in Hartford and Tolland Counties. Lightning-caused fire damaged house in Rockville to extent of $6,000 and to another home in Easton, Fairfield County, to extent of $500. Storm moved eastward blowing down 2 silos and damaging barn in Putnam area, Windham County, with damage estimated at $5,000. Dislodged electrical wires caused short circuit, blowing out fire-alarm system at Putnam Fire Department; damage estimated at $6,000. Tree blown onto car injured 4 persons at Simsbury. Many power failures in affected counties lasted from 1 to 4 hours, as numerous trees and limbs blown down. Winds estimated at 65 m.p.h., at Putnam while 0.7 inch of rain measured in less than 40 minutes at Hartford.
NEW JERSEY Raritan Township, Monmouth County	14	11:10-11:20 a.m.					3		Wind, rain, hail, and electrical	Roof and rear wall of cinder-block garage partially destroyed by wind; several signs, trees, and wires downed in Keyport area. Storm moved southeastward.
NEW JERSEY Wrightstown, Burlington County	14	11:15-11:30 a.m.				1	3		Wind, rain, and electrical	Roof of Fort Dix Bus Depot blown off, damaging and toppling 7 electric poles; several cars and 1 truck damaged by falling poles and wires; 2 plate-glass windows cracked and broken. Storm moved eastward.
RHODE ISLAND Providence County	14	1-3 p.m.				1	3		Electrical, wind, and hail	Storm entered State from west and moved eastward across northern part. 1 person injured in Providence by flying glass, as wind and hail smashed numerous large store windows and sash in greenhouse in North Providence. Hailstones reported up to golf-ball size. Power failures numerous, due to falling limbs and trees. Some hail damage to vegetable gardens, but no estimate available.
MASSACHUSETTS Southeastern (except Cape Cod)	14	Afternoon			2		3		Electrical	1 person killed by lightning at Brocton golf course. Powerlines downed in several communities. Woman struck and killed by automobile at Fall River, as heavy downpour cut visibility. Some trees and many tree limbs knocked down. Storm moved southeastward.
SOUTH CAROLINA North and Orangeburg areas, Orangeburg County	14	Afternoon				1	4	2	Electrical, wind, rain, and hail	Lightning injured 1 person in Orangeburg. Minor wind damage near North.
MINNESOTA Scott Township, Stevens County	14	4:30 p.m.				1	3	1	Electrical	Farm youth struck by lightning. Nearby livestock also struck and killed.
MINNESOTA Minneapolis-St. Paul, Hennepin and Ramsey Counties	14	6 p.m.				1	3	1	Electrical	Lightning struck man in St. Paul. Several buildings in area hit. Storm moved eastward.
ILLINOIS Belleville, St. Clair County	14	7 p.m.				1	3	1	Electrical	Woman injured by lightning strike. Residence struck by lightning.
MINNESOTA McLeod, Carver, and Rice Counties	14	8:30 p.m.	8	*2			4	5	Hail and wind	In Bergen Township hail 1 inch in diameter did $250,000 damage to standing crops. High winds caused $25,000 damage. Some crop damages reported in southwestern Carver County by 2-inch hail; dollar value unknown. Forest Township, Rice County, also reported light hail damage. Storm moved southeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
NEBRASKA Bellwood (near), Butler County	14	11 p.m.			0	0			Tornado (suspected)	Reported by Ground Observer Corps.
GEORGIA La Grange (near), Troup County	14	P.m.			1	2	3	1	Electrical, wind, and rain	Boy killed by lightning on beach at Ida Cason Calloway Gardens. 2 other boys injured slightly by same bolt. All telephones in La Grange knocked out for from 30 minutes to 4 hours.
KANSAS Southwestern portion	14								Rain and hail	Heavy rains from Garden City area southward through Satanta and Elkhart. Totals reported up to 5 inches at Holcomb. Hail size of golf balls reported at Lakin and Deerfield.
	14									Minor storms also reported at Athens and Bessemer, Ala.; near Stuart, Nebr.; and in Pecos County, Tex.
MISSOURI Louisiana, Pike County	15	4 a.m.							Thunderstorm	Buildings, trees, and telephone and powerlines damaged.
WISCONSIN Columbia, Rusk, Waushara, and Rock Counties	15	6:30 a.m.			0	0	4	4	Tornado, wind, and hail	Funnel cloud reported forming at Plainfield at 6:47 a.m. Hail 2 inches in diameter in Columbia County. Storm moved eastward.
ILLINOIS Rockford area, Winnebago County	15	11:20 a.m.				2	4	5	Hail and electrical	Many heavy thunderstorms in area extending from Springfield to Rockford and eastward. 2 lightning injuries near Rockford. Hail heaviest in 20-mile-long strip northeast of Rockford.
INDIANA Evansville (40 miles north of),	15	1:49 p.m.			0	0			Tornado (suspected) and rain	Pilot reported seeing tornado 40 miles north of Evansville. State police checked area and found heavy rain showers, but no wind damage or evidence or tornado.
NEBRASKA Platte County (southeastern portion)	15	2-2:30 p.m.	15	*1-1/2					Hail	Hailstones 1 to 1-1/2 inches in diameter. This was a very severe hailstorm; damage low because wheat harvested and corn practically ruined by drought.
SOUTH DAKOTA Belle Fourche (southeast of), Butte County	15	Afternoon							Hail and electrical	
MONTANA Wyola (3 miles north of), Big Horn County	15	3:30 p.m.	3	880			1	4	Hail	Hailstones up to 1-1/4 inches in diameter. Storm moved eastward.
NEBRASKA Seward County (eastern portion)	15	4 p.m.	10	880			4	4	Hail and wind	Hailstones 1/2 inch in diameter, but thick. One barn demolished. Storm moved eastward.
NEBRASKA Emerald (near), Lancaster County	15	4-4:30 p.m.	6	*4			5	5	Hail	Hailstones 1 to 4 inches in diameter. Storm moved eastward.
ALABAMA Morgan and Lawrence Counties	15	5 p.m.					3	4	Hail	Damage east of Five Points, with area centered about a mile west of Punkin Center.
IOWA Shelby County	15	5 p.m.					4	5	Winds	Crops destroyed and buildings damaged.
WYOMING Sundance (15 to 25 miles south of), Crook County	15	6:30 p.m.-midnight	10	*5			3	4	Hail and wind	Property damage 50 percent by hail, crop damage 95 percent by hail. Funnel cloud may possibly have been associated with this storm, although type and pattern of damage does not so indicate. Storm moved southeastward.
KANSAS Ellsworth, Lincoln, and Mitchell Counties	15	7-9 p.m.	65		0	0	4	1	Tornado, wind, rain, and electrical	Winds caused damage near Ellsworth about 7 p.m., and again about 9 p.m. Occasional damage reported from winds from near Holyrood, Ellsworth County, to southeastern Mitchell County during evening. Lightning, including several instances of observed ball lightning, caused electrical trouble near Ellsworth, and several buildings set afire by lightning. Severe winds left trail of damage from west of Ellsworth to north of Carneiro, some 15 miles, in east-west line. Other parts of Lincoln County and southeastern Mitchell County sustained wind damage to farm buildings, but greatest loss was from small tornado that covered a path of about 6 miles from just west of Barnard, almost due east through town at 8:10 p.m. 1 person who observed storm reported funnel raised and lowered to ground several times in covering path. Path of tornado 1/2 mile or less in width. 1 house in Barnard demolished, but trees, roofs, small buildings, power- and communication lines, and windows all bore evidence of the storm's fury.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Eastern half	15	7:15 p.m.-midnight				4			Electrical and wind	Squall line developing late in afternoon resulted in damage in several localities over State in its passage southeastward. Several instances of ball lightning reported. In Sumner County, lightning struck transformer at Wellington causing loss of current to part of town for nearly 2 hours; near Conway Springs barn and garage containing car burned after being struck by lightning late at night. Wind and lightning also caused damage in Clay and Dickinson Counties from 5 to 7 p.m. Barn unroofed and other small farm buildings damaged near Wakefield about 5 p.m.; west of Manchester wind tore corrugated tin roof off barn at 5:45 p.m. Home 2-1/2 miles south of Manchester struck by lightning about 6 p.m., and 2 girls injured by bolt; near Talmage house and contents burned after being struck by lightning about 9 p.m. Several farm animals killed in other parts of northern Dickinson County; storm hit Chapman about 6:30 p.m., but only minor damage resulted. Nemaha and Brown Counties suffered from lightning with loss of power for a time; several head of cattle killed and appliances damaged about 8 to 9 p.m. In Atchison County winds in Muscotah area broke windows, blew chimneys over, unroofed sheds and barns, and damaged power- and communication lines from 8 to 8.30 p.m. In Kansas City-Olathe areas tree, awning, shingle, and TV aerial damage resulted from strong, gusty winds late at night; lightning damage occurred at a number of places, but without major damage; 2 firemen injured while trying to extinguish blaze caused by lightning.
MISSOURI Moberly, Randolph County	15	9-10 p.m.							Rain, wind, and electrical	Heavy rains up to 2 inches. Powerlines downed.
GEORGIA Fulton, Gwinnett, Hall, Cobb, Upson, Richmond, Dougherty, and Grady Counties	15	P.m.							Wind, rain, hail, and electrical	Series of severe thunderstorms and heavy rains during afternoon and evening caused widespread but relatively minor damage over widely scattered parts of State. In Atlanta area flash flooding of many streets following heavy rains caused a number of motorists to be stranded temporarily in their automobiles. Several basements flooded and much damage done to trees and utility lines by wind and lightning. At Lawrenceville, Gwinnett County, considerable inundation and erosion damage from very heavy rains, and hail caused extensive crop damage over small area. Streets flooded and telephone and electric services interrupted for hundreds of homes in Marietta and in Cobb County. Some flooding of streets and lightning damage occurred in Gainesville area, Hall County. Wind gusts reached 63 m.p.h., in Augusta, causing damage to trees and utility lines. 2 cars damaged by falling trees. Wind and lightning damaged a number of TV antennas and trees and utility lines in Thomaston, Upson County. Several homes struck by lightning, and heavy rains fell in Albany. Heavy rains caused flooding of low areas in Cairo, Grady County, and lightning caused disruption of electrical services.
KENTUCKY Hopkins County	15	P.m.			1				Electrical	Fatality result of being struck by lightning.
KENTUCKY Laurel County	15	P.m.	3		0	0			Tornado	Tornado observed first as not touching ground. Apparently touched ground later for distance of about 3 miles. Damage to trees and a house.
INDIANA Clay County	15						5	1	Electrical and wind	Lightning and resulting fire destroyed plant at Carbon. Windstorm damaged home and leveled 2 garages in Cardonia. In Brazil, lightning and wind damaged several houses and utility lines. Wind damage $500 to $5,000.
	15									Minor storms also reported in Tallapoosa County, Ala.; at Attica, Ind.; in Montgomery County, Iowa; in Powell County, Ky.; at Brunswick, Chillicothe, Hale, Kansas City, Ledgerland, and in northeastern Boone County, Mo.; Ceresco and in Diller area, Nebr.; in Buncombe and Caldwell Counties, N.C.; and at Harriman and Whitesburg, Tenn.
MISSOURI St. Louis	16	12:30 -1 a.m.							Electrical and rain	1.23 inches of rain in 1 hour in downtown St. Louis. Minor lightning damage.
KANSAS Conway Springs (near), Sumner County	16	1 a.m.							Electrical	Lightning struck barn, burning it and attached garage and an automobile.
TENNESSEE Buladeen, Carter County	16	3:30 a.m.					4	1	Electrical	Store struck by lightning and burned with complete loss.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
INDIANA Frankfort area, Clinton County	16	9 a.m.					4	1	Electrical	Lightning and resulting fire destroyed silo and 2 barns on farm 1-1/4 miles west of Frankfort.
KANSAS Bird City area, Cheyenne County	16	A.m.							Wind, hail, and rain	Wind and hail struck south of Bird City. At center of storm hailstones as large as turkey eggs, winds 30 to 40 m.p.h., and rain of about 2 inches. Windows broken, trees stripped of leaves, crops damaged, and chickens killed.
KENTUCKY Laurel County	16	A.m.					4		Electrical	House burned after being struck by lightning.
WISCONSIN Big Bend and Muskego areas, Waukesha County	16	12:30 p.m.	3	30	0	0	1	3	Tornado	Tornado moved eastward.
MONTANA Homestead (12 miles west of), Roosevelt County	16	2 p.m.	5	*1-1/4			1	4	Hail	Hailstones 5/8 inches in diameter. Storm moved eastward.
MARYLAND Caroline County	16	3 p.m.							Hail, wind, and rain	Heavy electrical storm swept through County and hit hard in Ridgely district when hailstones of various sizes and shapes swept over town. A number of windows broken. Many gardens and TV antennas or aerials showed ill effects from wind, hail, and rain. Many branches blown from trees and some trees downed. Power interrupted as tree limbs fell on wires.
MONTANA Opheim and Glentana to Larslan area, Valley County	16	3 p.m.	8	880			3	4	Hail and wind	Property damage by wind, crop by wind and hail. Storm moved eastward.
MARYLAND Fountain Head Country Club-Chewsville-Bridgeport-Leitersburg areas, Washington County	16	Midafternoon							Hail and wind	Severe hailstorm dropping hail as large as golf balls pelted golfers participating in tournament at Fountain Head Country Club course. Umbrella under which golfers took refuge cut to ribbons by hailstones. In Chewsville-Bridgeport area hail ruined gardens and cut leaves from trees. Peaches cut by hailstones and corn crops ruined in some fields.
MARYLAND Somerset County	16	3:45 p.m.			0	0			Tornado	Twister caused reported damage in summer-resort colony at Dames Quarter, lifting roof off 1 house and damaging several other homes on Tangier Sound waterfront. 12-foot boat picked up from water and carried about 300 feet on shore.
TENNESSEE Oak Ridge, Anderson County	16	4-6 p.m.				5	4	1	Wind	Trees uprooted, TV antennas blown down, and buildings damaged. Peak gusts 54 m.p.h., recorded at Weather Bureau. Downtown shopping center hardest hit, with windows broken and signs downed. Storm moved eastward.
MICHIGAN (Lower) Southern portion	16	4:15 p.m.	90	*15		11	5	6	Wind, hail, and electrical	Storm developed in southern Montcalm County and swept southeastward to Lenawee County. Winds of over 70 m.p.h., and heavy hail ruined crops over much of path. Wind and hail damage to buildings and windows also high in some localities.
SOUTH DAKOTA Timber Lake to Platte, Dewey to Charles Mix Counties	16	5-8 p.m.			0	0			Tornadoes (suspected), hail, wind, and electrical	Funnel clouds aloft reported near Platte and Gannvalley. Damage due to hail.
MONTANA Vida (6 miles south of), McCone County	16	6 p.m.	12	*2			1	4	Hail	
GEORGIA Dalton and Gainesville, Whitfield and Hall Counties	16	8 p.m.						3	Wind and electrical	During severe thunderstorm, lightning struck a 44,000-volt powerline into Dalton. About 5,000 feet of line burned and city plunged into darkness for more than 12 hours. Thunderstorm winds collapsed skating-rink tent at Gainesville, with damage estimated at $5,000.
INDIANA Hammond, Lake County	16	Evening	1/10	15	0	0	3	1	Tornado and waterspout	Small waterspout came in from Lake Michigan and uprooted more than a dozen large trees.
	16									Minor storms also reported at Muscle Shoals and Opelika, Ala.; at Burr Oak and Whiting, Ind.; at Pocomoke City and Pondsville, Md.; at Whitetail, Mont.; at Ansley, Nebr.; in Bladen, Iredell, and Robeson Counties, N.C.; at Crescent and Morrison, Okla.; and at Portland, Tenn.
VIRGINIA Hopewell, Prince George County	16, 17, 18								Rain	Total of 4.63 inches of rain in 3 days, with some large amounts falling in short intervals. Downpour on late afternoon of 17th exceeded 1 inch

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
VIRGINIA (Cont'd)										in 15 minutes. Local flash floods, but damage minor.
NEBRASKA Burt County (southwestern portion)	17	1-1:30 a.m.	4-5	*2-3			1	5	Hail	Hailstones 1/4 to 1/2 inch in diameter, but numerous. Corn stripped.
OKLAHOMA Garfield, Noble, Logan, Lincoln, Payne, and Oklahoma Counties	17	10 a.m.	Short	50	0	0		2	Tornadoes, wind, rain, hail, and electrical	Funnels dipped to ground momentarily in open field 4 miles northwest of Billings. Strong, straight winds which accompanied severe thunderstorm raised clouds of dust across Garfield, Noble, Logan, Lincoln, Payne, and Oklahoma Counties. Lightning struck 2 homes in Guthrie and church in Edmond. Strong winds uprooted trees and blew down utility poles. Heavy rains and some hail followed winds. Storm moved east-southeastward.
NEBRASKA Oxford (south of), Furnas County	17	Morning			1				Electrical	Farmer on tractor struck and killed.
MINNESOTA Rice County (northwestern portion)	17	12:30 p.m.							Hail	Hail occasionally size of golf balls riddled corn and laid-by grain and some soybeans. Storm moved eastward.
ARKANSAS Little Rock, North Little Rock, and Scott, Pulaski County	17	1 p.m.			1		2	4	Electrical, hail, and wind	Man killed by lightning in North Little Rock. Lightning also killed a few cattle. Considerable hail damage to cotton and other crops near Scott. Hailstones from 1 to 1-1/2 inches in diameter reported. Considerable wind damage to trees.
MINNESOTA Pennock, Kandiyohi County	17	1:55 p.m.	6	50	0	0	4	3	Tornadoes	4 funnel clouds observed, 1 touched ground, demolished barn, killed 3,000 turkeys, twisted crops and trees, and destroyed wild life. Farmer lying in ditch to escape funnel, picked up and deposited uninjured in field. Storm moved southeastward.
IOWA Fayette, Howard, Chickasaw, and Winneshiek Counties	17	2:30 p.m.					3	6	Wind and hail	Buildings damaged and crops and livestock destroyed.
OKLAHOMA Greer County	17	2:30-4 p.m.							Wind, rain, and electrical	Strong winds destroyed barn and granary and damaged house on farm 4-1/2 miles southeast of Granite. Lightning knocked out utility lines in Granite and Mangum and winds caused damage to roofs and trees. Storm moved northeastward.
IOWA New Hampton (3 miles east of), Chickasaw County	17	3 p.m.	3	200	0	1	3	4	Tornado	Country club, mink farm, farm buildings, and mail truck damaged. Storm moved southeastward.
IOWA Jones, Cedar, and Muscatine Counties	17	5:30 p.m.					4	6	Hail and wind	Crops and buildings damaged. Storm moved southeastward.
ALABAMA Fayette, Fayette County	17	Afternoon			1		3	1	Electrical	Lightning killed woman in home.
OKLAHOMA Kiowa County	17	Afternoon			0	0		2	Wind, rain, hail, electrical, and tornadoes	Widespread damage resulted to trees, TV antennas, utility lines and poles, outbuildings, and roofs. Funnels aloft reported near Hobart. Light hail caused minor damage to crops.
NORTH CAROLINA Franklin, Madison, Person, and Wilson Counties	17	7-8 p.m.					3	5	Hail	Widespread thunderstorms caused hail damage in several widely separated areas, mostly to tobacco in fields.
NORTH CAROLINA Johnston County	17	9:30 p.m.	4	*1				5	Hail	Hail destroyed large acreage of tobacco.
NEW MEXICO Ruidoso, Lincoln County	17	P.m.					5	1	Hail	Major damage to roofs and neon signs.
GEORGIA Chatham, Mitchell, and Cobb Counties	17	P.m.				1	3	1	Wind, rain, and electrical	Sudden windstorm in southern Chatham County caused power failures in several communities. Many trees blown down, but damage minor. Electrical storm at Marietta, Cobb County, caused interruption of electrical services to 50 homes. 1 home damaged when struck by lightning. Electric and telephone services knocked out at Camilla, Mitchell County. Lightning also struck home and grocery store; owner of store knocked to floor and injured.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEW MEXICO Dona Ana County (southern portion)	17	P.m.	8	880			1	4	Hail	Storm moved west-northwestward.
COLORADO Northeastern portion	17	Evening			0	0			Tornado, hail, and wind	Tornado touched ground briefly in open, semi-cultivated farming country southeast of Limon. Members of well-drilling company sighted it 5 miles from Limon. No damage reported from tornado. Same evening hail- and windstorm swept across Weld, Morgan, and Lincoln Counties, flattening crops, breaking windows, and damaging roofs. Storm moved southeastward.
IOWA Harrison and Pottawattamie Counties	17	Night					3	4	Hail	Crops destroyed and buildings damaged.
KENTUCKY Simpson County	17						4		Hail	About 40 to 50 farms reported hail damage ranging from minor to total loss, mostly to tobacco.
VIRGINIA Frederick Halls area, Louisa County	17								Wind, rain, and hail	Trees uprooted, roofs blown off, corn in fields flattened, and some local flooding.
VIRGINIA Warrenton, Fauquier County	17								Electrical and rain	1 barn burned with loss estimated $18,000. Some telephone and electrical outages.
VIRGINIA Fredericksburg, Spotsylvania County	17								Rain	2.10 inches of rain; a little over 1 inch measured within 15-minute period caused some minor flooding of yards, gardens, and low areas in streets.
	17									Minor storms also reported at Fredonia, Ala.; at Mullinville, Kans.; southeast of Wayne, Nebr.; near Ada, Okla.; and at Lynchburg and Strasburg, Va.
CALIFORNIA	17-29						6	2	Rain and electrical	Southeasterly flow of humid subtropical air associated with Low aloft along Pacific Coast and High over Southwest caused scattered thunderstorm activity over much of California, with some local flash floods reported in southeastern interior desert and mountain areas. Unusual lightning display in San Francisco Bay area on 17th and 18th caused some brush and forest fires and damage to communication and power systems. 11 consecutive days with thunderstorms at Bishop from 19th through 29th and at Cow Creek from 18th through 28th. Also unusually warm this period which accelerated snow and ice melt high in Sierras, causing heavy runoff on eastern slope. Heavy rain caused slides closing Highway 108 on 20th about 5 miles west of its junction with Highway 395, officially reopened morning 23d. Heavy rainfall reported in Lucerne Valley-Apple Valley area, and at Barstow 1.72 inches from 6 p.m., to midnight on 24th caused some local flooding. Flash floods at Deep Springs School, Inyo County, washed out some roads on 25th, and on 27th flash flood at Barton Flat Creek isolated a dozen summer camps more than 14 hours and closed Barton Flats and Seven Oaks roads with mud and rocks. Forest Service officials estimated more than 600 forest fires started by lightning strikes from 17th-29th, with costs of fire suppression nearly half a million dollars.
NORTH DAKOTA Ramsey County (northern portion)	18	10 a.m.-1 p.m.			0	0	1	3	Tornadoes	About 3 or 4 funnel clouds observed in this vicinity, moving eastward.
IOWA Webster to Poweshiek Counties	18	Noon					3	6	Hail	Crops destroyed and buildings damaged. Storm moved southeastward.
NEBRASKA York County (north-central and northeastern portions)	18	12-12:45 p.m.	20	*2			3	4	Hail	Storm moved eastward.
NORTH DAKOTA Grand Forks, Cass, Traill, and Stutsman Counties	18	Noon-6 p.m.			0	0			Tornadoes	6 funnel clouds moving eastward; several touched ground, but no damage reported.
IOWA Greene County	18	12:15 p.m.	2	*1			1	4	Hail	Field crops damaged.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MINNESOTA Otter Tail, Wadena, and Grant Counties	18	12:45 p.m.	10	*2			3	4	Hail	In eastern Otter Tail County hail 1/2 inch in diameter damaged small grains; crop loss 10 to 90 percent. Some small hail at Wadena, Wadena County, and near Elbow Lake, Grant County; damage negligible. Storm moved southward.
NEBRASKA Giltner (south of), Hamilton County	18	1 p.m.	10	*2			1	5	Hail	
NEBRASKA Grand Island (south of), Hall County	18	1:32 p.m.			0	0			Tornado	Funnel did not reach ground.
NEBRASKA Fillmore County (southwestern portion)	18	2-3:30 p.m.	9	*2			1	4	Hail	Hailstones up to 1 inch in diameter. Storm moved eastward.
NEBRASKA Seward to Saline Counties	18	2-3:30p.m.	36	*3			3	6	Hail and wind	Most corn in area total loss, and other crops severely damaged. Crop losses by hail, property by wind. Storm moved southeastward.
KANSAS Leavenworth, Wyandotte, and Johnson Counties	18	2:30-3 p.m.							Wind, hail, and rain	First evidence of storm was west and south of Tonganoxie about 2:30 p.m. As it moved eastward additional damage done over most of Leavenworth, Wyandotte, and Johnson Counties . Spotty hail damage reported, but wind damage more general. Hailstones ranged in size from marbles to walnuts and were driven by high winds. Automobile glass and, in Sunflower Village, many windowpanes broken. Falling trees damaged automobiles and a few houses and also blocked traffic. Orchards hard hit, with much of unripe fruit knocked from trees, and many trees broken. Several localities had severe winds, indicating near tornadic action. Heavy loss sustained by truck gardeners. Heavy rain in Kansas City flooded low streets; power- and communication lines broken.
MISSOURI Springfield, Greene County	18	3 p.m.				1			Electrical	Lightning hit 9-year-old girl.
MINNESOTA Jackson, Cottonwood, and Lyon Counties	18	3:15 p.m.	30	*6			1	6	Hail	In Jackson and Cottonwood Counties hail up to 1-1/2 inches in diameter damaged crops throughout 125-square mile area; many fields 100 percent loss. Some hail also observed north of Marshall, Lyon County; damage considered light. Storm moved southeastward.
IOWA Johnson and Cedar Counties	18	3:30 p.m.					5	4	Rain and electrical	Flooded low-lying areas of Iowa City and burned 2 houses. Storm moved southeastward.
IOWA Dickenson and Emmet Counties	18	3:45 p.m.	7	*5			3	5	Hail	Storm moved east-northeastward.
KANSAS Shawnee and Jefferson Counties	18	3:45-4 p.m.	3	*1			3	4	Hail	Hail ranging in size from 1/2 to 1-1/2 inches fell over area of about 4-square miles, beginning 8 miles north of Topeka. Crops badly damaged and 30 small pigs killed. Hail accumulated to depth of 2 inches. Hail also reported near Grantville. Storm moved southeastward.
MINNESOTA Norcross (10 miles northwest of), and Elbow Lake, Grant County	18	3:59 p.m.			0	0			Tornado	Tornado funnel seen 10 miles northwest of Norcross. At 4:06 p.m., lineman near Elbow Lake reported funnel briefly touching ground. No damage resulted. Storm moved northeastward.
MINNESOTA Stevens and Pope Counties	18	4 p.m.					1	5	Hail	Hailstones, generally 1 inch and occasionally as large as hens' eggs, stripped corn and shelled small grain ready for harvest. Storm moved northeastward.
NEBRASKA Maywood-Wellfleet areas, Frontier and Lincoln Counties	18	4 p.m.					3		Hail	Storm moved southeastward.
IOWA Sioux and Plymouth Counties	18	Afternoon	20				1	5	Hail	Damaged field crops. Storm moved southeastward.
MONTANA Plevna, Fallon County	18	Afternoon			1				Electrical	Boy killed by lightning.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
SOUTH DAKOTA Eastern portion	18	Afternoon			0	0		5	Hail and tornadoes (suspected	No wind damage, but 2 funnel clouds reported (unconfirmed) north of Avon. Heaviest hail losses in extreme southeast.
MISSOURI Harrisonville, Cass County	18	Late afternoon							Wind	Powerlines downed, causing buildings to burn.
MINNESOTA Brooten (8 miles north of), Stearns County	18	5:25 p.m.			0	0			Tornado	Funnel reported, did not touch ground.
KANSAS Russell and Ellis Counties	18	6:45 p.m.			0	0			Wind, tornado, electrical, hail, and dust	Severe conditions began to develop near Hays shortly before 7 p.m., with duststorm and wind gusts estimated at 70 m.p.h. At Russell gusts of 92 m.p.h., recorded at C.A.A. station at 6:45 p.m., and at both places dust reduced visibility to almost zero. Trees broken, oil derricks blown down, several motor accidents occurred, and communication and powerlines broken. Small funnel observed to hit ground in open field 1 mile east of Bunker Hill, Russell County. Storm moved eastward.
MINNESOTA Litchfield and southward, Meeker County	18	7 p.m.	5	*5			3	5	Hail	70 farms suffered crop losses. Storm moved southeastward.
NEBRASKA Cedar Bluffs (near), Saunders County	18	7 p.m.	7	*2	0	0	2	3	Hail and tornado (suspected)	Barn unroofed. Storm moved eastward.
NEBRASKA Aurora (2 miles north of), Hamilton County	18	7:25 p.m.			0	0			Tornado	
NEBRASKA Richardson County (northern portion)	18	7:30-8:30 p.m.					4	5	Hail	Hailstones 1/2 to 1 inch in diameter.
MINNESOTA Washington, Ramsey, and Hennepin Counties	18	8:30 p.m.	12	*1			3	5	Hail and electrical	Hail 3/8 inch in diameter damaged crops. At St. Paul lightning set fire to roof of home. Police radio transmitter also knocked out. In southwestern Minneapolis some wires and trees downed. Storm moved southeastward.
NORTH CAROLINA Nash and Wayne Counties	18	8:30 p.m.						4	Hail	6-square miles damaged.
NEBRASKA Nemaha County (south-central portion)	18	9 p.m.	10	*3			1	4	Hail	Hailstones up to 1 inch in diameter.
KANSAS Atchison and Brown Counties	18	9-11 p.m.							Hail and wind	Hail fell in several strips over the 2 counties. One that was particularly serious was from Hiawatha northeastward which riddled corn fields. Hailstones still as large as marbles at noon next day. High, gusty winds blew down some trees and added to force of hail. Hail also fell at Atchison.
KANSAS Miltonvale (near), Cloud County	18	9:30 p.m.							Hail and wind	Hail, some as large as golf balls, damaged crops, broke window glass, and killed numerous birds. Accompanying wind destroyed a number of farm buildings. Storm moved eastward.
FLORIDA Belleview, Marion County	18	P.m.			1				Electrical	
MISSOURI Kansas City, Jackson County	18	Night							Hail and wind	Hail big as walnuts; wind at 80 m.p.h. Corn damaged.
MISSOURI Chillicothe, Livingston County	18	Night							Rain, electrical, wind, and hail	1.76-inch rain in 1/2 hour. Local flooding. Lightning damaged transformers.
COLORADO Northeastern portion	18								Rain, hail, and wind	Heavy rain, with hail and wind hit in Lincoln County in vicinity of Genoa and Karval. Some hailstones as large as hens' eggs and driven by strong wind. Leaves stripped from trees, windows broken, and extensive damage to crops. Hail piled up to depth of 5 to 10 inches in places. Longmont, Boulder County, also had hail, which battered crops and gardens. Storm moved southward.
WEST VIRGINIA Berkeley and Jefferson Counties	18		7	*1			5		Wind, hail, and rain	Storm passed through rich orchard area. Fruit, trees, and orchard equipment damaged. Storm apprently moved east-southeastward. Losses given include both property and crop.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	18									Minor storms also reported in Baldwin, Mobile, and Washington Counties, Ala.; in Savannah area, Ga.; at Decatur, Ind.; in Henry and Lee Counties, Iowa; at Wakefield, Kans.; and in Bamberg and Horry Counties, S.C.
WISCONSIN Baraboo area, Sauk County	18-19	4 p.m.,18th -3 a.m., 19th					4	4	Rain, hail, and wind	Losses from flooding. 5 to 6 inches of rain fell. River rose 5.7 feet in 5 hours. Roads and field crops heavily eroded.
OKLAHOMA Great Salt Plains Lake, Alfalfa County	19	7:20 a.m.			0	0			Tornadoes and rain	Weather Bureau employee sighted 2 funnels aloft, moving southeastward.
OKLAHOMA Hugo, Choctaw County	19	11:15 a.m. -noon							Wind and rain	Strong winds damaged heavy-laden fruit trees, TV antennas, utility lines, and tree limbs. Storm moved southeastward.
MASSACHUSETTS Springfield, Hampden County	19	1-1:02 p.m.	**500		0	0	2	1	Dust devil	Several panes of skylight blown out. Debris observed about 1,000 feet in air. Storm moved eastward.
ILLINOIS Union and Pike Counties	19	1:15 p.m.					3	5	Hail	Heavy damage to peach orchards and vegetable crops in strip 6 miles wide and 20 miles long. 100,000 bushels of peaches damaged just before harvest due to begin at Cobden. Hail damage also occurred in Pittsfield area.
WISCONSIN Monroe and Dodgeville, Green and Iowa Counties	19	1-2 p.m.							Rain and hail	At Monroe 3.31 inches of rain and hail. At Dodgeville 2.50 inches of rain and 3/4-inch hail.
MONTANA Peerless (2-1/2 miles east of), Daniels County	19	2 p.m.	30	*5			3	5	Hail	Hailstones size of walnuts.
ARKANSAS Corinth area to north of Nashville, Howard County	19	3 p.m.	12	*3			4	1	Wind	Severe wind damage to peach trees.
IOWA Butler and Black Hawk Counties	19	3 p.m.	10	*4			3	4	Hail	Crops destroyed and buildings damaged. Storm moved eastward.
MASSACHUSETTS Lunenburg, Worcester County	19	Afternoon			0	0			Dust devil	Funnel of whirling air swooped down on windrows of hay in field for 3 or 4 minutes. Hay sucked up and then dropped when dust devil reached clump of trees at end of field. Storm moved eastward.
MISSOURI Alton, Oregon County	19	3 p.m.			1				Electrical	Man struck by lightning.
SOUTH CAROLINA Anderson, Horry, Lee, and Florence Counties	19	Afternoon					4	4	Rain, hail, and wind	Unusually heavy rains in northern Horry County drowned 64 hogs, temporarily completely inundated tobacco fields, and flooded 3 houses.
MISSISSIPPI Tippah County	19	3:50 p.m.			0	0	3	3	Tornado (suspected)	At Ripley observer reported 2 circular clouds and heavy thunderstorms; crops, buildings, and trees damaged in spots over about one-half of County.
COLORADO Arkansas Valley	19	4 p.m.			0	0	5		Rain, hail, wind, electrical, and tornadoes	Cloudburst in Telephone Gulch, sent 10-foot wall of water into Royal Gorge (in vicinity of inclined railroad), where 70 tourists had descended on scenic railway into Gorge. Torrent swept small girl off platform, but one of group of tourists grabbed her from tumbling into river. Damage to inclined railroad estimated at $10,000. South and east of Canon City, hail damaged crops and other property. In Wetmore area, Custer County, damage estimated to be $100,000. Farther east in Arkansas Valley 3 small tornadoes observed, one of which tore roof off house, south of Las Animas.
MICHIGAN Berrien and Cass Counties	19	4 p.m.	7	*2		1	4	5	Hail, rain, and electrical	Hail ruined fruit and vegetable crops in Stevensville-Sodus area. Hailstones of 3/4-inch diameter reported. Heavy rains occurred elsewhere in Berrien County and extended into Cass County. Storm moved eastward.
TENNESSEE Tiptonville (8 miles north of), Lake County	19	4-5 p.m.	6	*2			3	5	Hail and rain	Heavy rain, black clouds, and severe hail. A few trees uprooted. Heavy hail damaged 1,500 acres of cotton, 500 acres of corn, and 3,000 acres of soybeans. Storm moved southeastward.
KENTUCKY Bracken and Pendleton Counties	19	4:15-4:30 p.m.	20	*1	0	0	5	5	Tornado and hail	Tobacco and corn in more than 60 acres ruined by hail. Barns destroyed, homes damaged, and trees uprooted. Storm moved eastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ILLINOIS Northern portion	19	4:45 p.m.					4	5	Hail	Scattered hail damage reported from Sterling, Ottawa, and western edge of Chicago.
MISSOURI Rowena, Audrain County	19	Late afternoon	1-2				2		Hail, wind, and rain	Odd-shaped hailstones like flat slabs 2 to 3 inches long. Severe crop damage on at least 20 farms. Storm moved southeastward.
MISSOURI Poplar Bluff (east of), Butler County	19	Late afternoon							Wind, hail, and rain	Severe damage on 20 farms.
KANSAS Baxter Springs, Cherokee County	19	5:45 p.m.			0	0	2		Tornado and rain	Small tornado blew off roof of cement plant, and knocked out power- and telephone lines.
TEXAS Littlefield (west of), Lamb County	19	6 p.m.	3	*3	1				Hail and electrical	Farm worker killed by lightning. Several thousand acres of cotton destroyed. Hail 8 to 10 inches deep in level fields. Storm moved eastward.
INDIANA Michigan City, La Porte County	19	6:25 p.m.					3	1	Wind	Winds of 50 to 60 m.p.h., with gusts to 75 blew down trees and limbs which damaged 3 houses, car, and utility lines. Numerous TV antennas damaged.
INDIANA Huntington and Wabash Counties	19	Evening	17	900			1	4	Hail	Crops damaged in path extending from 1 mile east of La Fontaine to Plumtree. Storm moved east-northeastward.
MISSOURI Clinton, Henry County	19	Late evening							Rain and electrical	5 inches of rain. Farm buildings damaged by lightning.
MISSOURI Coschertown, St. Charles County	19	Late evening							Hail, wind, and rain	Many birds killed by hail. Severe damage to vegetables and corn.
SOUTH DAKOTA Mission, Todd County	19								Hail	Hailstones hens' egg sized.
	19									Minor storms also reported at Mobile, Sheffield, and Tuscumbia City, Ala.; at Hope and Searcy, Ark.; at Lowell, Ind.; in Lewis County, Ky.; near Grenada and at Houston, Miss.; at Hannibal and St. Charles and in Butler County, Mo.; in Lee and Rowan Counties, N.C.; and at Cardin and Picher, Okla.
TEXAS Tahoka area, Lynn County	19-20	Afternoon							Hail	Several hundred acres of cotton destroyed or badly damaged, west of Tahoka on 19th, east of Tahoka on 20th.
NORTH CAROLINA Moore and Montgomery Counties	19-20				3		5	5	Rain	Up to 10 inches of rain caused flash flood on minor creeks; 30-foot rise on Bear Creek. 3 persons drowned when 2 autos washed off bridge. Heavy washouts of highways, railways, and low grounds.
VIRGINIA Waynesboro, Augusta County	20	8 a.m.-12:30 p.m.							Rain	3.92 inches measured between 8 a.m., and 12:30 p.m.; 4.50 inches in 15-hour period. Some business and residential areas flooded.
VIRGINIA Charlottesville, Albemarle County	20	Morning-early afternoon			1				Rain and wind	5-year-old boy slipped and fell in Schenks Branch and drowned. This creek normally a trickle was flooded over banks. Basements of nearby buildings flooded. Rivanna River rose around 1.5 feet above normal, but subsided rapidly when rain halted in midafternoon. Some 200 telephones out and trees and limbs downed by winds.
VIRGINIA Richmond, Henrico County	20	12:15-1:15 p.m.			0	0	5		Tornadoes, wind, rain, and electrical	Funnel not touching ground sighted over runway at Byrd Field 400 yards from station. 3 other funnels, 2 in southern part of city and 1 in Seven Pines reliably established. Flash flooding of streets, but only minor damage. All damage reported was from winds; 48 m.p.h., recorded at WBAS Richmond. Storm period around 12:15 p.m.-1:15 p.m.
NEW MEXICO Curry County (southern portion)	20	2 p.m.	12	*6			1	4	Hail	Hailstones up to 1 inch in diameter. Storm moved south-southwestward.
MICHIGAN Branch County	20	2:45 p.m.				1	3	4	Hail	Hail damaged crops and smashed windows in southwestern Branch County. 1 person injured by lightning.
INDIANA Bristol, Elkhart County	20	Early Afternoon			0	0	1	3	Tornado, wind, and hail	Violent winds and hail uprooted trees, tore diving rafts from their moorings, and shredded corn fields in Stone Lake area. Storm described by cottagers as "baby tornado." Trees fell in several directions.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Liberal (13-1/2 miles north of), Seward County	20	Afternoon				2			Rain and wind	Heavy rain blurred vision and severe winds whipped car into ditch. 2 of the occupants hospitalized from shock and cuts from glass.
TEXAS San Saba, San Saba County	20	Afternoon			0	0	3		Tornado	Ranch house unroofed and stone house and barns damaged.
MARYLAND Hagerstown Valley, Washington County	20	Afternoon-evening					5		Rain	Heavy rains and flash floods caused damage estimated at hundreds of thousands of dollars when Little Antietam Creek pushed over its banks. Many families forced to leave their homes; farm animals drowned, roads and bridges washed out, and many districts completely cut off for a time by high waters. Heavy rainfall at Keedysville 5.92 inches, Chewsville and Bridgeport 6.69 inches.
TEXAS Waco area, McLennan County	20	5-6 p.m.					5		Rain, hail, electrical, and wind	Rain up to 4 inches in south Waco. Main damage to furniture company where water tower crashed through roof. Wind gusts to 50 m.p.h. Hail marble size to baseball size. Lightning destroyed hay barn. Winds unroofed several houses, blew down trees, and destroyed TV antennas.
KANSAS Allen, Anderson, Bourbon, and Crawford Counties	20	6:30-8:05 p.m.	80	*1/2-3	0	5	5	5	Tornado, hail, wind, electrical and rain	Major damage extended from near Westphalia, Anderson County, approximately 25 miles southeastward to between La Harpe and Moran and from about 4 miles northwest of Hepler southeastward 25 miles to Pittsburg, Crawford County. Distinct roar of tornado reported by numerous persons along path. Storm began at Westphalia about 6:30 p.m., and hit near Carlyle about 7 p.m. Lightning struck barn west of La Harpe at 7:15 p.m. Destruction resumed 4 miles northwest of Hepler at 7:45 p.m., and reached Pittsburg at 8:15 p.m. Storm lasted approximately 15 to 20 minutes. 3 girls bruised by hail when they abandoned their car and sought refuge in ditch near Moran. Man received shoulder injury when blown from roof near Arma and another man cut by hail before he was able to reach protection west of Hepler. Hail and violent winds chief cause of damage. Corn fields riddled, houses unroofed, church collapsed east of Carlyle, trees uprooted, communication and powerlines broken, soybean fields looked like they had been plowed, and pasture grasses ruined. Flower pots cracked and flowers twisted, but not turned over. Windows blown both out and in, and many broken by hail. Plaster loosened in houses twisted by wind and some farm animals and fowls killed. Some hail near Colony as large as tennis balls, but most stones less than 1 inch in diameter, but numerous and wind-driven. Drifts remained on the ground until next day. Before storm, corn was well filled and was estimated to make 70 bushels per acre. Near Hepler torrential rain of 2 to 4 inches fell in 15 minutes. 1 large rancher estimated his loss at $90,000.
OHIO Lorain County	20	6:45 p.m.	1-1/2	175	0	0	3	3	Tornado	No heavily populated areas hit. Main damage to orchard trees, several of which uprooted and carried away, and to farm buildings. Storm moved southeastward.
INDIANA Wabash and Huntington Counties	20	8-9 p.m.	18	900			1	4	Hail	From east of La Fontaine to Warren then to Plumtree crops severely damaged by hail up to 3/4 inch in diameter. Severe thunderstorms associated with hail. Storm moved east-northeastward.
INDIANA Goshen area, Elkhart County	20	9 p.m.			0	0			Tornado	Pilot observed severe thunderstorms southeast of Goshen and tornado cloud briefly touched ground.
IDAHO Latah and Nez Perce Counties	20	Evening				2			Wind, hail, and rain	Considerable crop damage in Moscow, Thorncreek, Joel, and Troy areas. 1 home southeast of Moscow washed off its foundation. About 6:15 p.m., strong wind caused car to roll over several times near Lapwai, 2 occupants slightly injured.
MARYLAND Rock Creek area, Montgomery County	20	Evening			6		5		Rain	Rock Creek roared out of its banks to sweep cars off roadways and caused heavy damage to roads and bridges. 8 highway bridges washed out or seriously damaged. 5 persons drowned when their automobiles swept off road near Laytonsville into Little Seneca Creek. Rockville volunteer fireman perished when he was working with crew of firemen checking 2 abandoned automobiles near bank of Rock Creek when he was swept away.
MARYLAND Metropolitan Baltimore area, Baltimore City, and Baltimore County	20	Evening							Rain	Baltimore City and County police received more than 1,500 emergency calls for aid as heavy rainstorm dumped unprecedented amounts of precipitation over western portions of Metropolitan Balitimore. Precipitation totals up to 7.25 inches reported at

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MARYLAND (Cont'd)										Pikesville. In all parts of City basements flooded, floors in many houses covered with foul-smelling mud, and some lawns washed away. Hardest hit was Mt. Washington area where some residents forced to abandon their homes after water from overflowing Jones Falls swirled into their basements. At Daniels, near Ellicott City, about 500 persons marooned for a time as Patapsco River rose to reported 25 feet above normal level. Some residents in western suburbs of Baltimore reported 8 feet of water in their basements, with TV sets and freezers bobbing up and down like corks. According to report of Johns Hopkins University, Department of Sanitary Engineering, western part of Baltimore experienced rainfall amounts which exceeded previous maximum values for 2 to 12-hours duration based on Weather Bureau (Customs House) gage for period of record beginning in 1893. Maximum rainfall intensities occurred near end of storm, thus favoring high runoff rates. This storm more severe than hurricane "Connie" (Aug. 12-13, 1955) except for total amount of rainfall. Rain gages in vicinity of northwestern Baltimore received amounts for 3 and 6-hour periods which have an estimated return period of 100 years on the average. Further, this storm demonstrated that 100-year and 10-year rainfall intensities can occur during same storm within a few miles.
NEVADA Reno area, Washoe County	20	Evening			4				Rain	Heavy thundershowers vicinity of Reno caused flooding on Peavine and Galena Creeks; 4 persons drowned. Severe damage to public utilities, but unable to set value; $5,000 damage to streets; many thousands to buildings and other property.
IOWA Black Hawk County	20						1	4	Hail	
IOWA Keokuk County	20		15	*8			1	5	Hail	
PENNSYLVANIA Erie County	20						1		Wind and rain	High winds and pounding rains caused almost irreparable damage to 3 major Erie County crops; hay, wheat, and grapes.
	20									Minor storms also reported in Marion County, Ind.; in Dubuque County, Iowa; at Big Hill, Kans.; at Wakenda, Mo.; in Brunswick County, N.C.; at Edmond, Kingfisher, and Oklahoma City, Okla.; in Timmonsville area, S.C.; in Arlington, Fairfax, Hanover, and Northumberland Counties, Va.; and at Anatone, Colfax, Ritzville, Spokane, and Sunnyside, Wash.
TEXAS Huntsville, Walker County	21	Morning			1				Electrical	Man killed by lightning.
ARKANSAS Scott (6 miles southeast of), Pulaski County	21	1 p.m.						4	Hail	Principal damage on 1 farm, all due to hail. Stones from 1 to 1-1/2 inches in diameter reported. Storm moved southwestward.
ILLINOIS Chicago, Cook County	21	Afternoon				2			Electrical	Lightning struck 2 pennant poles at Wrigley Field, injuring 2 persons at baseball game.
NORTH CAROLINA Johnston County	21	Afternoon				1			Electrical	Lightning knocked boy unconscious.
WISCONSIN Beaver Dam (west of), Dodge County	21	4 p.m.			0	0			Tornadoes	Briefly touched ground; moved eastward; 3 other funnels.
ARKANSAS Marked Tree to Wilson, Poinsett and Mississippi Counties	21	4 p.m.			1		3	2	Thunderstorm	Girl killed by falling tree. Considerable damage to trees and roofs.
MISSOURI Morley-Blodgett areas, Scott County	21	4:30 p.m.							Rain, wind, and hail	Severe damage to corn and cotton. Heavy rains caused local flooding.
KANSAS Southeastern portion	21	4:30-10:30 p.m.			0	1			Wind, electrical, hail, rain, tornado, and dust	Storm began about 4:15 p.m., near Hutchinson, progressing eastward and southward with last damage reported in Cherokee County about 10:30 p.m. In Hutchinson, Newton, and Wichita areas severe wind, estimated at 65 m.p.h., caused minor damage to buildings and trees and raised dust so thick that traffic was halted. Dust lasted for approximately 15 minutes and was followed by torrential rains for short period. Small tornado, reported by the

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
KANSAS (Cont'd)										Harvey County Sheriff's Office, destroyed barn south of Newton at 5:15 p.m. Lightning over storm area especially severe. North of Wichita at 5:25 p.m., barn struck by lightning and burned, including 75 tons of hay, loss $4,100. At Hutchinson firemen answered 5 calls due to lightning strikes. Near Burlington man riding tractor stunned when struck by lightning at 5 p.m. In Neodesha approximately $800 damage done to appliances, furnishings, and clothing at 9:40 p.m. Large hay barn struck and burned near Columbus about 10:30 p.m. Hail fell near Hutchinson.
ARKANSAS Hazen, Prairie County	21	5 p.m.	5	880			4	1	Wind	Considerable damage to roofs, powerlines, and trees. Storm moved southeastward.
TENNESSEE Tipton and Shelby Counties	21	5:15 p.m.			1	0		1	Thunderstorm and tornado (suspected)	Violent thunderstorm first reported near Wilson, Ark., struck Randolph Landing, 25 miles up Mississippi River from Memphis, sinking 80-foot tow boat 75 feet offshore; crew saved and 6 barges being towed later picked up. Small tornado funnel seen about 5:15 p.m., to touch down about 5 miles southeast of Millington by pilot stationed at Memphis Naval Air Station. Highway Patrol sent car into area, but no damage found. Funnel was brownish blue in color, filled with dust and debris and the officer estimated that it extended up to lowest clouds which were about 2,000 feet. His estimate placed the tornado between Millington and Ellendale near crossing of Covington Pike and Loosahatchie River.
OKLAHOMA Tulsa and Rogers Counties	21	6 p.m.			0	0	3	1	Tornado, wind, hail, and electrical	Strong winds blew down bleachers at rodeo grounds in Skiatook. Funnel reaching within 100 feet of ground observed at Collinsville. Lightning struck barn, resulting in fire which destroyed barn and 13 tons of hay near Claremore. Storm moved northeastward.
OKLAHOMA Holdenville, Hughes County	21	10:30 p.m.						1	Wind, rain, and electrical	Strong winds blew out sides of garage and the roof caved in on 2 automobiles. Trees, TV antennas, and utility lines blown down. Storm moved eastward.
FLORIDA Pensacola, Escambia County	21	P.m.			1				Electrical	Lightning killed fisherman in boat.
IDAHO Camas County	21								Rain	2-1/2 inches of rain in less than 20 minutes reported near Fairfield. Barley and peas damaged. Considerable erosion.
NORTH CAROLINA Pasquotank County	21				0	0			Waterspout	Seen on Pasquotank River.
SOUTH DAKOTA Millboro, Tripp County	21					1			Electrical	Farmer struck by lightning while stacking hay.
	21									Minor storms also reported at Brinkley and Holly Grove, Ark.; at Valley Falls and in Atchison and Jackson Counties, Kans.; at Louisville, Ky.; at Byhalia, Miss.; at Avilla, Carthage, Joplin, and Reeds, Mo.; and in Lexington and Richland Counties, S.C.
INDIANA South Bend (2-1/2 miles south-southeast of), St. Joseph County	22	12:40 a.m.			0	0			Tornado	Funnel cloud observed, moving northeastward, by pilot.
MISSOURI Millhelm, Perry County	22	1:30 a.m.							Wind, hail, and rain	Many trees and buildings damaged by wind. Much damage to corn.
OKLAHOMA Ponca City (10 miles west of), Kay County	22	2:36 a.m.			0	0			Tornado	Pilot reported sighting funnel. Evidently remained aloft as no damage reported.
OKLAHOMA Blaine and Kingfisher Counties	22	3:23 p.m.			0	0			Tornado, wind, rain, hail, and electrical	Tornado sighted on ground 2 miles west of Canton, but no damage resulted. It dipped to ground momentarily and dissipated in clouds. Hail wiped out cotton and other crops over area 3 miles long and 1 mile wide west of Watonga. Lightning struck garage 1/2 mile east of Hennessey in Kingfisher County and resulting fire destroyed building.
KANSAS Geary, Wabaunsee, and Dickinson Counties	22	Afternoon-evening					4	4	Wind, hail, and electrical	Severe winds, locally heavy hail, and several lightning strikes occurred in Junction City area. Heavy hail, up to 1 inch in diameter, fell near Skiddy in extreme southern Geary County. Hail remained in

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
KANSAS (Cont'd)										drifts until next day. Truck farm with 9,000 irrigated tomato plants, just getting into good production, severely damaged. Wind caused some building damage. Storm lasted in varying intensity from about 2:30 to 6:15 p.m. Damage heaviest in Dickinson County, but extended into western Wabaunsee County.
Missouri Linn, Osage County	22	9:30 p.m.							Rain and wind	Estimated 4 inches of rain caused local flooding.
VIRGINIA Loudoun County	22						5		Rain and wind	Heavy rains and high winds in Round Hill-Purcellville-Hamilton-Leesburg areas downed many trees, causing widespread power failures and damage to roads by flash flooding. 593 telephones out of order. Damage to electric company equipment estimated at $45,000, to roads $8,000 to $9,000.
	22									Minor storms also reported at Leon, Kans.; in Boyd, Washington, and Whitley Counties, Ky.; at Angola and Port Sulphur, La.; at Ann Arbor, Mich.; at Carthage, Mo.; at Canute and Elk City, Okla.; and at Soldier Summit, Utah.
NORTH CAROLINA Vance County	23	Morning				2			Electrical	Lightning stunned woman and son in home.
MISSOURI Neosho, Newton County	23	Afternoon				1			Electrical	Lightning hit radio transmitter.
MISSOURI St. Charles, St. Charles County	23	Afternoon							Rain and wind	2.60 inches rain in about 1 hour caused local flooding.
MARYLAND Ocean City (6 miles north of), Worcester County	23	5:30 p.m.			1	1			Electrical	Lightning killed surf fisherman on beach; companion knocked unconscious by the bolt. The 2 fishermen stopped fishing when sudden squall blew up and while they were putting away their gear. When survivor regained consciousness he was lying face down on sand; he had heard nothing and saw nothing; his friend was lying about 50 feet away.
MISSISSIPPI Picayune (west of), Pearl River County	23	6:50 p.m.			0	0	3		Tornado	Pilot reported tornado; no other report so probably never touched ground or only in uninhabited swamps.
ARIZONA Phoenix area, Maricopa County	23	After 11 p.m.			1	2	2	1	Thunderstorm and dust	Man killed in automobile crash south of Tempe. 2 other persons injured in head-on collision. Both accidents attributed to blowing dust.
VIRGINIA Remlik and Lagrange Creek areas, Middlesex and Culpeper Counties	23								Hail	Hailstones size of golf balls broke windows and damaged crops.
	23									Minor storms also reported at Melrose, Kans.; at Alexandria, La.; in Clark and Elko Counties, Nev.; in Montgomery County, N.C.; in Bucks and Montgomery Counties, Pa.; at Jericho, Vt.; and at Staunton and Williamsburg, Va.
VIRGINIA Eastern Shore	23-24						4		Electrical and wind	Barn struck by lightning completely destroyed by resulting fire. Some wind damage.
TEXAS White Rock Airport, Dallas County	24	1:50 p.m.					3		Wind	6 light planes destroyed or damaged. Wind gusts estimated at 65 m.p.h. Storm moved northeastward.
TEXAS Rendon, Tarrant County	24	2:30 p.m.			0	0	3		Tornadoes	2 small tornadoes. One struck and destroyed a barn. 2 by 4-inch lumber driven 1 foot into ground 150 to 300 feet away. Pipe pulled out of well. Other tornado struck barn, carried off roof. 2 by 6-inch lumber carried 400 feet away. Tree limbs twisted off.
VIRGINIA Nottoway and Prince Edward Counties	24	Early afternoon			0	0			Tornado, rain, wind, and hail	C.A.A. communicator observed funnel cloud from 1:44 to 1:47 p.m., about 15 miles west-northwest of Blackstone Airport, but funnel did not reach ground. Attendant thunderstorm produced heavy rains, minor flooding; and winds blew down trees in scattered areas. Hail in Blackstone, Farmville, and Crewe areas measured 1/2 inch in diameter. Some crop damage resulted.
MAINE Aroostook County	24	Afternoon			0	0			Thunderstorm and tornado (suspected)	Electrical storms throughout County caused power failures, ranging up to 1/2-hour duration. Observers at Loring Air Force Base, Limestone, reported seeing funnel cloud dangling, but not reaching surface between 1:55 and 2:10 p.m. Storm moved eastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IOWA Chickasaw to Linn Counties	24	4:30-5:30 p.m.					3	5	Hail and wind	Crops destroyed and buildings damaged.
TEXAS Hale Center, Hale County	24	5:30 p.m.							Hail	Several hundred acres of cotton damaged by hail in same area hit by hail on July 4.
TEXAS Carthage, Panola County	24	6:30 p.m.			0	1	4		Tornado	Homes damaged, garage destroyed, trees uprooted. Injury due to broken glass.
	24									Minor storms also reported in Henry County, Iowa; at Waterville, Maine; in northern Worcester County, Mass.; at Las Vegas, Nev.; in Guilford County, N.C.; at Hackneyville and Richmond, Va.; at Greybull, Wyo.; and near Wibaux, Mont.
MICHIGAN (Lower) Extreme southern portion	25	Day				1	3	4	Electrical, hail, and rain	Lightning injured 1 person in Kalamazoo, and damaged power- and telephone lines in Washtenaw County. Hail damaged crops in Tipton, Lenawee County.
ALABAMA Talladega, Talladega County	25	Noon				2			Electrical	2 boys injured by lightning when cleaning fish under a tree, on Coosa River.
KANSAS Johnson County	25	Afternoon							Hail and rain	Hail near DeSoto damaged crops and killed chickens. In DeSoto and at Sunflower trees, gardens, and windowpanes suffered worst damage in many years.
ILLINOIS Mansfield, Piatt County	25	3:30 p.m.			0	0			Tornado	Typical funnel with inverted cone and narrow rope-like extension which whipped around and lasted 10 to 15 minutes, but did not touch ground.
ARIZONA Kingman area, Mohave County	25	4 p.m.					4	1	Rain, hail, and wind	Most damage caused by flooding.
ARIZONA Phoenix area, Maricopa County	25	4-6:30 p.m.			0	0	3	2	Wind and tornado	Wind damaged utilities, businesses, and homes. Small tornado did $250 damage along path 200 feet long and 5 yards wide. Storm moved southwestward.
ALABAMA Bessemer, Jefferson County	25	4:25 p.m.					4	1	Wind and electrical	Wind damage $300. Lightning damage $20,000 including house burned.
ARIZONA Arlington (10 miles south of), Maricopa County	25	5 p.m.			0	0			Tornadoes	3 funnel clouds moved southward 1/4 mile apart; 1 touched ground in open desert.
NORTH CAROLINA Brunswick, Sampson, Surry, and Wilson Counties	25	Afternoon-evening						5	Hail	Widely scattered severe thunderstorms caused hail damage to areas totaling 15-square miles, mostly to tobacco.
MONTANA Reserve-Medicine Lake-Dagmar areas, Sheridan County	25	9:30 p.m.	10	*4			1	4	Hail	Storm moved eastward.
SOUTH DAKOTA Eastern portion	25	P.m.			0	0	3		Electrical, hail, and tornado (suspected)	Lightning fired barn and haystacks and killed 3 cattle. Hail reached golf-ball size in Yankton County. Funnel-shaped cloud reported 75 to 100 miles northwest of Huron not confirmed.
WYOMING Cheyenne, Laramie County	25	Evening	1/2-2	5-25	0	0	3	1	Dust devils	Series of dust devils moved eastward.
NORTH CAROLINA Wake County	25	Night				1			Electrical	Lightning struck speed detection device injuring highway patrolman.
INDIANA Adams County (northern portion)	25						3		Wind and rain	Severe thunderstorms caused minor damage to property. Rain in short time exceeded 4 inches. Losses about equal between wind and rain.
	25									Minor storms also reported at Anniston, Ala.; in Johnston County, N. C.; in Branchville area, S.C.; and at Hopewell, Va.
OHIO Ashland, Ashland County	26	3-7 a.m.					5	3	Rain and electrical	Damage in this storm almost entirely by local flooding. Greatest dollar damage to Union Malleable Company stock stored in warehouse. Several houses hit by lightning. Storm moved eastward.
OHIO Wooster, Wayne County	26	4-8 a.m.					5	3	Rain	4.10 inches rainfall measured by cooperative observer. All damage mentioned was by flooding, in city of Wooster, to bridges, streets, basements, etc. This was about third heaviest

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

JULY 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OHIO (Cont'd)										thunderstorm rain measured in last 60 years. Storm moved eastward.
TEXAS Chambers County	26	9:50 a.m.			0	0			Tornado	Highway Patrol reported funnel aloft between Winnie and Galveston Bay.
LOUISIANA Houma and Franklin (near), Terrebonne and St. Martin Parishes	26	1:20 p.m.			0	0			Tornadoes (suspected)	Funnels reported by pilot near Houma and about 10 miles northeast of Franklin.
COLORADO Englewood, Arapahoe County	26	Afternoon			1				Electrical	Man struck and killed by lightning, when he was mowing his lawn.
WYOMING Elk Mountain (18 miles south of), Carbon County	26	3 p.m.			1				Electrical	
NORTH CAROLINA Duplin, Hoke, Lee, and Onslow Counties	26	3-5 p.m.						4	Hail	Total of 8-square miles damaged.
GEORGIA Ware, Colquitt, Brooks, and Glynn Counties	26	P.m.						3	Wind, rain, hail, and electrical	Severe thunderstorms accompanied by high wind and scattered hail. In Brunswick blimp destroyed at Glynco Naval Air Station when struck by lightning. Lightning also caused minor electrical damage to other parts of city. 2 automobile accidents, with $2,100 damage, result of rain-slickened roads and poor visibility. At Waycross, Ware County, wind shattered plate-glass windows, blew down porch, and disrupted telephone and electrical services. Heavy rain and hail in County caused minor damage to crops. At Moultrie, Colquitt County, high winds and hail knocked out powerlines and caused some crop damage. Hardest hit by these storms was Quitman, Brooks County. In this community high winds ripped roofs from several business houses, lightning struck several homes, large trees toppled by wind and 1 car was smashed by falling tree; 1 home set afire by lightning with damage estimated at $3,000.
OKLAHOMA Oklahoma and Lincoln Counties	26	P.m.						1	Wind, rain, and electrical	In vicinity of Jones, Oklahoma County, strong winds uprooted tree which fell on car, and several telegraph poles blown down. In vicinity of Chandler, Lincoln County, winds blew garage down on tractor and also damaged house. Another farm had roof blown off barn and garage, and numerous other buildings in neighborhood damaged. At Prague, Lincoln County, lightning struck large tree and flying bark and splinters broke windows and damaged house. TV set also damaged as was powerline leading to house.
WEST VIRGINIA Ohio County (southern portion)	26	Evening-night						1	Electrical, rain, wind, and hail	Electric power services disrupted, highways and railroad tracks blocked, gas and water lines broken, streets and homes flooded by flash floods, and sewer lines blocked.
	26									Minor storms also reported at Ocala, Fla.; at Evansville, Ind.; at Vicksburg, Miss.; and at Claremore, Okla.
UTAH Cedar City areas, Iron County	26-30						5	4	Rain and electrical	Series of thunderstorms with heavy rain along mountains south and east of city caused flooding of streets, basements, gardens, etc., in Cedar City. Most flooding on 26th. $1,000 damage to home by lightning on 28th.
KANSAS Oswego, Labette County	27	9:30 a.m.				1			Electrical	Lightning struck caretaker of cemetery during brief storm.
LOUISIANA Lafayette (2 miles south of), Lafayette Parish	27	1:17-1:21 p.m.			0	0	2	2	Tornado	Funnel cloud observed by pilot.
COLORADO Denver, Arapahoe, and Boulder Counties	27	Afternoon							Wind, rain, hail, and electrical	Series of thunderstorms, east of mountains, extending on the plains, knocked out telephone services to 1,000 telephones, wrecked light transformers, damaged crops, and flooded roads and homes in Boulder, southern and eastern Denver, and Aurora.
SOUTH CAROLINA Lexington, Richland, Fairfield, Aiken, and Orangeburg Counties	27	Afternoon				3	5	3	Electrical, wind, rain, and hail	Local thunderstorms accompanying passage of squall area caused moderate damage in southern Cayce, including destruction of skating rink, heavily damaging trailer court, 2 warehouses, with considerable minor wind damage in surrounding area. In

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
SOUTH CAROLINA (Cont'd)										Ridgeway, Fairfield County, trees uprooted, utility poles blown down, and considerable damage to a number of buildings. Storm moved southeastward.
UTAH Minersville, Beaver County	27	Afternoon					3	4	Rain	Heavy thunderstorm occurring over Big Wash caused flash flood on flats below. Water spread out over 5 miles of farmland, damaging cut alfalfa still in fields and depositing silt.
NEW MEXICO Tucumcari (west of), Quay County	27	3 p.m.	3-1/2	880			1	4	Hail	Storm moved southwestward.
SOUTH CAROLINA Barnwell area, Barnwell County	27	Late afternoon	1	Narrow	0	0	4	1	Tornado (suspected)	4 planes and 2 hangars destroyed or heavily damaged. Storm moved southward.
IOWA Harrison and Crawford Counties	27	9-10 p.m.			1		4	1	Electrical	Man killed and 2 barns and contents destroyed.
FLORIDA Tallahassee, Leon County	27	P.m.					4		Electrical	Lightning-started fire destroyed asphalt refining plant.
GEORGIA Emanuel, Richmond, Burke, Tift, Jeff Davis Bibb, and Crisp Counties	27	P.m.							Wind, rain, hail, and electrical	At Swainsboro, Emanuel County, wind did estimated $1,500 damage to farm buildings at 1 place. In Flening Heights community, just west of Augusta, Richmond County, concrete-block automobile parts building flattened, trailers carried from their foundations, and golf driving range office destroyed. In Hazelhurst, Jeff Davis County, several homes and 1 manufacturing plant struck by lightning, with only minor damage resulting. Hail fell in southwestern part of County with heavy damage to some tobacco fields. At Tifton, Tift County, high winds and lightning knocked out powerlines and caused other minor damage. Trees and lightning caused power failures and interrupted telephone service in Macon as many trees blown down on utility lines. Much of Cordele and Crisp County without electric power following wind- and electrical storm in that area.
VIRGINIA Washington County	27	Evening							Wind, electrical, hail, and rain	Severe thunderstorm in Bristol and vicinity.
	27									Minor storms also reported at Kendallville, Ind.; at Havana, Kans.; near Emmorton, Md.; and in Beaufort County, N.C.
SOUTH CAROLINA Sardis area, Florence County	28	1-2 a.m.					2	5	Hail, wind, and electrical	Crops damaged by hail over 3- to 4-square mile area and 1 mule killed by lightning.
NEBRASKA Nehawka (3 miles northeast of), Cass County	28	4:30 a.m.	1	100	0	0	3	1	Tornado (suspected)	Large trees twisted off. Barn roof partially removed and scattered. Roaring noise heard when cloud passed over Avoca, 12 miles southwest. Storm moved northeastward.
FLORIDA Pensacola, Escambia County	28	A.m.					5		Electrical	Lightning-started fire destroyed fertilizer plant; damages estimated at several hundred thousand dollars.
MASSACHUSETTS Plymouth, Plymouth County	28	12:45 p.m.			1	10			Electrical	Only a single bolt of lightning attended storm. This bolt struck and killed man repairing roof, and injured 2 coworkers and 8 additional persons in that house and one adjacent.
OKLAHOMA Nowata County	28	12:45-2:30 p.m.						2	Wind, rain, and hail	Severe thunderstorm with wind, rain, and hail destroyed garage, moved house on it's foundation, uprooted trees, and damaged another garage at Coodys Bluff. Strong wind blew roofs off and overturned 12x30-foot granary in vicinity of Lenapah.
ILLINOIS Fayette, Montgomery, Effingham, and Crawford Counties	28	2:30 p.m.	70				4		Wind, rain, and hail	Heavy thunderstorms moved eastward from Hillsboro through Ramsey to Altamont and Oblong. Damage by wind to buildings and trees plus some damage by heavy rain and hail.
KENTUCKY Madison County	28	3:25 p.m.			0	0	3	3	Wind, hail, and tornado (suspected)	Tobacco damaged by hail and fields of corn flattened by wind. Barns and other buildings damaged. Trees twisted and uprooted. Storm moved southeastward.
SOUTH CAROLINA Johnson, Edgefield County	28	Afternoon					1	5	Hail, wind, and rain	Severe hail struck in heart of peach belt; losses included 12 carloads of peaches, 185 acres of cotton, 55 acres of corn, and 38 acres of other crops.
ALABAMA Clio, Barbour County	28	5 p.m.					4	1	Electrical	Lightning destroyed house by fire.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

JULY 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NORTH CAROLINA Cumberland, Davie, Hoke, Surry, and Vance Counties	28	5-10 p.m.						5	Hail	Total of 50-square miles damaged.
INDIANA Wheatland area, Knox County	28	5:39 p.m.			0	0	3	3	Tornado and electrical	State Police reported small tornado damaged some trees and crops. Lightning and resulting fire consumed farm near Wheatland. Lightning damage about $4,000.
OKLAHOMA Webbers Falls, Muskogee County	28	5:45 p.m.			1				Electrical	Lightning struck and killed man inspecting his cotton field.
NORTH CAROLINA Wake County	28	7-9 p.m.					5	5	Electrical and hail	Lightning struck steeple, burned large church in Raleigh. Hail damaged tobacco.
PENNSYLVANIA Eastern half	28	9-12 p.m.			1	8	4	1	Electrical and rain	Series of thunderstorms accompanying cold front caused considerable damage in Schuylkill, Northumberland, and Luzerne Counties and in southeast. Near Elysburg, Northumberland County, 1 man killed and 2 others standing nearby injured when lightning struck shed in which the men were working. In Sunbury, apartment building hit by lightning and set afire, however, damage slight due to quick work of firemen. At Pottsville, cow and heifer electrocuted during height of storm. Near Bloomsburg, cottage struck by lightning set afire with damage of $4,000. By evening storms moved into southeastern counties. Near Phoenixville, lightning struck 6 persons in amusement park, stunning 5 and knocking 1 unconscious. However, all were in good condition after being treated for shock. In Lancaster, lightning hit home and started fire which caused estimated $3,000 damage. Heavy rain caused local flooding of streets. By midnight storms had passed out of State.
INDIANA Auburn, Dekalb County	28	9:30 p.m.					5		Electrical and wind	Lightning and resulting fire destroyed cleaning establishment. Gusty winds leveled 2 homes under construction. Trees, utility lines, and theater screen blown down. Damage about equal between lightning and wind.
KENTUCKY Shelby County	28	P.m.					4	5	Wind, hail, and electrical	Strong winds blew off roofs, tore down trees and fences, and broke off grown tobacco plants, destroying in some places entire fields. Hail damaged garden produce. Electric lines knocked out of commission. Lightning struck and burned 2 large barns, destroying contents.
ALABAMA Lawrence County	28	Evening					4	1	Electrical and wind	Wind damage $1,300; lightning burned barn and house, with losses of $12,000.
NORTH CAROLINA Cabarrus, Guilford, Harnett, Iredell, and Person Counties	28	Night					4	5	Electrical, hail, and wind	Hail damaged crops. Wind $5,000 and lightning $5,000 to buildings and utilities.
INDIANA Centerville, Wayne County	28				1	1			Electrical	Lightning struck and killed girl who was standing under tree in backyard of her home during thunderstorm. Her sister stunned.
LOUISIANA East Carroll Parish	28						2		Hail	Hailstorm in parts of Parish caused considerable damage to crops.
	28									Minor storms also reported at Grove Hill and Union Springs, Ala.; at Delaware City and Port Penn and near Middletown, Del.; at Shoals, Vincennes, Washington and in Jefferson County, Ind.; in Adair, Ringgold, and Union Counties, Iowa; near El Dorado, Kans.; near Port Deposit, Fair Hill, and Millington, and at Centreville, Md.; at St. Charles, Mo.; in Saline County, Nebr.; at Claremore, Walters, and Wakita, Okla.; at Ogden, Utah; and in Garfield and Whitman Counties, Wash.
MISSOURI Macon, Macon County	29	Early morning							Rain, electrical, and wind	3-1/2 to 5 inches of rain accompanied storm. Lightning killed several head of cattle.
COLORADO Denver County	29	Afternoon							Rain and hail	Thunderstorm did heavy flood damage to homes, streets, roads, bridges, etc., in parts of Denver, Valverde, and Westwood. Southwestern Denver hit hardest where 3 inches of rain fell. Five Points area also flooded. Some hail damage in various parts of Denver.
NORTH CAROLINA Lenoir County	29	Afternoon						4	Hail	Tobacco crop damaged.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TENNESSEE Mountain View community, Anderson County	29	2:30 p.m.		*1-1/2			1	4	Thunderstorm	Storm swept up Brushy Valley leaving wide swath of destroyed tobacco, torn vegetable gardens, and shredded corn and cane plants. Hail caused most of damage.
LOUISIANA New Orleans, Orleans Parish	29	3:30-3:50 p.m.	Short	Narrow			4	1	Wind	About 15 homes and buildings had roofs damaged and some skylights broken; occurred during widespread thunderstorm; residents claimed to have seen funnel cloud and heard loud roar, but believed only sudden heavy blast of wind.
NORTH CAROLINA Graham and Vance Counties	29	4 p.m.						4	Hail	7-square miles damaged.
TENNESSEE Springfield, Robertson County	29	8 p.m.					3	3	Rain	Between 4 and 5 inches of rain fell within 1 hour, flooding basements, damaging stored tobacco, and generally overflowing City's runoff facilities.
COLORADO Estes Park, Larimer County	29	Evening							Rain	Torrential rain classed top storm of month. 6-foot wall of water came down Fish Creek taking out highway bridge, foot bridges, and culverts on golf course. Flood waters caused damage to stores, motels, homes, etc., estimated at thousands of dollars.
	29									Minor storms also reported in Augusta and Macon areas, Ga.; at Buckley, Ill.; at St. Tammany Parish, La.; at Rolla, Mo.; near Lima, Mont.; in Hunt County, Tex.; in Big Cottonwood Canyon, Utah.
SOUTH DAKOTA Orient-Brookings, Faulk to Brookings Counties	30	Midnight-4 a.m.							Electrical	Lightning fired 2,000 bales of hay at Orient and 250 tons of flax straw at Arlington.
FLORIDA West Palm Beach, Palm Beach County	30	8 a.m.							Waterspouts	Disdipated at sea.
MONTANA Chinook-Hogeland-Turner areas, Blaine County	30	11 a.m.	20	*2			1	5	Hail and wind	Storm moved southeastward.
OKLAHOMA Allen, Pontotoc County	30	12-12:30 p.m.						1	Wind, rain, and hail	Wind blew down barn, garage, outbuildings, TV antennas, and uprooted trees.
MONTANA Harlowton, Wheatland County	30	12:30 p.m.	5	*2			2	1	Hail	Hailstones up to 1 inch in diameter. Storm moved eastward.
OKLAHOMA Okmulgee area, Okmulgee County	30	2:40 p.m.					4	1	Wind, rain, and hail	Roofs and porches of many homes damaged, outbuildings destroyed, many plate-glass windows blown in or exploded out, signs blown over, TV antennas toppled, trees uprooted, and utility lines badly damaged by severe wind. Damage to roofs and outbuildings noted as far as 6 miles south of Okmulgee. Storm moved east-northeastward.
NEBRASKA Colon (3 miles northwest of), Saunders County	30	3:25 p.m.			0	0	3	1	Tornado (suspected)	Dust too thick to see funnel. Storm moved north-northeastward.
MONTANA Dutton to Highwood, Teton to Chouteau Counties	30	3:30 p.m.	50-60	*2-3			1	6	Hail	Storm covered area from Ft. Benton, Dutton, Carter, Floweree to Highwood. Hail up to 1 inch in diameter. Storm moved eastward.
TEXAS Midland (16 miles east of), Midland County	30	4:30 p.m.							Wind	16 telephone poles broken by wind.
ARIZONA Fredonia, Coconino County	30	Late afternoon					4	4	Rain	Heavy rainfall near Vermillion Cliffs caused flash flood which inundated fields and damaged homes in northeastern section of town.
OKLAHOMA Ellis County	30	P.m.							Wind, rain, hail, and dust	Severe wind and dust followed by heavy rain and hail moved across Ellis County and destroyed crops, trees, shrubs, livestock, and poultry. Several inches of hail remained on ground after storm.
COLORADO Eastern portion	30	Evening							Rain	South Denver and Englewood flooded when 4 to 5 inches of rain fell. Residents evacuated from their homes in low-lying areas by boats. Heavy damage to homes, business places, streets, etc. Same evening Fort Morgan hit by 4.60 inches of rain which came down in about an hour, flooding town, breaking storm sewers, ruining stored

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
COLORADO (Cont'd.)										supplies, etc. Fort Morgan designated as Flood Disaster Zone. Heavy rain and hail also fell in Canon City area, damaging crops, buildings, etc.
COLORADO Western portion	30	Evening							Rain	Heavy rains in Mesa, Garfield, and Rio Blanco Counties. In vicinity of Craig and Meeker, roads and bridges washed out and stacked hay washed down stream, 1 rancher lost 30 tons; damage unestimated.
	30									Minor storms also reported at Selma, Ala.; in Prince William Sound area, Alaska; at Spencer, Iowa; near Comfrey, Minn.; and near Dodson, Mont.
NEW MEXICO Tijeras (5 miles southeast of), Bernalillo County	31	9:45 a.m.			0	0			Tornado	Funnel cloud moving northward observed from WBAS in Albuquerque, but visit to area in rough, wooded country failed to find any evidence that it reached ground.
IOWA Linn County	31	A.m.					4	1	Rains	Buildings in low areas flooded.
NEBRASKA Upland and vicinity, Franklin County	31	2:30-3:30 p.m.	8	*1-2			3	4	Hail	
NEBRASKA Nuckolls County (northeastern portion)	31	Afternoon	8	*3			1	4	Hail	Hailstones 3/4 inch in diameter.
TEXAS Big Spring, Howard County	31	Afternoon			1				Rain	Child drowned in small flash flood.
ARKANSAS Hartman, Johnson County	31	3:30 p.m.							Wind	Considerable damage to roofs and trees; power- and communication lines blown down
KANSAS Junction City (7-1/2 miles west of), Geary County	31	7 p.m.							Electrical	As result of lightning strike, barn, machine shed, granary and contents of feed, tools, and automobile burned.
NEBRASKA Lodgepole (5 miles south of), Cheyenne County	31	7:49 p.m.			0	0			Tornado	Funnel did not touch ground. Reported by CAA.
ARKANSAS Stamps, Lafayette County	31	P.m.							Wind	Building under construction destroyed; 1 shed destroyed, roofs, trees, TV antennas, and powerlines damaged.
COLORADO Denver, Arapahoe, and Jefferson Counties	31	Evening							Rain	Rain in Denver area caused flooding in low-lying places. Total damage for storms during last 5 days in Denver, Arapahoe, and Jefferson Counties estimated at over 5 million dollars. Area designated as Flood Disaster Zone.
IOWA Pottawattamie County	31	Evening					4	4	Rain and electrical	Highways and basements flooded and utilities damaged.
COLORADO El Paso County	31	Night				1	5		Rain	Colorado Springs hit by heavy shower which flooded streets and basements. Car washed down Fountain Creek, when it became stalled. Fort Carson soldier injured when his car dropped into washout 10 miles south of Fort Carson. Damage to city streets, curbs, and gutters $40,000 to $50,000; to county roads and bridges $40,000 to $50,000; to irrigation and drainage ditches $10,000 to $20,000.
	31									Minor storms also reported in Chickasaw, Lucas, and Van Buren Counties, Iowa; at St. Joseph, Mo.; and at Sayre, Okla.
THE FOLLOWING STORMS RECEIVED TOO LATE TO BE PLACED IN CHRONOLOGICAL ORDER.										
ALABAMA Fairview, Cullman County	2	11 a.m.				2	2	1	Electrical	Lightning struck woman washing dishes. She was saved by artificial respiration and kept under oxygen for 24 hours. Also, in another house, 9-year-old boy hit. He was kept under oxygen for 24 hours.
	5									Minor storms reported at Haleyville and Haigler's Mill community, Ala.
	9									Minor storm reported in Colbert and Lauderdale Counties, Ala.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA Fort Sill(southwest of), Comanche County	11	9:15 p.m.			0	0			Tornado and electrical	Tower operator at Fort Sill sighted tornado 20 to 30 miles southwest, believed moving north-northwestward. Funnel must have remained aloft as no evidence of its existence could be determined.
	16									Minor storm reported at Kalida, Ohio; and in Red Hill and Taylors areas, S. C.
SOUTH CAROLINA Oates community, Darlington County	25	3:45 p.m.			1	1			Electrical	Lightning struck tobacco barn.
	26									Minor storm reported at Evansville, Ind.
	28									Minor storms reported at Bellevue and Minidoka, Idaho.
MISSOURI Phelps County (northeastern portion)	29	4 p.m.			0	0			Tornado (suspected), hail, wind, electrical, and rain	Considerable hail damage to growing crops. Many powerlines downed and several farm buildings destroyed.
	31									Minor storm reported at Hamilton, Mont.

* Miles instead of yards.
** Yards instead of miles.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000.

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JULY 1956

There were numerous flash floods reported throughout the country during July. They were record breaking in North Carolina, Maryland, and Iowa. Other outstanding flash floods were reported in Oregon and Alabama.

The drought conditions in the South-Central and Southwestern States grew worse during July in Texas and Oklahoma but was improved in Kansas and Missouri. There was little significant change in Colorado, New Mexico, Arizona, and California.

ATLANTIC SLOPE DRAINAGE

Moderate to heavy rain over southeastern Pennsylvania during the early morning hours of the 21st caused flash flooding in some of the small streams in that area. No damages were reported.

Rainfall on the 2d and 3d, with totals ranging from 0.5 inch to 3.75 inches, caused a slight rise on the Juniata, West Branch, at Karthaus and below, and the main stem of the Susquehanna River at Sunbury, Pa., and below. The heavier amounts of rainfall in the headwaters of the West Branch produced a rise to near flood stage (10 feet) at Clearfield, Pa., with the highest stage of 9.13 feet reported at midnight of the 2d. No damage was reported.

Flash floods occurred in small creeks in the lower Potomac, north of the Nation's Capital, and in Little Antietam Creek in the Harpers Ferry, W. Va., area on the 20th and 21st from locally heavy rains. The hardest hit area was Rock Creek Basin in and north of Washington, D. C. The highest official amount of precipitation reported was 5.27 inches at Brighton Dam, Md. A report of a bucket survey of the Rock Creek Watershed Association showed two points in the upper portion of the basin where 8-inch containers overflowed, and one point where a 6-inch container overflowed. The amounts were considerably less downstream with the Weather Bureau in Washington, D. C., reporting 1.39 inches. The average precipitation over the Rock Creek Basin (76.5 square miles) was about 4 inches. The bulk of this rain fell in a 12-hour period. The peak stage at the U. S. Geological Survey gaging station at Sherrill Drive, D. C., (7 miles above the mouth) was 13.24 feet. This is a record high for the period of record, October 1929 to present. The previous high was 11.6 feet on August 24, 1933. Damage to roads, bridges, farm property, and cut hay in Rock Creek Basin was quite heavy. Seven deaths in Montgomery County, Md., were attributed to the flood. No extensive damage was reported in Little Antietam Creek above Harpers Ferry, W. Va. According to the U. S. Geological Survey the peak discharge of Seneca Creek near Dawsonville, Md., was more than 50 percent greater than the previous maximum in a 27-year record. The only point to exceed flood stage along the main stem of the Potomac was the Leiter gage near Washington, D. C., where a crest of 10.7 feet was reached at 1 p.m. on the 21st due to heavy local runoff.

Several flash floods were reported in the James River Basin in Virginia throughout the month. One death from drowning occurred in Schenk's Branch at Charlottesville on the 20th. Property damage from flash flooding was minor.

Heavy rains over the south-central portion of North Carolina during the night of the 18th and 19th caused flooding along Bear Creek and Drowning Creek. Bear Creek is reported to have risen 30 feet above its normal depth of 2 to 3 feet. The center of the heavy rains was in the western portion of Moore County (50 miles southwest of Raleigh) where unofficial reports of 12 to 13 inches of rain were reported. Official amounts of 9.15 inches and 4.34 inches of precipitation occurred at Jackson Springs and Moncure, respectively. Three people were drowned in Bear Creek near Robbins, N. C., when the automobile in which they were riding was swept from the bridge crossing the flooded creek.

EAST GULF OF MEXICO DRAINAGE

Heavy rains on the 7th and on the morning of the 8th in southwestern Alabama caused flash floods in some of the creeks in Clarke and adjoining counties. The greatest 24-hour rainfall was 10.85 inches at Whatley on the 8th, with a storm total of 14.22 inches. Chatom reported 9.99 inches on the 8th, with a storm total of 10.34 inches. The peak discharge of Salitpa Creek near Coffeeville, as reported by U. S. Geological Survey, was 19,200 c.f.s. from a drainage area of 166 square miles. A peak discharge of 19,800 c.f.s. was reported from East Bassett Creek at Walker Springs (drainage area 188 square miles).

Damages to property and crops were heavy. A freight train (locomotive and 14 cars) was derailed when it hit a washout 5 miles north of Chatom, Ala. Two hundred yards of track was torn up. Many highways and railway bridges were washed out and erosion of roads was extensive. In Grove Hill, Clarke County, the floors of a number of business houses and homes were flooded. Numerous fish ponds were destroyed. Water was reported to be 2 feet deep on the Pine Barn Bridge on State Highway 45, and up to a foot above the railroad tracks between Whatley and Suggsville.

MISSISSIPPI SYSTEM

Missouri Basin.--Minor flooding occurred along the Big Blue River from Beatrice, Nebr., to Blue Rapids, Kans., on the 3d and 4th, and on the Little Blue River at Endicott, Nebr., on the 3d. There was some flooding on the Republican River at Cambridge, Nebr., on the 6th. Bankful stage was exceeded by 5.6 feet on Sappa Creek at Oberlin, Kans., on the 5th and 6th. There was some local flooding along the Nishnabotna River at Hamburg, Iowa, on the 8th. The Lamine River exceeded flood stage at Clifton, Mo., on the 3d and 4th by 4.4 feet and the Grand River exceeded bankful stage at Sumner, Mo., by 1.1 feet on the 4th.

Ohio Basin.--Severe thunderstorms on the 17th over Puckety Creek caused moderate overflows in the New Kensington, Pa., area. The thunderstorms were also severe in the Allegheny Basin in the Tarentum and Natrona, Pa., area, causing extensive damage. The high water washed out the frame work and forms of a bridge in the State's Route 56 By-Pass Project. Landslides blocked many secondary roads and damaged several homes. Elsewhere, in Allegheny County, damage was limited to fallen utility wires and clogged sewers flooding many cellars. Rises were minor on the main rivers, with no flooding occurring.

Severe thunderstorms and heavy rain varying from 0.25 inch to 1.5 inches with locally heavier amounts during the evening of the 26th in the Pittsburgh, Pa., area caused small creeks to overflow. Beaver Falls, Pa., reported 3.23 inches of rain in a 2-hour period and was particularly hard hit. At Waynesburg, Pa., 3.3 inches of precipitation occurred in a period of 1.5 hours with a total of

4 inches in 4 hours and 5.25 inches in 24 hours. A state of emergency was declared by the Mayor of Beaver Falls as gas, water, and power lines were broken and the city was virtually isolated as highways were washed out. Service on the Pittsburgh and Lake Erie Railroad was disrupted for a time. Heavy damage was also reported in Ambridge, Baden, Midland, Aliquippa, Freedom, Monaca, and Washington, Pa. The substation observer at Claysville, Pa., reported the Weather Bureau equipment instrument shelter and standard rain gage were washed away at the Manufactures Light and Heat Company where the water rose to 5 feet in the plant. About 100 families were evacuated in Wheeling, W. Va., and several families in the Warren, Pa., area because of flooding streams. Telephone service was disrupted at Waynesburg, Pa.

Flash floods were reported in the Utica, Ohio, area of the Licking River (a tributary of the Muskingum) on the 8th due to heavy rain (4.52 inches in a period of 7 hours). The State 4-H camp north of Newark, Ohio, was flooded to a depth of 2 feet, marooning 115 children on high ground for 4 hours. Roads were damaged, bridges washed away, basements flooded, and a factory in Utica was damaged.

Several flash floods occurred in the Kanawha River Basin in West Virginia on the 27th due to heavy precipitation. The most severe of these occurred on Cannelton Hollow, near Montgomery, W. Va. One concrete highway culvert, one railroad bridge, one store, and about 50 houses were damaged by water in this area. Flash floods at Falls View, Swiss, Minden, and Hinton were comparatively minor.

Arkansas Basin.--A severe localized thunderstorm in the Royal Gorge area (about 8 miles west of Canon City, Colo.) caused a brief localized flash flood down "Telephone Gulch" where the Royal Gorge incline railway is located. More than 70 sightseers were temporarily trapped causing several injuries and a near tragedy. A small child who had tumbled from the platform was saved from being swept into the Arkansas River when a wall of water, 10 feet high, roared down through "Telephone Gulch" and under the observation platform at the bottom of the Royal Gorge incline railway. Hail knocked out telephone and power lines in the Gorge, and disabled the railway. Park rangers and Royal Gorge Company employees helped the stranded tourists to safe higher ground until emergency equipment was used to get the railway back into operation. First aid was given to those who had been injured by the hail at the top of the Gorge, but no one was sent to a hospital. The storm left several inches of hail on the ground. No significant rise occurred on the Arkansas at Canon City, Colo.

Thunderstorms during the afternoon and night of the 23d over most of the southern watershed of the Arkansas River Basin in Colorado caused some minor flooding of county roads in the San Isabel area and flash flooding along Timpas Creek at Roberta, Colo. Several families in the Roberta district (5 miles southeast of Rocky Ford) were forced to leave their homes for several hours early on the 23d. Damage was slight in comparison to the severe flood of July 23, 1951.

Thundershowers on the 31st produced a flood threat at Rye, Colo., on Greenhorn Creek and concern for the Canon City area on the Arkansas when 0.78 inch of rain fell in a half hour period. No important flooding occurred though Colorado Highway 165 was blocked for a time by boulders washed thereon, and Colorado Highway 115 between Colorado Springs and Canon City had as much as 2 feet of water briefly in some spots. Some damage may have occurred to bridges in the Rye area.

WEST GULF OF MEXICO DRAINAGE

Flooding in the Nueces River Basin in Texas during early July was due to locally heavy rains on the 2d and 3d. The rainfall was heavy in the Cotulla area and north to the upper Frio around Sabinal, with 4 to 5 inches reported. Due to the extreme dry conditions, flooding was limited to the immediate area of heavy rainfall. No damage was reported.

A stage of 6.44 feet (bankful stage 6 feet) was reached in the Rio Grande at Albuquerque, N. Mex., on the 20th. The high water was in the nature of a flash flood and resulted from rains of moderate to locally heavy intensity in the vicinity of and to the northward of Albuquerque during the preceding 48 hours. The levees in the middle Rio Grande Valley provided ample protection from the high water. At Albuquerque, the Rio Grande rose from practically no flow to above bankful stage and receded to a low stage again in a matter of a few hours. No damage was reported in the valley.

Great Basin.--Flash floods resulted from heavy thundershowers during the evening of the 20th on Peavine Creek in northwest Reno, Nev., and on Galena Creek in southwest Reno. Considerable damage occurred to a large residential area in northwest Reno. Galena Creek flooded the highway from Reno over Mount Rose to Lake Tahoe and cars were swept from the highway, drowning 4 persons. These flash floods struck within 40 minutes after the rainfall began.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--The worst flood in the Columbia Basin since May and June 1948, receded below flood stage at Vancouver, Wash., on July 2. A discussion of this flood is given in the May and June issues of this publication.

A severe flash flood occurred on Beach Creek in the headwaters of the John Day River in Grant County during the night of the 10th. This storm caused considerable damage to buildings and highways and flooded many homes. Mt. Vernon, Oreg., was hardest hit and its main street was reported to have been under 2.5 to 3 feet of water. Highways No. 26, 395, and 19, leading into the city, were inundated and several bridges were washed out. The town was isolated for a brief period.

The second flash flood struck the small town of Mitchell on Bridge Creek (tributary of John Day River) in Wheeler County in north-central Oregon in the afternoon of the 13th. The flooding was a contribution of water from numerous draws, gullies, and canyons entering Bridge and Keyes creeks from the north side. The main creek rose rapidly as the water entered from the side draws. It increased to torrential proportions and accumulated debris, wreckage, and mud in its progress. The peak flow for Meyers Canyon near Mitchell has been provisionally computed by the U. S. Geological Survey at 64,000 c.f.s. from 12.7 square miles of drainage or 5,030 c.f.s. per square mile. There have been two previous disastrous floods in Mitchell's 89 year history. The first occurred in 1884. In this flood, a 9-foot wave surged down the bluff above the town and deposited huge boulders in the streets and carried away houses, wagons and implements. The second flood occurred on July 11, 1904. In this flood, a wall of water 30 feet high swept through the community and destroyed all buildings except a few on high ground.. Two lives were lost.

FLOOD STAGE DATA

Table 5

(All dates in July unless otherwise specified)

JULY 1956

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
	Ft.			Ft.	
ATLANTIC SLOPE DRAINAGE					
Potomac. Washington (nr), D.C.	10	21	21	10.7	21
MISSISSIPPI SYSTEM Missouri Basin					
Nishnabotna Hamburg, Iowa	18	8	8	20.65	8
Sappa Creek Oberlin, Kans.	11	5	6	16.6	6
Republican. Cambridge, Nebr.	6	6	6	6.7	6
Little Blue Endicott, Nebr.	9	3	3	9.3	3
Big Blue:					
Beatrice, Nebr.	16	3	3	19.85	3
Barnston, Nebr.	18	3	4	22.55	3
Blue Rapids, Kans.	20	4	4	22.85	4
Grand: Sumner, Mo.	26	4	4	27.1	4
Lamine. Clifton City, Mo.	15	3	4	19.4	4
WEST GULF OF MEXICO DRAINAGE					
Nueces:					
Cotulla, Tex.	15	5	5	15.1	5
Tilden Crossing, Tex.	11	10	14	15.0	13
Rio Grande. Albuquerque, N. Mex.	**6	20	20	6.4	20
PACIFIC SLOPE DRAINAGE Columbia Basin					
Columbia Vancouver, Wash.	15	Apr. 24	2	26.8	June 4,5

* Provisional
** Bankful

RAWINSONDE DATA

Average monthly values

Table 20 JULY 1956

ALBANY, N. Y. (1004 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	18.5	80	238	2.7
1,000	31	121			245	2.7
950	31	564	18.2	64	269	6.8
900	31	1,025	15.1	64	273	9.1
850	31	1,507	12.0	67	282	10.7
800	31	2,012	8.7	67	279	14.2
750	31	2,554	6.1	60	279	18.5
700	31	3,107	3.3	47	279	19.4
650	31	3,712	.3	43	277	21.4
600	31	4,343	- 2.9	38	277	23.7
550	31	5,028	- 6.9	36	274	26.6
500	31	5,765	-11.4		274	30.1
450	31	6,576	-16.4		274	32.8
400	31	7,442	-22.7		271	36.9
350	31	8,408	-29.7		269	45.8
300	31	9,488	-37.9		269	50.7
250	31	10,718	-46.8		268	58.9
200	31	12,169	-54.7		271	64.1
175	31	13,016	-57.6		272	61.2
150	29	13,985	-59.4		272	49.0
125	29	15,121	-60.6		276	35.4
100	29	16,511	-60.0		271	19.8
80	29	17,907	-58.2		287	12.4
60	26	19,731	-54.7		46	1.0
50	26	20,899	-53.3		76	6.8
40	24	22,342	-51.7		80	11.3
30	23	24,214	-50.2		86	16.9
20	6	26,860	-47.2			

ALBUQUERQUE, N. MEX. (840 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	25.3	36	137	5.8
1,000	31	45				
950	31	513				
900	31	1,001				
850	31	1,511				
800	31	2,044	22.8	37	163	6.4
750	31	2,605	18.4	40	196	3.5
700	31	3,189	13.5	47	217	3.5
650	31	3,811	8.2	56	214	3.1
600	31	4,463	3.0	63	316	2.1
550	31	5,164	- 2.3	66	313	4.5
500	31	5,911	- 7.5	65	342	4.1
450	31	6,737	-12.7	52	297	1.7
400	31	7,613	-18.4	44	280	2.5
350	31	8,594	-25.8	43	276	5.6
300	31	9,691	-34.3	39	263	9.3
250	31	10,938	-44.2		259	10.1
200	29	12,398	-55.0		274	10.7
175	29	13,239	-60.2		274	9.1
150	28	14,191	-64.8		271	7.2
125	27	15,291	-68.2		276	6.0
100	24	16,630	-67.7		88	1.7
80	24	17,983	-64.1		81	10.7
60	23	19,762	-59.9		80	14.8
50	22	20,908	-57.1		80	19.2
40	20	22,328	-54.2		86	21.4
30	17	24,181	-51.6		86	27.6
20						

ANCHORAGE, ALASKA (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	16.7	59	221	4.1
1,000	30	141	15.4	61	195	5.2
950	30	577	12.5	64	176	6.2
900	30	1,026	10.0	65	173	6.6
850	30	1,499	7.2	68	178	6.0
800	30	1,995	4.4	68	165	5.1
750	30	2,525	1.2	69	162	4.9
700	30	3,070	- 1.9	66	148	3.9
650	30	3,662	- 5.3	62	148	4.5
600	30	4,280	- 8.5	53	145	1.9
550	30	4,954	-12.8	53	118	1.9
500	29	5.674	-17.4	48	16	1.2
450	29	6,462	-22.8	47	15	1.7
400	29	7,308	-29.0	44	340	2.9
350	29	8,248	-36.3		348	4.7
300	29	9,298	-44.4		346	5.2
250	29	10,496	-51.9		27	9.1
200	29	11,933	-52.3		347	7.0
175	29	12,801	-50.1		342	5.4
150	29	13,808	-49.4		314	5.1
125	28	14,998	-48.7		303	4.9
100	27	16,468	-47.8		256	3.5
80	27	17,942	-47.0		256	1.6
60	24	19,849	-46.4		92	2.9
50	23	21,055	-46.1		105	6.2
40	22	22,539	-45.9		94	8.4
30	15	24,451	-45.3		88	12.4
20	8	27,177	-41.2			

ANNETTE, ALASKA (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	15.2	74	196	3.1
1,000	31	176	14.4	71	199	2.7
950	31	607	12.2	71	183	3.1
900	31	1,059	9.7	72	187	2.1
850	31	1,532	7.3	71	180	3.3
800	31	2,028	4.3	69	189	3.3
750	31	2,558	1.5	64	193	4.7
700	31	3,104	- 1.6	59	227	6.6
650	30	3,696	- 5.2	54	234	8.2
600	30	4,319	- 8.6	49	236	9.5
550	30	4,989	-12.7	46	236	9.1
500	30	5,708	-17.5	41	238	10.3
450	30	6,494	-23.0	36	241	13.2
400	30	7,341	-29.2	34	230	13.8
350	30	8,280	-36.4		183	6.2
300	30	9,329	-44.5		151	3.7
250	30	10,529	-50.8		38	8.7
200	30	11,979	-50.2		9	6.0
175	30	12,853	-48.8		328	6.6
150	30	13,864	-49.0		295	4.5
125	30	15,058	-49.8		282	7.2
100	29	16,512	-50.9		318	3.5
80	29	17,963	-50.7		345	1.0
60	28	19,838	-49.9		88	5.6
50	28	21,030	-49.1		81	8.2
40	25	22,496	-48.1		78	9.9
30	17	24,386	-47.1			
20	7	27,085	-44.0			

ATHENS, GA. (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	23.5	84	225	2.9
1,000	31	147				
950	31	601	24.2	64	245	6.4
900	31	1,070	21.1	67	241	7.2
850	31	1,563	17.6	70	243	6.6
800	31	2,079	14.3	68	256	5.2
750	31	2,624	10.8	63	270	5.8
700	31	3,194	7.3	63	276	6.8
650	31	3,807	3.6	60	286	7.2
600	31	4,448	.1	55	284	7.4
550	31	5,140	- 3.8	51	285	7.6
500	31	5,887	- 8.3	47	291	8.4
450	31	6,707	-13.0	37	285	10.1
400	31	7,586	-18.7	35	280	10.9
350	31	8,567	-25.8	37	282	11.8
300	31	9,665	-34.0		264	14.0
250	31	10,915	-43.9		256	14.4
200	30	12,374	-55.7		257	19.4
175	29	13,212	-61.3		255	16.9
150	27	14,154	-66.0		275	13.8
125	22	15,251	-68.1		309	8.5
100	20	16,593	-67.6		336	1.6
80	18	17,946	-64.0		82	2.7
60	17	19,728	-59.5		77	12.8
50	17	20,873	-57.6		79	19.0
40	15	22,290	-55.3		83	27.8
30	11	24,133	-52.0		80	28.0
20						

BARROW, ALASKA (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	4.2	86	222	3.1
1,000	31	109	4.0	83	219	3.7
950	31	534	4.4	74	234	8.9
900	31	966	3.5	69	242	12.6
850	31	1,429	2.0	61	249	14.8
800	31	1,917	.2	58	248	19.0
750	31	2,440	- 2.1	53	253	17.5
700	31	2,977	- 4.9	52	256	17.5
650	31	3,565	- 8.2	48	256	19.4
600	31	4,174	-11.6	44	261	18.8
550	31	4,839	-15.8	43	261	21.6
500	31	5,548	-20.7	39	267	18.6
450	31	6,326	-26.3		281	20.8
400	31	7,160	-32.3		292	22.1
350	31	8,089	-39.1		314	19.6
300	31	9,130	-45.9		313	20.4
250	31	10,331	-49.1		307	12.2
200	31	11,799	-46.8		291	11.3
175	31	12,688	-45.2		257	13.0
150	31	13,717	-45.0		287	11.5
125	31	14,935	-44.7		281	7.0
100	30	16,428	-44.2		279	5.6
80	30	17,926	-43.1		287	2.5
60	28	19,869	-42.3		133	.2
50	26	21,104	-42.2			
40	22	22,613	-42.4			
30	13	24,554	-42.5			
20						

BETHEL, ALASKA (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	16.6	68	299	1.2
1,000	31	128	15.5	69	275	1.4
950	31	562	11.8	71	234	1.2
900	31	1,011	9.3	70	208	1.7
850	31	1,483	7.2	69	154	1.6
800	31	1,980	4.5	70	179	1.9
750	31	2,509	1.9	64	189	2.3
700	31	3,057	- 1.1	61	196	2.3
650	31	3,649	- 4.3	59	239	1.9
600	31	4,272	- 7.5	53	244	2.7
550	31	4,947	-11.5	49	248	2.3
500	31	5,668	-16.0	49	317	1.9
450	31	6,460	-21.4	48	284	4.1
400	31	7,311	-27.5	44	303	5.8
350	31	8,258	-34.5	41	313	5.4
300	31	9,316	-42.6		306	4.3
250	31	10,523	-50.5		335	5.6
200	31	11,968	-51.9		313	8.7
175	31	12,837	-49.6		311	8.5
150	31	13,847	-48.8		316	7.2
125	31	15,045	-48.4		300	7.2
100	31	16,515	-47.5		282	5.1
80	31	17,992	-46.3		286	2.3
60	31	19,903	-45.6		64	2.3
50	30	21,120	-45.1		85	5.2
40	20	22,609	-45.0		89	8.4
30	28	24,527	-44.2		89	11.7
20	15	27,269	-41.4			

BISMARCK, N. DAK. (956 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	19.4	76	73	2.5
1,000	31	116				
950	31	567	20.0	70	78	3.1
900	31	1,029	18.9	60	73	2.5
850	31	1,517	15.4	61	318	2.1
800	31	2,029	12.1	58	311	6.8
750	31	2,573	8.6	59	305	12.0
700	31	3,134	5.0	55	300	15.7
650	31	3,737	1.3	52	305	19.4
600	31	4,374	- 2.6	44	307	22.0
550	31	5,060	- 7.0	36	303	25.3
500	31	5,796	-11.9	33	301	30.3
450	31	6,599	-17.4	33	299	32.2
400	31	7,466	-23.7		296	38.1
350	31	8,427	-31.1		293	40.8
300	31	9,500	-39.5		291	41.6
250	31	10,722	-48.7		282	50.3
200	30	12,167	-54.4			
175	30	13,021	-55.1			
150	29	13,996	-57.0			
125	29	15,145	-58.6			
100	29	16,542	-59.0			
80	28	17,942	-57.8			
60	28	19,767	-54.8			
50	27	20,939	-53.3			
40	27	22,379	-51.6			
30	20	24,255	-49.1			
20						

BOISE, IDAHO (914 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	27.6	34	301	3.5
1,000	31	61				
950	31	530				
900	31	1,005	28.2	26	320	5.2
850	31	1,509	24.7	25	358	7.6
800	31	2,036	20.3	28	345	7.4
750	31	2,594	15.5	32	308	6.8
700	31	3,169	10.4	36	275	8.5
650	31	3,781	5.2	40	249	10.5
600	31	4,429	.1	41	245	13.0
550	31	5,120	- 5.1	42	245	15.2
500	31	5,862	-10.4	39	242	16.1
450	31	6,673	-16.1		244	18.8
400	31	7,542	-22.3		245	21.6
350	31	8,508	-30.0		230	21.2
300	31	9,586	-38.6		233	24.3
250	31	10,814	-47.3		234	23.3
200	31	12,265	-53.7		244	23.9
175	31	13,119	-56.2		246	20.8
150	30	14,100	-59.3		252	20.2
125	30	15,237	-61.0		261	13.8
100	29	16,621	-61.4		332	7.6
80	28	18,010	-59.7		49	7.8
60	26	19,824	-56.5		61	12.0
50	25	20,985	-54.7		73	16.7
40	25	22,419	-52.6		85	19.0
30	22	24,285	-50.1		83	18.8
20	6	26,928	-47.5			

BROWNSVILLE, TEX. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	25.8	87	142	11.5
1,000	31	137	26.0	83	142	13.8
950	31	593	23.6	78	148	20.0
900	31	1,060	21.7	62	149	19.0
850	31	1,555	19.4	52	149	16.5
800	31	2,074	16.4	49	147	15.9
750	31	2,617	12.9	47	148	14.2
700	31	3,196	9.2	46	141	11.1
650	31	3,809	5.3	46	142	9.1
600	31	4,455	1.4	40	129	8.9
550	31	5,151	- 2.7	43	119	7.6
500	31	5,900	- 7.2	38	91	6.0
450	31	6,722	-12.4	31	92	6.0
400	31	7,603	-18.3		81	6.4
350	31	8,585	-25.4		82	4.5
300	31	9,684	-34.1		90	3.9
250	30	10,933	-44.0		171	1.7
200	29	12,393	-55.0		200	.2
175	27	13,235	-60.4		103	.8
150	26	14,186	-65.3		79	5.4
125	23	15,282	-69.4		71	8.4
100	22	16,609	-69.8		69	10.9
80	20	17,939	-68.0		84	19.0
60	19	19,693	-61.9		90	26.4
50	19	20,829	-58.5		85	32.2
40	16	22,241	-56.4		86	37.1
30	16	24,082	-53.0		90	38.5
20	8	26,701	-49.1			

BUFFALO, N. Y. (993 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	182	19.0	75	227	2.3
1,000	31	117				
950	31	561	18.5	67	259	6.4
900	31	1,022	15.8	72	270	9.7
850	31	1,505	12.6	72	271	11.8
800	31	2,012	9.5	70	271	14.4
750	31	2,554	6.6	60	272	15.9
700	31	3,108	3.8	50	274	18.3
650	31	3,708	.3	50	278	21.8
600	31	4,344	3.6	44	279	22.9
550	31	5,026	- 7.4	43	276	25.6
500	31	5,763	-12.1	40	277	27.4
450	31	6,567	-17.3	37	273	31.7
400	31	7,434	-23.3	37	275	35.9
350	31	8,397	-30.4		272	42.0
300	31	9,473	-38.7		270	49.1
250	30	10,696	-47.9		270	58.1
200	30	12,140	-55.0		270	59.1
175	30	12,988	-57.3		271	55.2
150	30	13,957	-59.1		277	43.5
125	30	15,095	-60.6		284	31.7
100	30	16,483	-60.1		284	20.6
80	30	17,880	-58.2		283	10.5
60	28	19,701	-55.3		13	2.7
50	27	20,869	-53.7		78	7.8
40	27	22,308	-51.8		84	12.0
30	24	24,183	-49.5		93	16.7
20	17	26,868	-45.5		90	22.5
15						

BURRWOOD, LA. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	26.8	84	261	4.3
1,000	31	157	25.9	80	242	4.9
950	31	610	23.0	74	247	2.9
900	31	1,078	20.4	65	298	.6
850	31	1,569	17.5	58	15	2.5
800	31	2,085	14.2	57	52	3.5
750	31	2,628	10.7	57	52	5.1
700	31	3,199	7.2	54	50	5.1
650	31	3,810	3.6	52	33	5.8
600	31	4,450	- .2	48	21	4.9
550	31	5,142	- 4.3	49	19	5.1
500	30	5,888	- 8.8	45	22	4.3
450	28	6,703	-13.9	42	38	4.3
400	28	7,582	-19.8	41	47	3.5
350	27	8,558	-27.1	39	51	3.3
300	27	9,649	-35.7	39	47	5.8
250	25	10,892	-45.6		59	5.2
200	22	12,341	56.7		72	12.2
175	20	13,176	61.8		69	12.4
150	18	14,117	-66.4		63	7.4
125	15	15,209	-69.1			
100	13	16,539	-68.2			
80	12	17,883	-66.1			
60	8	19,659	-61.1			
50	8	20,797	-57.8			
40	8	22,213	-55.1			
30	7	24,044	-52.5			
20	5	26,675	-48.0			
15						

CARIBOU, ME. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	191	14.6	83	252	3.9
1,000	31	105				
950	31	545	14.8	69	266	8.9
900	31	997	12.0	69	279	10.7
850	31	1,473	8.9	72	285	12.0
800	31	1,973	5.5	75	285	14.4
750	31	2,502	2.3	71	282	16.9
700	31	3,052	- .7	65	281	18.3
650	31	3,643	3.8	59	279	20.0
600	31	4,270	- 7.1	48	277	23.9
550	31	4,945	-11.4	42	275	26.2
500	31	5,667	-16.1	41	275	27.8
450	31	6,463	-21.8	39	272	32.1
400	31	7,309	-28.1	39	274	38.7
350	31	8,253	-35.0	41	277	46.0
300	30	9,313	-42.2		279	54.2
250	30	10,526	-48.4		276	63.9
200	30	11,981	-51.8		275	63.7
175	29	12,842	-53.1		277	60.4
150	29	13,831	-54.6		276	48.8
125	29	14,995	-54.8		275	35.9
100	25	16,421	-55.0		275	22.7
80	23	17,842	-54.2		280	10.5
60	20	19,695	-52.2		88	2.3
50	14	20,886	-51.3		80	8.4
40	12	22,331	-50.1		93	13.0
30	12	24,216	-48.4		92	15.0
20	6	26,906	-44.7			
15	5	28,840	-41.4			

CHARLESTON, S. C. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	13	24.6	89	202	5.2
1,000	31	160	25.5	81	210	10.1
950	31	615	24.0	73	227	14.6
900	31	1,085	21.3	71	237	11.8
850	31	1,579	18.1	71	250	9.3
800	31	2,096	14.8	68	253	7.8
750	31	2,646	11.4	65	247	7.2
700	31	3,213	7.9	61	256	6.8
650	31	3,831	4.2	60	262	7.0
600	31	4,469	.5	57	263	6.4
550	31	5,172	- 3.5	51	253	6.6
500	31	5,911	- 7.9	47	272	7.0
450	31	6,739	-12.5	43	277	7.2
400	31	7,614	-18.2	40	279	7.4
350	31	8,598	-25.2		269	9.1
300	31	9,699	-33.7		270	9.7
250	31	10,951	-43.6		279	8.0
200	31	12,415	-55.3		284	9.5
175	31	13,255	-61.1		283	8.5
150	31	14,200	-66.1		292	7.2
125	30	15,300	-68.8		337	6.4
100	29	16,641	-67.9		89	4.9
80	29	17,995	-64.0		106	6.2
60	28	19,778	-59.5		75	14.8
50	28	20,923	-57.6		89	22.7
40	28	22,339	-54.9		88	29.5
30	28	24,192	-51.9		97	31.9
20	14	26,837	-49.1		98	41.0
15						

COLD BAY, ALASKA (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	11.4	85	208	3.7
1,000	31	136			233	3.7
950	31	567	9.7	85	164	.4
900	31	1,012	9.0	81	29	.8
850	31	1,484	7.2	77	15	1.6
800	31	1,981	5.2	70	337	2.5
750	31	2,512	2.7	62	345	1.4
700	31	3,061	- .3	58	351	3.9
650	31	3,657	- 3.3	48	345	5.1
600	31	4,281	- 6.7	41	341	8.0
550	31	4,956	-10.7	39	318	8.4
500	31	5,682	-15.4	37	324	10.5
450	31	6,474	-20.8	37	325	10.7
400	31	7,330	-27.0	36	316	11.8
350	31	8,277	-34.1	35	299	21.8
300	30	9,333	-41.8		297	26.4
250	30	10,546	-49.4		321	19.8
200	30	11,996	-50.9		323	13.8
175	30	12,866	-50.4		331	12.8
150	28	13,858	-49.7		314	11.1
125	28	15,049	-49.6		318	7.4
100	28	16,509	-49.4		292	7.6
80	28	17,972	-48.7		346	3.5
60	28	19,865	-47.8		93	7.4
50	28	21,068	-47.2		73	8.0
40	27	22,546	-46.4		93	14.4
30	25	24,459	-45.4		83	14.8
20	15	27,187	-41.8			
15						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

JULY 1956

COLUMBIA, MO.
(987 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	238	24.1	78	145	1.7
1,000	31	119				
950	31	573	24.4	65	203	6.2
900	31	1,044	21.3	65	232	8.9
850	31	1,538	18.4	64	257	9.9
800	31	2,055	14.8	63	273	11.1
750	31	2,598	11.4	59	291	12.4
700	31	3,172	7.7	56	302	14.4
650	31	3,781	3.8	48	303	16.5
600	31	4,425	.1	39	296	18.6
550	31	5,114	- 4.0	37	296	17.5
500	31	5,863	- 8.6		298	18.5
450	31	6,679	-13.7		294	20.2
400	31	7,357	-20.0		290	23.3
350	31	8,532	-27.2		287	27.6
300	31	9,623	-35.4		283	33.0
250	31	10,866	-44.8		276	35.4
200	31	12,324	-54.5		272	37.1
175	30	13,168	-59.0		275	33.4
150	29	14,124	-63.0		287	26.0
125	27	15,234	-66.2		293	22.0
100	27	16,590	-64.5		308	11.5
80	25	17,957	-62.5		1	5.2
60	25	19,750	-57.9		69	8.9
50	24	20,906	-55.2		77	14.0
40	23	22,336	-53.2		86	19.4
30	19	24,200	-51.2		86	21.4
20	8	26,849	-47.4			

DAYTON, OHIO
(981 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	297	22.3	72	198	1.2
1,000	30	125				
950	30	572	21.2	71	232	6.6
900	30	1,039	18.2	74	252	10.9
850	30	1,527	15.0	73	264	12.4
800	30	2,038	12.3	67	272	12.4
750	30	2,579	9.1	60	277	13.2
700	30	3,146	5.7	54	286	14.4
650	30	3,751	2.3	51	287	16.5
600	30	4,392	- 1.1	44	282	20.2
550	29	5,078	- 5.1	36	280	22.7
500	29	5,820	- 9.6	34	273	26.6
450	29	6,635	-14.5		273	28.7
400	29	7,509	-20.9	32	276	30.1
350	28	8,482	-28.1		273	32.2
300	28	9,570	-36.1		266	40.2
250	28	10,810	-45.2		263	46.0
200	28	12,265	-54.9		260	48.8
175	28	13,110	-58.7		264	45.8
150	27	14,067	-61.5		269	38.5
125	25	15,189	-63.3		278	30.5
100	22	16,562	-62.2		289	17.3
80	20	17,939	-60.8		301	9.5
60	18	19,743	-57.0		54	8.4
50	18	20,902	-54.7		74	12.2
40	17	22,339	-52.5		79	16.3
30	15	24,209	-50.2		84	24.9
20						

DODGE CITY, KANS.
(924 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	792	26.5	48	147	5.1
1,000	31	86				
950	31	546				
900	31	1,028	27.2	42	147	6.0
850	31	1,531	24.0	41	172	4.9
800	31	2,057	20.0	47	212	5.8
750	31	2,612	15.5	53	238	7.4
700	31	3,199	10.9	58	258	6.2
650	31	3,808	6.2	59	261	7.6
600	30	4,455	1.5	54	286	8.0
550	30	5,152	- 3.1	47	304	8.9
500	30	5,898	- 7.8	38	319	10.3
450	30	6,718	-13.3		311	11.8
400	30	7,596	-19.6		304	13.8
350	30	8,573	-26.8		301	14.2
300	29	9,663	-35.3		300	15.7
250	29	10,906	-45.0		300	17.3
200	29	12,361	-55.4		289	19.1
175	29	13,202	-60.1		286	17.1
150	29	14,154	-63.8		294	15.9
125	29	15,260	-67.2		300	13.4
100	27	16,603	-66.9		314	5.4
80	25	17,959	-63.6		41	4.5
60	23	19,745	-59.0		80	10.5
50	22	20,895	-56.3		75	13.4
40	21	22,319	-53.8		80	19.0
30	14	24,188	-51.5		88	25.8
20	6	26,822	-47.8			

EL PASO, TEX.
(881 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,195	28.8	31	112	2.3
1,000	31	52				
950	31	521				
900	31	1,007				
850	31	1,518	27.4	32	155	5.6
800	31	2,051	23.1	36	142	5.4
750	31	2,612	18.3	42	140	4.5
700	31	3,195	13.2	49	128	3.5
650	31	3,818	7.8	57	100	3.7
600	31	4,467	2.4	61	77	3.5
550	31	5,161	- 2.6	62	55	3.1
500	31	5,913	- 7.6	58	65	3.5
450	31	6,740	-12.3	42	60	3.7
400	31	7,618	-18.2	44	10	2.1
350	31	8,602	-25.3	36	316	3.3
300	31	9,701	-34.0	38	309	4.5
250	31	10,950	-44.1		309	5.8
200	31	12,408	-55.8		308	7.6
175	31	13,246	-61.4		308	7.4
150	27	14,188	-66.6		336	7.0
125	23	15,274	-70.3		20	3.3
100	18	16,607	-69.8		83	8.2
80	18	17,946	-66.1		82	13.6
60	18	19,712	-60.4		86	19.0
50	18	20,854	-57.9		84	23.5
40	17	22,268	-55.4		87	27.6
30	12	24,125	-51.8		94	31.9
20						

ELY, NEV.
(81[illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,908	22.4	27	201	5.8
1,000	31	44				
950	31	509				
900	31	994				
850	31	1,500				
800	31	2,032	23.4	26	196	7.8
750	31	2,594	19.2	25	206	9.7
700	31	3,178	14.3	27	218	6.6
650	31	3,800	8.7	33	226	6.8
600	31	4,453	2.8	41	232	7.4
550	31	5,150	- 3.2	48	238	7.8
500	31	5,897	- 9.3	53	245	10.7
450	31	6,714	-14.6	43	240	12.8
400	31	7,586	-20.6		238	16.1
350	31	8,559	-27.9		238	20.8
300	31	9,647	-36.3		241	25.1
250	31	10,886	-45.4		243	31.3
200	31	12,343	-54.4		250	26.2
175	31	13,190	-58.4		246	20.6
150	31	14,150	-61.9		248	12.6
125	31	15,269	-64.7		252	6.4
100	28	16,627	-64.5		31	2.5
80	27	17,997	-61.6		67	8.9
60	27	19,794	-57.8		86	13.2
50	25	20,948	-55.8		82	20.4
40	22	22,377	-53.1		94	21.2
30	17	24,241	-51.0			
20						

FAIRBANKS, ALASKA
(999 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	135	21.7	51	280	5.4
1,000	31	122			262	5.4
950	31	564	17.4	51	262	6.4
900	31	1,022	13.4	57	261	7.6
850	31	1,500	9.0	64	255	9.5
800	31	1,998	5.1	66	249	10.5
750	31	2,527	1.9	63	250	11.5
700	31	3,075	- 1.6	59	254	11.1
650	31	3,663	- 5.0	52	254	11.7
600	31	4,287	- 8.8	49	250	11.1
550	31	4,951	-13.1	47	249	12.6
500	31	5,674	-18.2	45	249	13.2
450	31	6,458	-23.6	43	257	12.6
400	31	7,303	-29.8	44	251	11.7
350	31	8,241	-36.9		265	12.4
300	31	9,288	-45.0		278	11.5
250	31	10,483	-52.8		286	12.6
200	31	11,918	-52.3		285	8.2
175	30	12,782	-49.9		286	7.0
150	30	13,793	-48.7		293	4.7
125	30	14,992	-48.2		277	4.1
100	30	16,463	-47.3		236	4.1
80	30	17,940	-46.4		195	2.9
60	28	19,848	-45.6		117	1.9
50	27	21,063	-45.5		113	5.6
40	26	22,547	-45.4		92	6.2
30	16	24,465	-44.8			
20	7	27,190	-41.4			
15						

FORT WORTH, TEX.
(993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	178	31.6	41	211	5.4
1,000	31	111				
950	31	574	29.6	40	165	18.1
900	31	1,050	25.9	45	177	19.4
850	31	1,551	21.7	52	186	17.1
800	31	2,073	17.2	59	198	12.6
750	31	2,622	12.7	62	212	9.9
700	31	3,196	8.8	57	224	4.1
650	31	3,811	4.6	57	297	.8
600	31	4,453	.3	56	14	3.9
550	31	5,147	- 4.0	50	17	4.7
500	31	5,892	- 8.3	46	11	3.9
450	30	6,710	-13.5	40	325	3.3
400	30	7,587	-19.9	32	319	4.7
350	29	8,560	-27.1		308	5.2
300	29	9,651	-35.6		296	6.2
250	29	10,893	-45.2		295	7.6
200	29	12,346	-55.8		295	7.8
175	29	13,187	-60.6		287	6.6
150	29	14,135	-65.1		291	4.3
125	26	15,236	-69.3		322	3.7
100	24	16,565	-68.9		24	4.5
80	23	17,911	-65.5		76	11.1
60	23	19,678	-60.3		83	16.7
50	23	20,820	-58.4		83	20.4
40	23	22,232	-55.2		84	26.2
30	18	24,082	-52.5		86	32.1
20	16	26,720	-48.3		90	37.1
15	6	28,635	-46.4			

GLASGOW, MONT.
(935 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	695	21.6	50	77	6.8
1,000	31	105				
950	31	561				
900	31	1,026	20.7	49	61	5.4
850	31	1,517	17.1	51	357	2.1
800	31	2,031	13.2	54	304	6.0
750	31	2,576	9.2	56	300	12.8
700	31	3,139	5.1	57	302	18.1
650	31	3,744	.9	52	301	20.6
600	30	4,381	- 3.0	44	301	22.9
550	30	5,066	- 7.3	37	298	24.7
500	30	5,800	-12.3	35	298	27.0
450	30	6,603	-18.0		296	29.9
400	30	7,466	-24.5		296	34.8
350	30	8,424	-31.9		288	33.0
300	30	9,495	-39.9		281	38.3
250	29	10,709	-48.1		275	36.7
200	29	12,160	-53.1		274	42.3
175	29	13,019	-54.0		278	42.2
150	27	14,007	-56.3		284	30.1
125	25	15,154	-57.6			
100	23	16,557	-57.6			
80	23	17,968	-56.2			
60	22	19,806	-53.9			
50	21	20,979	-52.3			
40	19	22,426	-51.0			
30	15	24,306	-48.6			
20	6	26,982	-45.4			
15						

GRAND JUNCTION, COLO.
(852 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	26.8	25	3	4.5
1,000	31	29				
950	31	499				
900	31	983				
850	31	1,492	27.1	24	350	3.7
800	31	2,026	24.8	25	320	3.9
750	31	2,591	20.0	28	299	4.5
700	31	3,175	14.6	32	281	5.2
650	31	3,797	8.9	40	276	6.4
600	31	4,451	3.1	49	265	7.2
550	31	5,152	- 2.7	55	252	6.6
500	31	5,898	- 8.3	51	250	8.0
450	30	6,724	-13.7		254	10.3
400	30	7,595	-19.9		259	14.0
350	30	8,571	-27.2		262	17.3
300	30	9,662	-35.7		259	19.6
250	30	10,903	-45.4		259	22.5
200	30	12,355	-55.5		263	24.1
175	30	13,196	-60.0		278	19.0
150	29	14,149	-63.2		284	18.3
125	28	15,263	-65.7		286	13.8
100	26	16,617	-65.7		308	9.1
80	23	17,982	-62.2		302	2.1
60	23	19,773	-58.4		78	12.8
50	21	20,926	-55.9		76	15.7
40	21	22,354	-53.1			
30	15	24,211	-51.0			
20						
15						

GREAT FALLS, MONT.
(889 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	22.3	43	21	3.5
1,000	31	86				
950	31	543				
900	31	1,017				
850	31	1,515	20.3	40	20	5.2
800	31	2,034	16.3	44	303	2.1
750	31	2,581	11.8	49	261	6.6
700	31	3,152	7.2	54	267	11.3
650	31	3,758	2.5	56	264	15.3
600	31	4,398	- 2.3	55	268	17.1
550	31	5,082	- 6.9	44	272	19.2
500	30	5,817	-11.9	38	270	21.8
450	29	6,620	-17.6		270	23.9
400	29	7,483	-23.8		270	28.2
350	29	8,443	-31.1		271	31.3
300	29	9,517	-39.4		266	35.0
250	29	10,742	-47.7		265	38.5
200	29	12,195	-52.8		268	37.5
175	29	13,055	-54.0		269	35.7
150	24	14,034	-55.7		269	28.9
125	18	15,186	-57.0		274	21.2
100	15	16,585	-57.9		286	9.3
80	7	18,007	-57.0			
60						
50						
40						
30						
20						
15						

GREEN BAY, WIS.
(989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	210	17.4	84	101	1.2
1,000	31	115				
950	31	558	17.9	68	24	1.0
900	31	1,017	15.0	67	323	3.3
850	31	1,498	12.0	65	311	5.8
800	31	2,004	9.6	60	312	8.4
750	31	2,542	7.0	52	303	10.9
700	31	3,102	3.7	53	302	14.4
650	31	3,703	.3	51	299	17.9
600	31	4,338	- 3.4	48	295	20.0
550	31	5,019	- 7.7	43	294	22.7
500	31	5,755	-12.5	40	294	25.8
450	31	6,557	-17.8	40	293	28.9
400	31	7,423	-23.9	38	289	30.5
350	31	8,382	-31.2	43	284	34.4
300	31	9,455	-39.5		274	38.7
250	31	10,676	-48.4		271	44.7
200	30	12,124	-53.8		277	47.8
175	30	12,977	-55.6		278	39.4
150	30	13,953	-57.5		279	33.6
125	30	15,099	-58.9		279	25.6
100	30	16,496	-59.2		293	17.3
80	30	17,897	-57.7		315	6.8
60	30	19,725	-54.6		53	5.6
50	30	20,896	-53.0		65	10.3
40	30	22,338	-51.5		77	12.0
30	25	24,210	-49.9		81	17.7
20	10	26,870	-46.9			

GREENSBORO, N. C.
(986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	273	22.9	82	219	2.9
1,000	31	148				
950	31	601	23.9	66	233	7.2
900	31	1,070	21.3	66	241	8.9
850	31	1,564	17.8	70	254	9.5
800	31	2,080	14.1	71	263	9.9
750	31	2,627	10.6	69	273	10.7
700	31	3,195	7.3	65	273	12.0
650	31	3,809	4.0	61	269	11.7
600	31	4,449	.3	55	276	12.4
550	31	5,145	- 3.7	55	276	13.6
500	31	5,889	- 8.2	53	277	15.5
450	31	6,712	-12.8	46	272	16.5
400	31	7,590	-18.5	42	268	18.1
350	31	8,572	-25.7	41	268	19.6
300	31	9,671	-34.0	41	267	22.1
250	31	10,921	-44.0		265	25.8
200	31	12,383	-55.1		269	26.6
175	31	13,225	-60.4		280	25.3
150	31	14,173	-65.3		284	20.0
125	31	15,277	-67.2		289	13.8
100	30	16,627	-65.6		280	5.4
80	30	17,993	-62.3		58	4.9
60	30	19,789	-57.8		87	9.5
50	28	20,947	-55.3		86	13.2
40	25	22,373	-53.8		90	19.2
30	23	24,229	-51.5		90	27.2
20	12	26,880	-47.9			

HATTERAS, N. C.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	25.3	87	185	9.3
1,000	31	151	24.6	84	204	13.0
950	31	601	22.6	73	234	14.8
900	31	1,071	20.0	70	248	12.4
850	31	1,562	17.1	66	259	12.8
800	31	2,077	14.1	60	258	12.4
750	31	2,619	11.0	54	260	12.0
700	31	3,191	7.6	53	261	12.0
650	31	3,800	3.9	51	262	12.6
600	31	4,445	.3	50	265	12.0
550	31	5,137	- 3.6	44	260	12.2
500	31	5,885	- 8.0	40	257	13.0
450	31	6,703	-13.0	38	270	14.6
400	31	7,585	-18.5	34	278	17.5
350	31	8,566	-25.3		278	19.0
300	31	9,666	-33.6		276	19.2
250	31	10,917	-43.3		276	20.6
200	30	12,380	-54.9		271	20.8
175	30	13,221	-60.7		276	20.2
150	30	14,168	-65.0		287	16.5
125	30	15,269	-67.9		296	9.7
100	29	16,615	-66.4		226	4.3
80	27	17,976	-62.8		91	3.7
60	27	19,767	-58.2		78	9.7
50	25	20,922	-56.0		82	14.4
40	25	22,347	-53.9		81	19.8
30	21	24,201	-51.8		80	24.3
20	6	26,860	-49.2			

HILO, T. H.
(1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	26.0	68	70	7.0
1,000	31	142	23.9	71	68	6.8
950	31	594	20.2	81	73	6.2
900	31	1,054	17.0	84	61	4.5
850	31	1,540	14.0	85	56	3.3
800	31	2,050	12.2	67	80	4.1
750	31	2,598	11.4	36	81	5.6
700	31	3,164	8.4	36	72	4.3
650	31	3,782	5.2	36	101	2.9
600	31	4,423	1.7	35	130	4.1
550	31	5,119	- 2.1		180	4.1
500	31	5,871	- 6.7		192	6.6
450	31	6,695	-12.4		209	11.3
400	31	7,575	-19.1		227	15.7
350	31	8,553	-26.8		232	19.0
300	31	9,645	-35.5		241	25.8
250	31	10,887	-45.5		247	30.1
200	31	12,336	-56.7		256	31.1
175	31	13,171	-62.3		253	32.4
150	31	14,112	-66.4		255	27.2
125	30	15,210	-68.1		236	13.8
100	29	16,543	-69.4		133	9.7
80	29	17,878	-67.4		101	19.2
60	29	19,632	-61.9		95	32.4
50	29	20,768	-58.5		90	38.3
40	29	22,179	-55.8		92	42.5
30	26	24,020	-52.2		92	49.0
20	18	26,666	-46.8			

INTERNAT. FALLS, MINN.
(972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	360	16.6	81	302	1.0
1,000	30	119				
950	30	558	17.5	67	293	1.0
900	30	1,020	14.8	66	317	3.9
850	30	1,501	11.3	71	312	5.2
800	30	2,005	8.3	65	317	6.4
750	30	2,541	5.1	60	314	10.5
700	30	3,097	2.4	54	310	12.6
650	29	3,695	- 1.0	45	307	15.3
600	29	4,327	- 4.6	41	297	18.5
550	28	5,005	- 8.9	39	300	21.2
500	28	5,739	-13.5	41	298	21.2
450	28	6,537	-18.8	39	295	24.7
400	26	7,400	-24.6		290	31.5
350	26	8,357	-31.9		288	38.1
300	26	9,426	-40.0		288	42.5
250	26	10,645	-48.7		286	49.3
200	24	12,101	-51.6		286	52.1
175	24	12,964	-52.9		283	48.2
150	23	13,961	-54.3		290	41.2
125	22	15,126	-56.3		296	29.5
100	22	16,543	-55.8		300	18.5
80	19	17,965	-55.2		307	10.1
60	16	19,811	-52.7		43	6.0
50	13	20,984	-51.6		82	11.5
40	10	22,445	-49.9			
30	6	24,344	-48.1			
20						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

JACKSON, MISS (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	101	25.7	77	199	1.6
1,000	31	148	25.9	71	202	2.7
950	31	606	25.4	56	226	5.6
900	31	1,075	22.2	57	248	4.3
850	31	1,569	18.9	55	282	3.1
800	31	2,087	15.6	49	312	4.1
750	31	2,632	12.1	47	324	4.9
700	31	3,206	8.3	49	323	6.6
650	31	3,817	4.7	44	324	8.4
600	31	4,462	1.1	41	331	8.9
550	31	5,160	- 3.2	41	332	7.8
500	31	5,904	- 7.8	39	325	7.8
450	31	6,726	12.6	36	324	6.2
400	31	7,606	-18.2	32	298	6.2
350	31	8,588	25.4		282	7.4
300	31	9,688	-33.8		259	8.4
250	31	10,939	-43.8		247	8.9
200	31	12,399	-55.4		246	11.7
175	31	13,239	-60.9		248	11.1
150	31	14,184	-66.0		270	8.5
125	30	15,280	69.3		315	5.8
100	28	16,608	-69.2		39	4.5
80	25	17,943	65.5		76	8.9
60	22	19,712	-60.6		85	17.7
50	22	20,853	-57.9		88	22.1
40	21	22,266	-55.2		86	27.6
30	14	24,116	-52.1		91	31.7
20	5	26,769	-48.4			
15						

JACKSONVILLE, FLA. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	24.5	89	208	4.9
1,000	31	167	25.0	78	209	8.4
950	31	617	23.4	67	223	9.9
900	31	1,089	20.6	67	228	8.4
850	31	1,580	17.3	69	234	7.2
800	31	2,096	13.9	68	239	5.1
750	31	2,637	10.6	64	228	3.9
700	31	3,210	7.2	61	233	4.3
650	31	3,821	3.9	58	225	2.7
600	31	4,463	.1	58	230	2.9
550	31	5,156	- 3.6	56	211	2.7
500	31	5,903	- 8.0	51	199	2.3
450	31	6,720	-13.1	48	192	2.3
400	31	7,601	-18.9	48	161	4.1
350	31	8,582	-25.7	42	147	2.5
300	30	9,680	-34.0		106	2.5
250	30	10,930	-43.9		57	3.5
200	30	12,389	55.4		42	5.2
175	30	13,223	61.4		47	7.2
150	29	14,171	-66.6		60	5.8
125	28	15,266	-69.2		71	6.4
100	28	16,597	-68.9		66	8.7
80	28	17,939	-66.1		89	12.0
60	26	19,705	61.2		91	16.9
50	26	20,841	-58.9		88	20.4
40	25	22,246	-56.7		87	29.9
30	24	24,084	-53.1		92	36.5
20	20	26,717	-49.5		91	41.8
15	7	28,635	46.9			

KING SALMON, ALASKA (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	17.0	64	200	4.7
1,000	31	141	15.3	67	208	4.9
950	31	573	11.6	72	176	3.7
900	31	1,023	9.0	77	157	2.3
850	31	1,495	6.5	78	191	2.1
800	31	1,990	3.7	78	182	2.7
750	31	2,519	.9	76	148	1.7
700	31	3,064	- 1.5	67	149	1.4
650	31	3,654	- 4.7	59	140	1.4
600	31	4,276	- 8.3	56	74	.4
550	31	4,947	-12.6	52	13	.8
500	30	5,669	17.2	45	321	1.9
450	30	6,460	-22.7	43	315	5.1
400	30	7,304	-28.9	43	313	7.0
350	30	8,245	-35.9	44	333	7.8
300	30	9,297	-43.9		328	10.9
250	30	10,497	-51.7		325	11.3
200	30	11,935	-52.3		313	11.1
175	30	12,800	-50.9		303	11.7
150	30	13,803	-50.1		298	8.5
125	29	14,993	-50.2		293	7.4
100	29	16,450	-49.6		291	5.2
80	28	17,917	-48.6		288	2.3
60	25	19,812	-48.0		129	1.7
50	24	21,019	-47.5		85	7.0
40	21	22,503	-46.9		88	9.5
30	20	24,417	-45.2		83	12.0
20	14	27,147	-42.0		80	14.6
15	7	29,115	-38.5			

KOTZEBUE, ALASKA (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	[illegible]	13.2	77	266	5.6
1,000	31	127	11.6	72	257	5.6
950	31	557	10.4	69	243	7.0
900	31	1,003	8.1	66	243	8.9
850	31	1,472	6.1	65	239	11.1
800	31	1,967	3.6	61	244	11.3
750	31	2,493	.9	56	249	12.8
700	31	3,039	- 2.1	53	251	12.4
650	30	3,627	- 5.6	48	251	12.8
600	30	4,248	- 9.4	44	255	15.2
550	30	4,914	-13.7	41	259	15.3
500	30	5,632	-18.4		262	14.8
450	30	6,414	-23.6	37	263	14.8
400	30	7,260	-29.8	38	264	17.1
350	30	8,196	-37.0	36	268	17.5
300	30	9,242	-44.9		279	16.7
250	30	10,438	-52.0		285	14.4
200	30	11,881	-49.8		284	10.7
175	30	12,759	-47.8		290	11.8
150	30	13,776	-47.0		273	11.7
125	30	14,983	-46.5		294	8.0
100	30	16,465	-45.7		292	4.7
80	30	17,954	-44.7		268	3.5
60	29	19,881	-43.5		88	.8
50	29	21,106	-43.3		56	2.5
40	25	22,607	-43.3		93	5.1
30	14	24,541	-42.5		88	7.2
20	6	27,288	-39.5			
15						

LAKE CHARLES, LA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	26.4	82	193	3.9
1,000	31	151	26.6	78	196	7.4
950	31	606	24.7	71	194	8.9
900	31	1,077	22.5	58	178	5.8
850	31	1,573	19.6	54	143	4.3
800	31	2,092	16.3	49	125	3.3
750	31	2,636	12.6	48	101	2.1
700	31	3,212	8.8	50	72	2.1
650	31	3,824	4.8	52	41	1.4
600	31	4,470	.9	49	8	2.3
550	31	5,164	- 3.3	49	343	3.1
500	31	5,912	- 7.7	46	323	2.9
450	31	6,732	-12.7	41	351	1.9
400	31	7,613	-18.6	41	277	1.0
350	31	8,594	-25.9	42	224	2.9
300	31	9,691	-34.2		190	4.3
250	31	10,940	-44.1		182	6.2
200	31	12,399	-55.3		194	6.2
175	31	13,240	-60.4		177	5.1
150	30	14,190	-64.9		168	3.5
125	28	15,288	-68.9		87	3.3
100	27	16,620	-69.4		70	8.5
80	27	17,961	-66.0		82	14.4
60	27	19,724	-60.9		86	21.6
50	25	20,862	-58.2		85	27.6
40	21	22,274	-55.2		89	29.5
30	18	24,117	-52.7		93	35.4
20	12	26,755	-49.0		86	40.0
15	6	28,632	-46.4			

LANDER, WYO (831 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,696	22.7	34	282	1.9
1,000	31	50				
950	31	509				
900	31	993				
850	31	1,502				
800	31	2,031	21.8	29	332	3.9
750	31	2,586	17.2	33	324	3.9
700	31	3,170	12.2	38	295	2.7
650	31	3,785	6.8	43	272	5.4
600	31	4,437	1.3	48	275	10.3
550	31	5,123	- 4.4	50	279	14.0
500	31	5,873	-10.1	47	276	15.9
450	31	6,680	-15.9	40	272	20.2
400	31	7,554	-22.1		271	25.1
350	31	8,521	-29.4		271	27.0
300	31	9,601	-37.6		267	28.4
250	31	10,834	-46.6		274	29.7
200	31	12,282	-55.3		273	31.9
175	31	13,128	-58.1		280	27.6
150	31	14,093	-60.4		283	23.7
125	30	15,222	-62.2		289	14.8
100	30	16,600	-61.9		302	4.7
80	30	17,985	-59.8		48	5.4
60	28	19,799	-56.5		75	10.1
50	27	20,961	-54.5		80	12.6
40	26	22,398	52.3		82	13.2
30	16	24,256	-50.2		88	18.5
20						

LAS VEGAS, NEV. (935 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	660	33.5	19	217	9.5
1,000	31	44				
950	31	513				
900	31	1,003	32.1		216	12.8
850	31	1,512	27.6		213	12.0
800	31	2,044	22.8	26	210	10.1
750	31	2,602	17.8	31	202	8.5
700	31	3,186	12.6	37	190	6.4
650	31	3,802	7.3	42	189	5.2
600	31	4,455	2.2	44	217	6.4
550	31	5,154	- 2.7	44	221	7.8
500	31	5,901	- 7.6		219	7.0
450	29	6,722	-13.0		228	10.3
400	29	7,602	-19.2		231	13.8
350	29	8,580	-26.4		232	16.3
300	28	9,674	-34.8		232	19.4
250	27	10,916	-44.2		234	23.9
200	26	12,376	-54.5		235	28.9
175	25	13,223	-59.6		234	26.4
150	23	14,175	-64.5		230	23.1
125	18	15,278	-66.6		220	18.6
100	15	16,633	-65.7		208	12.0
80	13	17,997	-63.8		144	3.1
60	12	19,778	-59.4		91	14.4
50	12	20,927	-56.6		86	14.6
40	12	22,352	-53.5		91	22.0
30	11	24,211	-51.2			
20						

LITTLE ROCK, ARK. (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	79	26.6	73	172	3.7
1,000	31	128	26.9	70	175	3.5
950	31	586	26.2	58	201	8.0
900	31	1,058	23.0	60	216	8.4
850	31	1,554	19.5	62	240	7.4
800	31	2,074	16.1	57	265	6.0
750	31	2,617	12.5	54	273	6.8
700	31	3,195	8.7	52	301	6.6
650	31	3,806	4.7	55	318	7.2
600	30	4,452	.6	55	330	6.8
550	30	5,146	- 3.3	48	327	9.3
500	30	5,894	- 7.6	40	310	10.3
450	30	6,713	-12.6	35	302	8.5
400	30	7,596	-18.5	35	290	8.9
350	29	8,579	-25.7		282	9.3
300	27	9,680	-34.0		279	11.1
250	27	10,930	-43.7		270	13.8
200	26	12,392	-54.7		272	14.4
175	26	13,234	-59.9		282	11.1
150	26	14,184	-64.5		287	10.1
125	25	15,287	-67.8		326	7.2
100	24	16,627	-66.7		18	5.4
80	22	17,974	-64.3		64	6.6
60	21	19,749	-59.2		76	12.6
50	21	20,898	-56.4		77	15.2
40	20	22,321	-54.0		83	19.4
30	14	24,165	-51.5		84	27.8
20	5	26,794	-47.9			

MAZATLAN, MEXICO (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	14	28.8	75		
1,000	31	97	28.1	74		
950	31	562	25.0	71		
900	31	1,027	22.8	69		
850	31	1,524	20.2	65		
800	31	2,045	17.1	64		
750	31	2,597	13.9	63		
700	31	3,173	10.2	65		
650	31	3,790	6.1	70		
600	31	4,438	1.8	74		
550	31	5,136	- 2.6	71		
500	31	5,886	- 6.8	68		
450	30	6,708	-11.6	63		
400	30	7,595	-17.2	58		
350	29	8,582	-24.2			
300	29	9,686	-32.5			
250	27	10,943	-42.6			
200	25	12,410	-54.8			
175	17	13,250	-61.0			
150	13	14,200	-67.4			
125	5	15,269	-70.9			
100						
80						
60						
50						
40						
30						
20						

MC GRATH, ALASKA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	103	19.7	55	213	2.3
1,000	31	129			207	4.5
950	31	565	15.3	57	227	3.9
900	31	1,022	11.5	64	234	4.3
850	31	1,497	7.6	69	223	5.8
800	31	1,994	4.3	70	229	4.7
750	31	2,518	1.4	61	203	4.7
700	31	3,069	- 1.7	56	225	4.3
650	31	3,653	- 5.3	51	239	4.7
600	31	4,279	- 8.9	50	236	2.1
550	31	4,945	-13.1	47	211	1.6
500	31	5,667	-17.7	45	258	1.6
450	31	6,452	-23.1	46	237	4.1
400	30	7,305	-29.0	45	306	4.9
350	30	8,244	-36.3	43	317	6.4
300	30	9,295	-44.0			
250	30	10,497	-51.3			
200	30	11,936	-52.3			
175	30	12,803	-50.1			
150	30	13,812	-48.9			
125	30	15,011	-48.2			
100	30	16,482	-47.2			
80	29	17,962	-46.4			
60	27	19,872	-45.4			
50	27	21,088	-44.9			
40	22	22,574	-45.0			
30	21	24,497	-44.0			
20	8	27,232	-40.6			

MEDFORD, ORE. (968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	27.5	36	327	7.2
1,000	31	109				
950	31	569	26.5	36	322	8.5
900	31	1,038	22.8	41	317	10.3
850	31	1,533	18.9	47	316	8.4
800	31	2,050	15.2	49	308	5.6
750	31	2,600	11.2	52	278	3.9
700	31	3,165	7.0	52	238	6.8
650	31	3,777	2.9	44	224	8.2
600	31	4,414	- 1.4	35	234	7.6
550	31	5,107	- 5.8		241	7.6
500	31	5,841	-10.7		240	10.5
450	31	6,655	16.5		251	11.7
400	31	7,518	-22.9		239	12.2
350	31	8,482	-30.3		232	14.2
300	31	9,559	38.6		232	16.5
250	31	10,787	-47.0		228	18.8
200	30	12,244	53.1		236	19.8
175	30	13,100	-55.2		236	19.2
150	30	14,077	-58.0		241	19.0
125	30	15,220	-60.1		232	12.0
100	30	16,609	-60.6		180	3.5
80	29	17,998	-59.2		91	3.7
60	28	19,813	-56.0		91	12.2
50	28	20,977	-54.1		82	13.2
40	25	22,419	-51.6		92	18.3
30	18	24,290	-49.9		88	22.1
20						

MIAMI, FLA. (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	27.0	77	120	4.3
1,000	31	167	25.9	77	123	7.8
950	31	612	22.8	76	132	11.1
900	31	1,088	19.9	72	132	10.7
850	31	1,579	17.0	67	126	9.1
800	31	2,093	14.0	66	123	6.8
750	31	2,631	10.7	60	130	5.1
700	31	3,207	7.4	52	130	5.4
650	31	3,811	3.7	48	138	5.8
600	31	4,458	- .2	45	158	5.4
550	31	5,145	- 4.6	42	174	5.1
500	31	5,893	- 9.2	39	167	5.1
450	30	6,702	-14.5	41	151	5.1
400	29	7,582	-20.5	39	134	6.2
350	29	8,555	-27.8	39	124	7.4
300	29	9,643	-36.1	39	99	7.0
250	29	10,882	-45.9		78	11.1
200	28	12,329	-57.3		74	13.8
175	26	13,162	-62.4		68	15.3
150	26	14,102	-66.3		77	15.9
125	23	15,200	-69.0		82	12.8
100	22	16,530	-69.8		92	15.0
80	20	17,861	-66.6		96	20.6
60	20	19,622	-62.0		89	26.8
50	19	20,758	-59.1		89	32.6
40	18	22,165	-55.8		90	33.2
30	17	24,012	-52.0		91	38.3
20	11	26,657	-47.5			

MIDLAND, TEX. (916 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	871	29.1	38	141	6.6
1,000	31	81				
950	31	546				
900	31	1,029	28.7	36	146	11.3
850	31	1,534	24.9	39	155	18.5
800	31	2,063	20.5	45	160	15.7
750	31	2,616	15.7	51	161	10.7
700	31	3,198	11.1	53	151	5.6
650	31	3,815	6.7	49	75	4.7
600	31	4,464	2.0	48	50	6.4
550	31	5,162	- 2.7	44	35	8.0
500	31	5,910	- 7.3	39	43	6.8
450	31	6,735	-12.4	34	28	5.8
400	30	7,615	-18.4	35	9	6.8
350	30	8,597	-25.5		339	8.2
300	30	9,695	-34.0		338	10.9
250	30	10,945	-44.0		341	10.9
200	30	12,407	-54.9		347	10.1
175	30	13,249	-60.2		350	10.1
150	27	14,203	-65.2		8	6.6
125	18	15,297	-69.1		52	2.3
100	14	16,619	-69.0		47	7.4
80	14	17,963	-66.0		73	14.6
60	14	19,731	-60.4		80	19.6
50	13	20,873	-58.3		82	22.0
40	13	22,286	-55.2		85	26.8
30	13	24,138	-51.7		89	33.0
20	11	26,787	-48.6			

MONTGOMERY, ALA. (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	25.0	88	198	3.1
1,000	31	155	25.5	81	202	4.7
950	31	611	24.6	70	230	6.6
900	31	1,081	21.7	68	247	4.3
850	31	1,576	18.4	69	289	1.5
800	31	2,094	15.0	65	315	3.9
750	31	2,641	11.6	62	338	3.3
700	31	3,212	8.1	63	327	3.5
650	30	3,827	4.4	61	323	4.9
600	29	4,468	1.0	55	317	5.2
550	28	5,166	- 3.0	53	330	6.0
500	28	5,914	- 7.6	52	320	6.4
450	28	6,739	-12.8	51	320	6.4
400	28	7,615	-18.8	49	305	5.6
350	28	8,596	-25.6	47	284	7.4
300	28	9,694	-33.8	45	278	9.3
250	28	10,945	-43.8		270	11.8
200	28	12,406	-55.3		259	11.8
175	28	13,247	-60.6		260	11.5
150	28	14,194	-65.3		293	8.0
125	28	15,293	-68.5		302	5.1
100	23	16,632	-67.9		37	3.3
80	20	17,980	-64.4		68	7.6
60	19	19,752	-60.0		87	15.0
50	17	20,901	-57.6		83	21.6
40	13	22,314	-55.3		85	26.4
30	9	24,179	-50.9			
20						

NANTUCKET, MASS. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	14	17.7	91	247	4.5
1,000	30	133	19.0	83	243	8.9
950	30	576	18.6	68	264	14.0
900	30	1,037	16.2	65	268	14.4
850	30	1,521	13.3	63	268	15.3
800	30	2,029	10.2	61	267	16.9
750	30	2,567	7.3	59	265	19.2
700	30	3,129	4.4	50	264	21.2
650	30	3,734	1.3	48	269	25.1
600	30	4,369	- 2.4	47	269	26.0
550	30	5,055	- 6.4	48	271	29.7
500	30	5,794	-10.7	41	271	30.9
450	30	6,603	-16.0	38	271	34.0
400	30	7,475	-22.0	36	274	35.7
350	30	8,443	-28.9		275	39.8
300	30	9,527	-37.2		281	48.6
250	30	10,761	-46.4			
200	30	12,211	-55.3			
175	30	13,055	-58.9			
150	30	14,014	-61.8			
125	30	15,138	-62.5			
100	28	16,513	-61.7			
80	28	17,902	-59.2			
60	28	19,718	-55.9			
50	28	20,882	-54.2			
40	27	22,318	-52.4			
30	26	24,188	-50.5			
20	14	26,849	-47.6			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

JULY 1956

Standard pressure surface (mb.)	NASHVILLE, TENN. (996 MB.)						NOME, ALASKA (1015 MB.)						NORFOLK, VA. (1016 MB.)						NORTH PLATTE, NEBR. (917 MB.)						OAKLAND, CALIF. (1014 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	177	25.8	71	220	2.1	31	7	10.9	84	231	6.2	31	9	23.9	84	193	1.9	31	848	22.6	[illegible]	78	4.9	31	[illegible]	15.2	79	293	9.7
1,000	31	139					31	132	10.6	80	226	6.6	31	147	23.8	74	203	6.4	31	85					31	127	14.2	80	283	9.7
950	31	596	24.8	61	244	8.4	31	558	9.5	76	243	4.7	31	599	21.8	66	234	10.9	31	543					31	574	18.5	61	265	9.1
900	31	1,066	21.6	63	261	4.6	31	1,007	8.8	69	235	5.8	31	1,062	19.0	63	248	11.1	31	1,016	24.9	47	77	6.2	31	1,029	21.7	31	262	8.7
850	31	1,559	18.0	65	265	8.4	31	1,478	6.6	65	232	7.0	31	1,551	15.8	64	254	12.0	31	1,515	21.9	46	82	5.6	31	1,523	20.2	24	258	5.6
800	31	2,076	14.4	64	272	8.5	31	1,973	4.0	61	227	7.8	31	2,064	12.7	61	262	11.7	31	2,039	18.6	46	40	3.7	31	2,043	17.0	25	234	2.9
750	31	2,622	11.1	58	281	8.2	31	2,501	1.6	56	236	7.2	31	2,607	9.8	52	266	12.6	31	2,592	14.7	45	324	5.4	31	2,591	13.3	24	220	2.1
700	31	3,191	7.5	55	296	10.5	31	3,049	- 1.0	46	235	8.7	31	3,173	6.5	50	262	15.0	31	3,169	10.2	46	307	9.1	31	3,165	9.4	26	207	2.7
650	31	3,807	4.1	46	294	12.2	31	3,641	- 4.2	40	248	9.1	31	3,784	3.3	46	264	15.2	31	3,784	5.7	46	304	13.6	31	3,776	5.3	[illegible]	205	3.9
600	31	4,445	.4	38	291	13.4	31	4,264	- 8.0	42	254	8.5	31	4,423	- .4	45	269	16.9	31	4,431	1.0	49	305	15.3	31	4,424	.8		212	5.8
550	31	5,140	3.6		293	14.4	31	4,936	-12.2	39	254	8.5	30	5,115	- 4.4	41	269	17.3	31	5,124	- 4.2	49	306	18.5	31	5,115	- 4.0		213	7.6
500	31	5,884	- 7.9		297	15.9	31	5,657	-17.1	37	258	7.4	30	5,858	- 8.7	36	273	19.4	31	5,869	- 8.9	43	307	20.2	31	5,861	- 9.4		224	9.5
450	31	6,704	-12.8		296	18.1	31	6,446	-22.8	35	266	7.4	28	6,673	-13.9	35	274	22.5	31	6,685	-14.1	36	304	21.2	31	6,672	-15.1		229	12.8
400	31	7,584	-19.0		300	18.6	31	7,292	-28.8		266	7.0	28	7,548	-19.5	38	273	23.7	31	7,561	-20.4		304	22.1	31	7,547	-21.7		232	16.1
350	31	8,563	-26.2		293	19.6	31	8,233	-35.7		258	6.6	28	8,527	-26.6		270	25.1	31	8,535	-27.8		299	24.5	31	8,515	-29.5		231	19.2
300	31	9,658	-34.4		273	21.0	31	9,286	-43.6		264	6.8	28	9,622	-34.7		272	29.7	31	9,623	-36.1		291	27.4	31	9,596	-38.0		234	22.5
250	30	10,905	-44.0		269	25.4	31	10,490	-50.7		274	9.9	28	10,869	-44.4		271	33.4	31	10,861	-45.8		283	34.6	31	10,827	-46.5		234	26.8
200	30	12,366	-54.8		267	19.6	31	11,937	-50.9		305	9.1	28	12,326	-55.7		270	36.3	31	12,313	-55.3		279	32.6	31	12,282	-54.3		232	26.4
175	30	13,208	-60.0		274	20.4	31	12,810	-48.5		285	7.2	28	13,165	-61.2		270	34.8	31	13,158	-58.4		284	26.8	31	13,131	-57.6		233	24.9
150	30	14,159	-64.3		286	17.1	31	13,825	-47.8		289	8.0	26	14,114	-65.7		275	30.3	30	14,116	-62.2		276	22.7	31	14,094	-61.6		225	20.2
125	28	15,263	-67.2		289	16.3	31	15,028	-47.3		277	7.4	25	15,212	-67.0		281	19.8	28	15,233	-65.0		275	19.8	31	15,216	-64.0		224	14.8
100	26	16,614	-65.5		339	7.8	31	16,505	-46.4		287	4.7	21	16,560	-65.6		265	9.5	26	16,593	-63.6		295	11.3	30	16,580	-64.8		207	6.8
80	25	17,978	-63.0		82	3.1	31	17,988	-45.3		252	3.3	20	17,921	-62.8		279	2.5	25	17,970	-60.8		335	4.1	29	17,946	-62.5		119	5.1
60	24	19,766	-58.2		73	13.8	31	19,910	-44.4		20	1.2	19	19,712	-57.9		83	7.8	22	19,771	-57.0		80	7.6	27	19,738	-58.6		87	12.0
50	23	20,920	-56.4		80	17.1	29	21,129	-44.1		89	3.1	18	20,871	-55.6		81	13.6	22	20,929	-55.2		83	11.5	27	20,889	-56.4		89	16.3
40	22	22,347	-53.6		84	23.9	29	22,625	-44.1		85	6.4	16	22,292	-53.9		82	20.8	20	22,361	-52.8		85	13.2	27	22,314	-53.7		85	21.4
30	20	24,207	-50.6		91	26.8	26	24,555	-43.2		85	8.7	11	24,139	-51.8				9	24,225	-50.6				22	24,178	-50.5		95	24.3
20	12	26,860	-47.3				22	27,297	-40.0		92	9.5													15	26,828	-47.4		89	28.0
15							10	29,267	-37.8																10	28,763	-44.5			

Standard pressure surface (mb.)	OKLAHOMA CITY, OKLA. (968 MB.)						OMAHA, NEBR. (967 MB.)						PHOENIX, ARIZ. (970 MB)						PITTSBURGH, PA. (975 MB.)						PORTLAND, ME. (1012 MB.)					
SURFACE	31	391	27.4	55	163	6.4	31	403	22.6	72	74	3.3	31	341	34.1	29	251	3.3	31	353	20.4	79	220	2.3	31	20	16.4	85	268	2.1
1,000	31	104					31	104					31	63					31	131					31	125	17.9	72	261	4.1
950	31	567	29.0	45	164	8.7	31	560	24.1	60	81	4.3	31	529	34.2	27	261	5.6	31	580	20.6	72	226	5.2	31	569	17.2	60	270	10.1
900	31	1,043	26.7	44	185	11.8	31	1,027	21.6	56	102	1.4	31	1,016	30.7	29	269	8.4	31	1,044	17.8	73	254	9.1	31	1,025	14.5	60	274	10.7
850	31	1,545	23.1	48	203	10.9	31	1,520	18.4	58	290	4.7	31	1,523	26.5	33	278	7.8	31	1,531	14.6	69	260	12.4	31	1,505	11.4	59	275	11.3
800	31	2,070	19.1	52	220	10.9	31	2,037	15.1	53	296	10.5	31	2,054	22.0	39	280	7.0	31	2,041	11.4	65	268	13.0	31	2,009	8.3	60	270	12.6
750	31	2,623	15.2	52	238	9.3	31	2,589	11.6	54	305	14.6	31	2,613	17.2	44	276	3.3	31	2,586	8.3	60	274	15.0	31	2,548	5.5	56	271	16.1
700	31	3,202	11.0	52	248	8.4	31	3,154	7.7	53	304	17.5	31	3,193	12.2	48	243	1.6	31	3,146	4.8	59	280	16.5	31	3,102	2.5	53	268	19.0
650	31	3,818	6.5	52	281	6.8	31	3,768	3.8	47	306	19.4	31	3,815	7.2	51	161	1.9	31	3,755	1.5	56	281	19.2	31	3,703	- .7	52	267	23.9
600	31	4,467	1.8	52	306	7.8	31	4,407	- .4	44	304	19.4	31	4,462	2.4	51	135	3.1	30	4,388	2.0	57	276	21.6	31	4,334	- 3.9	46	267	26.6
550	31	5,166	- 2.7	47	317	8.5	31	5,100	- 5.0	42	301	21.6	31	5,162	- 2.6	51	145	3.5	30	5,077	- 6.0	49	274	25.1	31	5,019	7.8	39	265	31.1
500	31	5,912	- 7.2	43	318	10.1	31	5,840	- 9.6	37	300	23.3	31	5,909	- 7.4	48	184	3.7	30	5,816	-10.6	47	278	27.4	31	5,751	-11.9		266	35.2
450	28	6,731	-12.3		314	8.5	31	6,658	-15.0		297	25.1	31	6,733	-12.3	40	210	5.6	30	6,625	-15.8	43	278	30.9	31	6,555	-17.0		270	40.8
400	28	7,613	-18.3		298	8.7	30	7,529	21.0		291	28.0	31	7,613	-18.2	35	220	6.2	30	7,497	-22.0	43	274	31.7	31	7,425	-23.1		268	44.9
350	27	8,594	-25.5		293	12.2	28	8,507	-28.2		286	30.9	31	8,596	-25.4	36	219	7.2	28	8,464	-29.2	42	274	36.1	31	8,389	-29.9		270	49.9
300	27	9,693	-33.9		292	11.8	27	9,590	-36.6		282	31.1	31	9,696	-33.7		215	8.9	28	9,547	-37.3		268	42.7	30	9,466	-38.3		272	56.7
250	27	10,943	-43.5		294	16.1	27	10,827	-45.9		284	37.3	31	10,949	-43.2		217	5.1	28	10,780	-46.2		267	51.3	29	10,690	-47.3		271	65.7
200	27	12,409	-53.7		297	13.6	26	12,280	-54.3		280	39.0	31	12,414	-54.6		237	5.4	26	12,234	-55.5		267	53.0	27	12,132	-53.3		269	72.3
175	27	13,257	-58.6		305	11.7	26	13,128	-58.1		283	37.9	29	13,258	-60.6		234	6.2	25	13,069	-59.6		269	53.0	27	12,988	-55.0		271	62.5
150	27	14,214	-63.2		294	11.1	26	14,090	-61.4		287	33.4	29	14,205	-66.0		221	8.4	21	14,015	-61.8		271	42.3	26	13,962	-57.0		271	49.7
125	27	15,323	-67.2		300	8.2	26	15,210	-64.2		289	26.2	29	15,301	-69.4		224	4.5	16	15,138	-62.6		277	32.2	24	15,108	-58.4		271	37.9
100	27	16,667	-66.4		353	5.1	26	16,577	-63.3		307	16.5	26	16,633	-68.5		126	6.6	8	16,510	-62.2				23	16,512	-58.1		268	28.2
80	23	18,030	-63.8		72	8.0	25	17,954	-60.9		344	6.0	25	17,981	-65.3		91	10.5							20	17,923	-56.7		266	11.1
60	22	19,814	-58.9		83	13.6	22	19,760	-56.7		63	9.9	21	19,755	-59.9		82	19.4							18	19,758	-53.3		134	2.3
50	22	20,965	-56.0		80	16.9	21	20,919	-54.5		77	13.8	21	20,900	-57.6		92	21.2							17	20,936	-51.9		79	6.0
40	20	22,393	-53.2		78	21.6	20	22,350	-52.7		83	19.2	20	22,317	-55.1		89	26.8							17	22,385	-50.6		80	13.4
30	15	24,245	-50.7		88	28.9	18	24,215	-50.6		89	22.5	17	24,171	-51.6		90	31.3							15	24,261	-48.7		83	17.5
20							6	26,874	-47.3				10	26,815	-48.2										5	26,961	-45.4			

Standard pressure surface (mb.)	RAPID CITY, S. DAK. (906 MB.)						ST. CLOUD, MINN. (977 MB.)						ST. PAUL IS., ALASKA (1015 MB.)						SALEM, OREG. (1009 MB.)						SAN ANTONIO, TEX. (987 MB.)					
SURFACE	31	966	21.8	55	61	5.4	31	316	18.1	83	49	1.0	31	10	7.7	92	235	1.6	31	61	23.1	50	315	6.8	31	243	29.4	53	154	13.6
1,000	31	90					31	116					31	132	6.9	89	226	1.4	31	138	22.3	51	316	8.0	31	123				
950	31	543					31	566	19.5	73	35	2.7	31	564	7.8	85	223	2.5	31	583	19.8	53	338	8.7	31	592	26.8	55	154	22.1
900	31	1,021	22.2	51	54	6.0	31	1,024	16.8	70	357	3.1	31	1,001	8.4	76	223	4.5	31	1,046	16.5	58	1	6.4	31	1,057	23.6	58	162	20.4
850	31	1,517	20.1	49	77	6.6	31	1,509	13.9	67	320	4.7	31	1,473	7.2	72	228	5.1	31	1,530	14.2	52	354	5.1	31	1,555	20.5	58	165	13.8
800	31	2,037	16.3	54	123	1.9	31	2,018	11.0	62	310	7.8	31	1,970	5.4	71	231	5.6	31	2,040	12.4	38	281	3.1	31	2,075	16.7	58	170	9.3
750	31	2,582	12.1	58	274	3.3	31	2,561	7.8	59	312	12.2	31	2,504	3.1	65	239	8.2	31	2,582	9.4	33	247	5.8	31	2,618	13.2	50	160	8.4
700	31	3,157	7.8	61	281	10.3	31	3,120	4.3	59	315	15.2	31	3,053	.3	57	241	7.6	31	3,146	5.7	32	243	7.6	31	3,198	9.7	46	151	8.2
650	31	3,767	3.5	60	293	15.5	31	3,725	.8	56	310	17.7	31	3,652	3.0	51	247	6.8	31	3,751	1.6	32	243	9.1	31	3,811	5.8	43	149	7.4
600	31	4,408	- .9	51	297	21.0	31	4,359	- 3.0	49	307	18.5	31	4,273	- 6.3	43	241	8.2	31	4,388	- 2.5	32	241	9.7	31	4,460	1.7	42	136	4.3
550	31	5,096	- 5.6	48	294	23.3	31	5,044	- 7.2	44	305	19.8	31	4,955	-10.2	36	257	6.4	31	5,073	- 6.9	31	241	9.7	31	5,154	- 2.7	36	128	2.9
500	30	5,836	-10.8	42	293	27.4	31	5,779	-12.2	43	298	21.4	31	5,677	-15.1		249	8.9	31	5,810	-12.1	31	241	11.5	31	5,904	- 7.4	33	82	4.1
450	30	6,646	-16.3	38	291	29.5	31	6,583	-17.6	38	297	24.5	31	6,476	-20.6	36	256	9.7	30	6,612	-18.2		243	13.8	31	6,726	-12.6		44	4.3
400	30	7,513	-22.5		290	33.2	31	7,449	-23.8	36	295	27.0	31	7,326	-26.9	38	251	11.5	30	7,473	-24.7		245	15.0	31	7,605	-18.7		24	2.7
350	30	8,479	-29.5		291	35.7	31	8,410	-31.1		290	31.5	31	8,274	-34.0		274	14.0	30	8,430	-32.2		244	17.3	31	8,585	-26.0		2	3.3
300	30	9,560	-37.9		284	36.7	31	9,484	-39.4		289	32.6	31	9,336	-41.5		318	12.4	30	9,499	-40.3		243	18.8	31	9,681	-34.5		321	2.3
250	30	10,789	-47.4		280	40.6	31	10,708	-47.9		288	36.5	31	10,551	-48.9		314	13.2	30	10,719	-48.7		235	20.8	31	10,927	-44.3		218	1.0
200	30	12,235	-55.5		278	40.0	31	12,160	-52.9		286	37.1	31	12,000	-52.2		320	16.9	30	12,165	-53.5		238	23.3	31	12,386	-55.1		40	1.9
175	30	13,080	-57.9		276	39.0	30	13,022	-55.1		286	36.3	31	12,866	-50.6		307	12.0	28	13,028	-55.1		234	19.0	29	13,229	-59.8		46	3.7
150	27	14,056	-60.4		279	33.4	29	13,996	-57.2		293	34.6	31	13,872	-49.9		316	8.0	28	14,006	-57.2		235	16.7	29	14,179	-65.1		69	4.1
125	25	15,178	-61.4		288	26.0	27	15,139	-58.4		300	24.7	31	15,063	-49.7		304	10.3	27	15,152	-59.0		238	13.2	28	15,277	-69.5		66	4.5
100	20	16,552	-61.5		302	16.7	26	16,539	-58.3		307	17.7	31	16,525	-49.1		304	4.7	27	16,548	-59.6		227	6.2	28	16,600	-70.6		65	8.5
80	15	17,933	-59.4		324	7.8	26	17,946	-57.1		329	8.2	30	17,991	-48.0		333	2.9	26	17,941	-58.4		147	2.3	28	17,932	-67.3		77	15.5
60	12	19,738	-56.5		11	4.7	25	19,776	-54.2		360	7.0	30	19,890	-47.1		59	5.8	22	19,759	-56.1		100	8.2	26	19,682	-61.5		83	22.0
50	11	20,901	-55.1		41	6.6	25	20,950	-52.5		44	7.0	30	21,097	-46.5		105	7.1	21	20,919	-54.0		88	10.1	26	20,819	-58.6		86	24.5
40	8	22,351	-52.5				23	22,398	-51.1		82	11.8	30	22,580	-45.6		72	13.4	18	22,353	-51.9		85	13.4	26	22,228	-55.9		84	33.8
30	8	24,220	-50.0				17	24,288	-49.1		84	15.5	16	24,494	-44.9		90	10.3	16	24,220	-49.3		86	16.7	21	24,071	-52.4		88	36.7
20	6	26,894	-45.8				9	26,967	-46.2				11	27,201	-41.7				11	26,887	-45.4		95	20.4	12	26,701	-48.3			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	SAN DIEGO, CALIF. (999 MB.)						SANTA MARIA, CALIF. (1007 MB.)						SANTA MONICA, CALIF. (1010 MB.)						S. STE. MARIE, MICH. (989 MB.)						SEATTLE, WASH. (1003 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	124	18.4	82	286	5.8	31	74	13.8	81	303	7.8	30	38	18.3	84	245	6.4	30	221	14.2	86	293	2.5	31	124	21.5	56	308	4.5
1,000	31	118			294	5.6	31	132	13.5	82	305	7.2	30	122	17.2	84	241	6.8	30	128					31	153			284	3.1
950	31	566	19.3	58	317	2.3	31	583	16.3	75	326	4.7	30	574	22.2	47	242	5.4	30	569	15.3	69	309	3.7	31	596	18.1	56	295	3.5
900	31	1,026	21.8	31	298	3.1	31	1,032	22.3	34	316	5.8	30	1,033	22.4	36	260	1.9	30	1,020	13.0	66	317	3.3	31	1,056	15.5	56	307	2.9
850	31	1,521	21.1	27	277	4.9	31	1,527	21.3	25	335	1.9	30	1,529	21.4	29	237	4.5	30	1,499	10.1	66	303	4.9	31	1,538	13.0	52	299	2.5
800	31	2,043	18.1	31	259	6.0	31	2,049	18.0	27	76	1.9	30	2,052	18.6	28	232	5.4	30	2,000	7.0	63	299	6.2	31	2,046	10.8	50	290	3.1
750	31	2,595	14.5	36	245	6.2	31	2,600	14.2	27	190	1.0	30	2,601	14.9	29	229	4.9	30	2,535	4.7	57	301	9.5	31	2,590	8.1	41	265	6.4
700	31	3,171	10.5	41	230	6.2	31	3,175	10.4		228	3.5	30	3,182	10.8	35	232	3.9	30	3,089	1.8	52	298	11.8	31	3,148	4.9	35	257	8.9
650	31	3,785	6.0	44	218	6.4	31	3,792	6.2		236	4.9	30	3,795	6.3	40	218	5.4	30	3,688	- 1.5	50	296	15.2	31	3,754	1.2	36	252	11.3
600	31	4,435	1.7	40	229	6.2	31	4,438	1.9		251	7.4	30	4,446	1.8	40	222	7.0	30	4,316	- 5.2	46	295	17.3	31	4,387	- 2.9	36	250	13.2
550	31	5,134	- 2.7	37	220	5.4	31	5,135	- 2.6		242	9.5	30	5,142	- 2.5		225	7.4	30	4,996	- 8.9	44	292	19.6	31	5,074	- 7.4	35	255	14.0
500	31	5,881	- 7.3		218	5.1	31	5,884	- 7.4		238	12.4	30	5,893	- 7.0		228	7.6	29	5,724	-13.9	45	294	22.9	31	5,806	-12.6	36	257	15.7
450	31	6,697	-12.8		197	5.2	31	6,704	-12.7		242	15.0	30	6,716	-12.7		230	9.9	29	6,523	-19.3	42	293	26.8	31	6,613	-18.5	35	256	16.7
400	31	7,582	-19.2		202	6.6	31	7,584	-19.6		242	16.5	29	7,594	-19.3		221	10.7	29	7,382	-25.5	45	293	29.9	31	7,469	-25.0	34	251	18.6
350	31	8,560	-26.5		218	8.5	31	8,560	-26.9		239	18.5	29	8,572	-27.0		229	12.6	29	8,335	-32.7	43	297	37.1	31	8,425	-32.7		250	22.1
300	30	9,654	-34.9		226	12.2	31	9,652	-35.7		242	22.5	29	9,663	-35.6		224	17.3	29	9,402	-41.0		296	41.6	31	9,491	-41.1		251	22.7
250	30	10,900	-44.2		228	15.9	31	10,894	-44.8		241	24.9	29	10,906	-44.6		230	21.2	29	10,615	-49.5		290	50.3	31	10,707	-49.0		251	27.2
200	30	12,361	-55.0		225	17.1	30	12,355	-54.1		240	26.2	29	12,365	-54.9		232	23.3	28	12,056	-53.8		284	48.8	31	12,154	-53.2		252	27.4
175	30	13,202	-60.6		223	14.8	29	13,201	-58.9		239	21.0	28	13,206	-60.5		233	20.2	28	12,913	-53.9		284	42.5	30	13,014	-54.2		248	26.2
150	30	14,148	-65.8		211	13.8	29	14,157	-63.5		228	17.1	27	14,153	-65.5		220	17.7	28	13,899	-55.3		285	37.3	30	13,998	-55.9		246	21.6
125	30	15,245	-68.9		194	11.5	28	15,269	-66.2		217	11.8	23	15,250	-68.2		212	15.3	25	15,055	-56.4		288	30.9	29	15,158	-57.4		248	15.0
100	28	16,573	-68.0		165	8.9	28	16,620	-65.6		168	7.2	11	16,581	-66.9				23	16,474	-57.0		292	22.1	28	16,572	-58.3		251	6.6
80	27	17,921	-65.3		111	8.4	28	17,981	-63.6		148	6.2							20	17,887	-55.8		297	10.1	26	17,979	-56.8		251	.8
60	27	19,687	-61.1		92	16.3	28	19,765	-58.9		94	15.3							17	19,735	-53.2		8	6.0	20	19,818	-55.0		94	6.8
50	24	20,824	-58.2		86	21.8	27	20,918	-56.2		94	18.5							17	20,912	-52.0		56	8.0	19	20,985	-53.3		85	10.3
40	22	22,234	-55.4		87	27.8	27	22,342	-53.9		95	24.3							15	22,350	-50.3		77	11.3	16	22,423	-50.6		87	12.6
30	22	24,080	-52.2		95	30.1	20	24,199	-51.3		94	26.4							14	24,239	-48.0		93	15.7	7	24,302	-48.8			
20	18	26,717	-48.4		93	33.0	6	26,847	-48.3										12	26,928	-45.1									
15	14	28,617	-46.4																											

Standard pressure surface (mb.)	SHREVEPORT, LA. (1006 MB.)						SPOKANE, WASH. (931 MB.)						TACUBAYA, MEXICO (775 MB.)						TAMPA, FLA. (1019 MB.)						TATOOSH ISLAND, WASH. (1015 MB.)					
SURFACE	30	76	27.7	66	167	7.0	31	722	25.8	32	196	2.1	31	2,306	15.3	76			31	7	25.4	81	106	2.1	31	31	13.1	91	223	6.4
1,000	30	131	27.9	62	167	9.1	31	91					31	86					31	172	25.2	74	130	2.1	31	158	12.9	83	253	8.4
950	30	592	26.6	54	184	13.8	31	550					31	544					31	625	22.8	72	194	2.1	31	594	14.6	66	288	8.9
900	30	1,062	23.2	55	190	11.3	31	1,023	23.4	34	213	.6	31	1,018					31	1,093	20.1	69	184	4.3	31	1,046	13.6	56	281	5.2
850	30	1,557	19.4	56	205	8.5	31	1,518	18.9	39	264	3.5	31	1,515					31	1,584	17.0	68	185	6.0	31	1,527	12.1	47	280	2.9
800	30	2,076	15.7	56	222	5.1	31	2,034	14.3	45	261	3.9	31	2,044					31	2,099	13.9	63	182	5.2	31	2,032	9.7	42	284	3.7
750	30	2,619	12.1	53	244	2.1	31	2,583	9.6	50	263	5.4	31	2,595	13.5	75			31	2,651	10.7	57	183	3.7	31	2,570	7.0	36	267	6.0
700	30	3,195	8.2	52	329	1.9	31	3,143	5.5	50	263	8.4	31	3,166	9.4	78			31	3,214	7.4	51	185	4.1	31	3,129	4.1	32	258	8.2
650	29	3,804	4.2	49	330	5.1	31	3,751	1.8	44	270	11.1	31	3,785	5.3	82			31	3,829	3.7	52	201	3.1	31	3,731	.6	31	261	12.8
600	28	4,448	.2	47	332	4.9	31	4,384	- 2.5	39	264	12.2	31	4,429	1.2	82			31	4,467	- .1	52	228	3.7	30	4,368	- 3.3	32	260	15.9
550	28	5,136	- 3.9	42	350	4.9	31	5,070	- 7.4	36	261	14.0	31	5,122	- 2.8	80			31	5,163	- 4.3	51	211	2.7	30	5,049	- 7.7	32	256	18.8
500	28	5,886	- 8.3	37	332	4.7	31	5,803	-12.4	35	260	16.7	30	5,875	- 7.1	71			31	5,904	- 8.7	52	163	3.1	30	5,785	-12.7	31	252	20.8
450	28	6,700	-13.3	34	323	3.3	31	6,607	-18.5	33	261	18.1	30	6,698	-12.0	65			31	6,724	-13.9	48	132	3.9	30	6,582	-18.5	30	252	22.9
400	28	7,582	-19.2	36	285	4.5	31	7,465	-25.0	32	257	19.6	30	7,582	-17.5	61			31	7,597	-20.0	47	115	5.4	30	7,447	-24.6		249	24.7
350	27	8,559	-26.3		272	7.6	31	8,420	-32.4		253	20.0	30	8,567	-24.4	55			31	8,573	-27.2	47	86	7.6	30	8,404	-32.1		250	29.3
300	27	9,653	-34.8		254	8.5	31	9,488	-40.5		253	23.7	30	9,670	-33.0	48			29	9,666	-35.5	46	85	9.1	29	9,479	-40.2		249	34.2
250	27	10,898	-44.6		238	10.5	31	10,706	-49.0		256	27.8	30	10,926	-43.3				29	10,908	-45.5		84	12.2	29	10,699	-48.2		249	38.3
200	26	12,350	-55.8		251	10.9	31	12,153	-53.2		258	27.6	29	12,388	-55.7				29	12,356	-57.4		72	16.9	29	12,154	-51.7		246	40.4
175	25	13,189	-60.7		256	8.4	31	13,009	-54.8		259	28.6	24	13,232	-62.3				28	13,189	-63.1		65	17.5	29	13,018	-52.6		248	34.8
150	24	14,133	-65.8		268	5.4	31	13,991	-56.5		260	21.8	14	14,166	-68.7				27	14,124	-68.0		65	14.8	28	14,017	-54.3		247	27.2
125	24	15,227	-69.6		332	5.1	31	15,143	-58.0		264	13.8	8	15,239	-73.1				26	15,209	-70.0		75	11.8	28	15,181	-56.0		252	19.4
100	24	16,553	-69.5		59	5.2	30	16,553	-58.8		265	7.6							25	16,536	-69.5		89	11.8	28	16,596	-57.0		256	11.5
80	21	17,889	-65.9		76	11.7	30	17,958	-57.2		34	1.2							25	17,874	-66.5		94	15.9	26	18,017	-56.0		223	1.7
60	19	19,651	-61.0		84	18.5	30	19,789	-54.5		78	8.2							25	19,633	-62.0		91	21.4	25	19,857	-53.4		86	6.2
50	19	20,792	-58.0		84	24.9	29	20,962	-52.9		76	10.7							25	20,766	-59.4		87	26.8	25	21,034	-52.0		81	12.8
40	17	22,208	-55.4		83	33.4	25	22,412	-50.6		81	15.5							20	22,158	-56.6		87	35.7	25	22,484	-50.2		83	13.6
30	13	24,061	-52.2		87	39.2	24	24,301	-48.1		85	17.9							16	24,009	-51.4		93	39.4	19	24,370	-47.8		87	16.9
20							17	26,997	-43.7		85	21.8							10	26,649	-47.3				6	27,047	-45.6			

Standard pressure surface (mb.)	TOPEKA, KANS. (982 MB.)						TUCSON, ARIZ. (924 MB.)						WASHINGTON, D. C. (1006 MB.)						WINNEMUCCA, NEV. (867 MB.)						YAKUTAT, ALASKA (1019 MB.)					
SURFACE	31	270	25.9	70	148	3.1	31	781	31.1	33	269	3.9	31	88	22.5	81	180	2.7	31	1,310	27.5	22	303	3.7	31	12	14.1	78	239	3.1
1,000	31	109					31	62					31	138	22.9	79	181	3.9	31	23					31	171	12.9	77	229	2.1
950	31	567	26.2	56	168	7.0	31	527					31	587	21.7	72	226	9.1	31	491					31	602	10.7	75	129	2.9
900	31	1,039	23.4	55	194	9.9	31	1,017	29.7	33	283	5.6	31	1,054	18.6	72	256	7.6	31	971					31	1,051	8.8	72	140	2.7
850	31	1,536	20.0	56	227	9.3	31	1,523	26.0	35	302	7.2	31	1,543	15.4	72	267	10.7	31	1,486	26.4	21	297	4.5	31	1,522	6.6	70	156	3.3
800	31	2,056	16.4	55	254	11.1	31	2,054	21.5	42	308	7.4	31	2,055	12.2	71	271	11.3	31	2,017	22.0	23	293	6.0	31	2,018	4.0	67	151	4.1
750	31	2,605	12.6	56	277	12.4	30	2,609	16.7	50	299	6.0	31	2,600	9.1	67	271	13.2	31	2,575	17.0	28	278	5.8	31	2,544	1.0	66	135	3.7
700	31	3,178	8.6	56	292	14.8	30	3,192	11.6	60	295	2.9	31	3,162	6.0	64	269	13.4	31	3,154	11.7	34	255	4.9	31	3,092	- 2.3	63	146	2.9
650	31	3,792	4.5	52	295	15.5	30	3,807	6.5	66	46	1.6	30	3,771	2.3	58	274	15.3	31	3,769	6.1	43	236	5.4	31	3,676	- 5.8	57	134	3.9
600	31	4,434	4	45	300	17.9	30	4,459	1.8	70	92	2.5	30	4,407	- 1.0	54	273	19.0	31	4,418	.3	49	221	7.4	31	4,300	- 9.4	47	104	3.5
550	31	5,125	- 3.8	39	304	18.8	30	5,153	- 3.0	68	106	3.5	30	5,098	- 5.1	53	272	21.8	31	5,108	- 5.3	51	224	12.0	31	4,964	-13.6	40	115	4.3
500	31	5,872	- 8.6		306	19.4	30	5,905	- 7.6	65	131	2.7	30	5,839	- 9.6	50	276	23.7	31	5,850	-10.5	44	226	15.2	31	5,686	-18.4	37	95	4.7
450	30	6,690	-13.7		301	20.4	30	6,726	-12.5	57	128	3.5	30	6,656	-14.5	41	276	27.2	31	6,659	-16.2	36	233	16.1	31	6,465	-24.1		98	6.6
400	29	7,563	-19.9		295	24.9	29	7,608	-18.5	51	171	3.5	30	7,529	-20.2	40	273	29.5	30	7,529	-22.6		232	18.5	31	7,312	-30.5	36	93	5.1
350	28	8,541	-27.1		292	27.2	29	8,591	-25.3	39	199	5.4	29	8,503	-27.3	40	270	34.4	29	8,492	-30.2		228	23.3	31	8,246	-37.6		87	4.3
300	28	9,632	-35.5		289	29.7	29	9,690	-33.6	39	208	5.4	29	9,593	-35.9	42	269	36.1	28	9,573	-38.3		229	27.6	31	9,292	-44.5		101	5.2
250	27	10,873	-44.8		285	33.0	29	10,943	-43.3		221	7.0	29	10,833	-45.4		269	39.6	28	10,802	-47.4		231	33.8	30	10,502	-49.8		33	5.4
200	27	12,332	-54.2		289	32.8	29	12,407	-54.8		227	7.2	29	12,285	-56.0		271	42.7	26	12,243	-53.7		233	32.4	29	11,961	-49.8		356	4.1
175	26	13,173	-58.6		284	30.5	29	13,248	-60.5		217	5.4	29	13,122	-61.3		273	41.8	26	13,096	-56.8		231	29.5	29	12,837	-48.3		283	4.7
150	26	14,130	-62.6		292	28.6	28	14,192	-66.3		209	5.6	29	14,069	-64.6		274	37.5	25	14,061	-59.9		228	25.3	29	13,852	-47.9		267	6.8
125	25	15,242	-65.1		294	20.0	28	15,286	-69.7		178	2.3	26	15,173	-65.0		279	29.1	22	15,196	-63.4		232	14.4	29	15,055	-47.8		259	5.4
100	24	16,601	-64.2		312	11.5	24	16,615	-68.6		102	6.2	25	16,536	-64.0		265	14.8	16	16,580	-64.3		233	6.4	29	16,526	-47.7		257	4.7
80	22	17,979	-61.9		6	5.4	16	17,957	-65.7		93	10.1	24	17,908	-61.4		291	7.2	13	17,950	-61.3		128	2.9	28	18,002	-47.1		254	3.1
60	20	19,780	-57.3		70	10.9	11	19,724	-60.9		85	18.6	24	19,708	-57.4		73	5.6	11	19,750	-57.5				25	19,909	-46.7		65	2.
50	18	20,939	-55.0		82	15.7	9	20,871	-57.8				24	20,864	-55.3		77	10.7	8	20,906	-55.6				23	21,117	-46.3		98	8.
40	18	22,370	-52.6		86	21.4	8	22,291	-55.6				23	22,292	-53.5		86	16.3	7	22,323	-53.8				21	22,598	-45.8		94	11.8
30	15	24,252	-49.6		90	24.7	8	24,143	-51.6				16	24,146	-51.1		90	22.1	7	24,186	-50.9				12	24,505	-44.6			
20	5	26,928	-45.7				7	26,788	-48.2				7	26,811	-47.9				6	26,843	-45.9									
15							5	28,681	-46.2																					

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See not following Table 22 in the January 1950 issue of Climatological Data, Nationa Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	YUMA, ARIZ. (996 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	105	35.9	27	252	6.4
1,000--	29	65				
950----	29	530	32.8	29	226	9.7
900----	29	1,015	29.1	33	255	3.5
850----	29	1,519	25.1	34	241	4.3
800----	29	2,047	20.7	38	256	3.1
750----	29	2,601	16.3	41	258	2.1
700----	29	3,182	11.7	44	209	2.5
650----	29	3,798	6.9	47	177	3.5
600----	29	4,450	2.1	47	173	3.7
550----	29	5,144	- 2.9	52	176	3.7
500----	29	5,896	- 7.5	42	185	5.8
450----	29	6,714	-12.6		181	5.6
400----	29	7,598	-18.7		208	5.2
350----	29	8,578	-26.1		212	8.0
300----	28	9,674	-34.2		219	8.5
250----	27	10,926	-43.8		223	7.6
200----	20	12,389	-54.5		244	11.5
175----	13	13,214	-60.1		238	19.4
150----	12	14,160	-65.2		246	13.2
125----	9	15,256	-69.2			
100----	6	16,586	-68 9			

RAWINSONDE DATA

Average monthly values

Table 20 *Air Force Data for March 1956

Standard pressure surface (mb.)	DENVER, COLO. (831 MB.)						OGDEN, UTAH (855 MB.)						RANTOUL, ILL. (988 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,661	2.7	41	233	1.0	31	1,450	4.8	36	79	2.7	31	227	3.5	60	283	1.4
1,000--	31	127					31	146					31	127				
950----	31	558					31	578					31	547	3.5	59	254	6.2
900----	31	1,007					31	1,026					31	982	.9	63	260	10.7
850----	31	1,473					31	1,494			54	2.1	31	1,440	- 1.1	62	264	15.9
800----	31	1,967	3.8	37	262	3.3	31	1,987	2.1	37	273	4.9	31	1,921	- 3.3	59	274	20.6
750----	31	2,495	.2	38	299	7.0	31	2,506	- 2.1	42	275	9.9	31	2,434	- 5.4	57	278	25.1
700----	31	3,037	- 3.7	40	288	13.8	31	3,047	- 6.3	48	280	14.8	31	2,969	- 8.1	56	278	28.4
650----	31	3,622	- 8.0	42	295	20.6	31	3,625	-10.6	51	284	19.6	31	3,547	-11.2	51	280	31.9
600----	31	4,234	-12.4	43	293	23.1	31	4,233	-14.9	52	289	22.9	31	4,151	-14.6	51	280	35.7
550----	31	4,895	-17.3	43	295	27.6	31	4,886	-19.4	48	291	29.5	31	4,809	-18.9	49	279	41.8
500----	31	5,598	-22.9	43	295	34.4	31	5,586	-24.0	46	290	37.3	31	5,507	-23.8	47	276	46.6
450----	31	6,363	-28.7	42	290	37.7	31	6,356	-29.1	40	294	37.1	31	6,275	-29.2	46	274	49.0
400----	31	7,194	-34.9		289	45.1	31	7,178	-34.8		296	37.9	31	7,100	-35.0		274	53.8
350----	31	8,111	-41.9		287	49.3	31	8,097	-41.3		302	43.3	31	8,017	-41.7		276	61.0
300----	31	9,138	-48.9		282	57.1	31	9,126	-48.3		299	49.9	31	9,047	-48.1		275	68.2
250----	31	10,318	-55.3		281	67.4	31	10,306	-55.3		295	54.4	31	10,231	-54.0		277	76.7
200----	31	11,726	-58.6		279	58.1	31	11,716	-57.6		291	53.8	31	11,656	-55.3		278	70.7
175----	31	12,567	-57.4		279	62.2	30	12,560	-57.0		291	47.8	31	12,509	-54.3		278	62.9
150----	31	13,541	-57.5		280	55.2	28	13,538	-56.1		287	46.2	31	13,496	-54.7		278	60.6
125----	31	14,690	-58.4		278	52.8	22	14,710	-57.3		284	38.3	31	14,655	-56.9		281	50.5
100----	31	16,089	-59.1		277	44.9	14	16,119	-58.3		289	28.0	31	16,063	-57.5		278	41.2
80-----	30	17,491	-59.9		276	30.1	12	17,533	-57.9		288	17.1	30	17,463	-58.7		276	35.4
60-----	26	19,295	-58.9		292	17.5	10	19,376	-55.4		264	.4	27	19,278	-57.4		279	21.8
50-----	25	20,442	-57.9		296	12.0	10	20,544	-54.2		58	3.7	23	20,435	-56.5		281	15.5
40-----	19	21,894	-55.8		34	7.8	10	21,976	-53.4		83	10.9	20	21,875	-55.3		275	9.5
30-----	16	23,733	-55.2		24	10.5	9	23,823	-52.2				16	23,727	-54.1		301	4.3
20-----	13	26,330	-54.3		57	13.0	6	26,453	-51.2				14	26,329	-51.6		293	4.9
15-----	7	28,205	-51.7										6	28,195	-51.3			

* April data for the above Air Force stations will be included in the August issue of this publication.

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	ALBUQUERQUE, N. MEX.								
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
July									
1	----	----	----	----	Cloudy	----	----	----	----
2	----	----	----	----	Cloudy	----	----	----	----
3	----	----	----	1.12	1.35	1.14	1.00	----	----
4	0.73	0.82	0.95	1.13	1.38	1.21	1.03	0.94	0.86
5	.70	.77	.89	1.02	1.34	1.17	1.01	.89	.80
6	----	----	----	----	Cloudy	----	----	----	----
7	.69	.78	.88	1.07	1.30	1.16	1.00	.85	.79
8	.70	.77	.91	1.07	1.30	1.14	.97	----	----
9	----	----	----	----	1.26	----	----	----	----
10	----	----	----	.99	1.24	----	----	----	----
11	----	----	----	----	Cloudy	----	----	----	----
12	----	----	----	----	Cloudy	----	----	----	----
13	.71	.81	.90	1.06	1.30	----	----	----	----
14	----	----	----	----	1.28	----	----	----	----
15	----	----	----	----	1.29	----	----	----	----
16	----	----	----	----	Cloudy	----	----	----	----
17	----	----	----	----	Cloudy	----	----	----	----
18	.73	.83	.96	----	----	----	----	----	----
19	----	----	----	----	Cloudy	----	----	----	----
20	.72	.82	.96	1.12	1.23	----	----	----	----
21	.69	.79	.90	1.05	1.26	----	----	----	----
22	----	----	----	----	Cloudy	----	----	----	----
23	----	----	----	----	Cloudy	----	----	----	----
24	----	----	----	1.10	----	----	----	----	----
25	.70	.77	.89	1.05	1.26	----	----	----	----
26	----	.86	----	----	----	----	----	----	----
27	.81	.87	----	----	----	----	----	----	----
28	----	----	----	----	Cloudy	----	----	----	----
29	----	----	----	----	Cloudy	----	----	----	----
30	----	.71	.85	1.02	----	----	----	----	----
31	----	----	----	----	Cloudy	----	----	----	----
Averages	.72	.80	.91	1.07	1.29	1.16	1.00	.89	.82

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	BLUE HILL, MASS.								
	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
July									
11	----	----	----	----	----	H0.89	H0.64	H0.46	H0.37
12	----	----	0.79	0.95	----	----	----	----	----
15	----	0.74	.84	----	----	.96	----	----	----
17	----	----	.99	1.13	----	----	----	----	----
18	----	----	1.04	1.17	----	----	.90	.77	.67
19	----	.79	.94	1.10	----	----	----	----	----
25	----	----	----	.99	----	----	----	----	----
26	0.53	.59	.73	.98	----	----	.82	----	----
29	----	----	----	1.09	----	----	----	----	----
30	----	----	----	1.08	----	----	----	----	----
31	.76	.85	.97	1.11	----	----	----	----	----
Averages	(.65)	.74	.90	1.07	----	(.93)	(.79)	(.62)	(.52)

H Haze

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

JULY 1956

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	2	3	4	5	6	7	8		9	10	11	12	13	14	15		16	17	18	19	20	21	22	
Langleys	197	177	197	67	71	144	181	148	--	---	192	158	168	137	183	(170)	80	198	180	180	164	108	119	147
Date	23	24	25	26	27	28	29		30	31	1	2	3	4	5									
Langleys	132	155	154	172	141	174	162	156	174	170	---	142	159	---	166	(163)								

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	2	3	4	5	6	7	8		9	10	11	12	13	14	15		16	17	18	19	20	21	22	
Langleys	310	332	404	67	62	147	339	238	125	299	380	379	329	132	409	293	80	434	425	412	171	86	105	245
Date	23	24	25	26	27	28	29		30	31	1	2	3	4	5									
Langleys	109	238	383	392	179	335	401	291	412	412	283	382	395	347	384	374								

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	2	3	4	5	6	7	8		9	10	11	12	13	14	15		16	17	18	19	20	21	22	
Langleys	---	220	---	50	50	187	249	(161)	121	---	212	172	213	---	236	(188)	---	221	232	236	198	---	100	(182)
Date	23	24	25	26	27	28	29		30	31	1	2	3	4	5									
Langleys	118	217	252	246	153	243	183	202	205	204	225	261	242	---	---	(227)								

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	2	3	4	5	6	7	8		9	10	11	12	13	14	15		16	17	18	19	20	21	22	
Langleys	402	379	213	65	65	319	322	252	169	303	457	159	227	248	397	280	85	409	409	413	279	114	140	264
Date	23	24	25	26	27	28	29		30	31	1	2	3	[illegible]	5									
Langleys	242	187	356	397	224	381	240	290	319	329	358	411	346	317	354	348								

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	2	3	4	5	6	7	8		9	10	11	12	13	14	15		16	17	18	19	20	21	22	
Langleys	268	191	---	103	104	239	288	(211)	234	261	231	211	---	---	---	(242)	---	142	96	125	274	148	154	(156)
Date	23	24	25	26	27	28	29		30	31	1	2	3	4	5									
Langleys	159	196	240	68	117	227	175	169	---	---	---	---	---	---	---	---								

Note: Langley is the unit used to denote one gram calorie per square centimeter.

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month

JULY 1956

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	437	405	*345	384	449	*394	*144	384	*225	*235	435	403	*243	**	419	*248	**	429	*129	*283	*268	427	*422	418	*153	**	*190	**	*375	377	283	329

* Estimated values owing to occurrence of rain during period. While rain is falling, radiation is assumed to be zero.

** Radiometer inoperative

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of Bermuda grass. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh. The instrument with which they were measured had not been checked by the Weather Bureau.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1956	Aklavik. MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.	Dodge City, Kans.	E. Lansing, Mich.	E. Wareham, Mass.	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Ft. Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grandby, Colo.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.	Lander, Wyo.	Las Vegas, Nev.
Jul. 2------	(678)	664	556	745	329	726	355	214	589	493	563	598	362	411	774	574	723	722	393	582	758	642	631	694	789	---	---	601	---	158	668	534	797	557	889	492	674	509	822
Jul. 3------	674	879	178	418	530	320	186	266	591	737	648	585	689	453	712	402	719	717	658	592	764	748	548	531	718	---	---	786	---	568	635	621	774	365	872	749	685	747	808
Jul. 4------	505	892	533	225	410	449	289	772	483	716	491	370	553	474	152	650	736	681	245	497	778	836	609	605	(722)	615	---	805	---	534	426	624	809	358	868	284	562	665	812
Jul. 5------	(257)	814	166	576	375	715	618	557	121	695	121	514	758	654	265	565	733	(673)	117	150	701	828	735	573	727	706	---	793	---	702	586	583	794	256	861	58	699	723	806
Jul. 6------	591	787	74	438	556	235	423	359	112	735	91	442	740	532	704	714	725	487	725	157	731	813	707	410	728	---	---	681	---	469	412	494	806	415	862	104	656	756	800
Jul. 7------	652	810	409	593	806	532	114	406	455	748	514	530	206	617	711	550	708	751	501	393	743	812	656	678	698	---	---	760	---	802	463	313	390	692	862	462	694	817	799
Jul. 8------	345	812	663	547	788	599	503	587	587	745	536	528	337	623	580	714	719	614	407	546	778	823	81	697	697	---	---	704	---	790	544	339	639	516	864	666	698	816	806
Average-------	(529)	808	368	506	542	511	355	452	420	695	423	509	528	538	557	596	723	(664)	435	417	750	786	567	598	(726)	---	---	733	---	582	533	501	716	451	868	402	667	719	808
Jul. 9------	602	783	590	314	483	495	576	733	---	683	303	598	83	434	559	628	727	768	329	232	767	736	---	635	701	---	---	643	789	778	479	416	691	542	844	635	---	816	612
Jul. 10------	606	753	592	523	420	651	703	796	---	700	553	611	447	379	698	742	705	750	682	363	769	722	581	607	699	---	---	455	531	615	655	674	282	722	841	223	---	534	780
Jul. 11------	551	673	360	544	335	299	647	598	631	680	542	---	615	487	640	690	699	507	652	681	764	671	591	464	725	---	---	423	446	665	678	---	464	648	861	625	597	585	772
Jul. 12------	430	709	643	614	539	213	365	633	483	549	501	505	675	460	370	586	711	614	333	628	740	812	613	671	711	---	---	311	616	761	640	720	819	198	870	220	657	579	789
Jul. 13------	228	783	590	514	362	472	647	778	508	575	452	521	758	688	366	563	693	664	556	554	749	837	600	705	693	---	---	503	736	456	305	640	735	298	878	103	709	640	800
Jul. 14------	558	743	266	606	625	282	690	709	323	638	355	552	106	622	592	670	700	699	764	404	657	828	605	714	702	596	---	465	416	---	424	511	709	719	875	397	654	676	773
Jul. 15------	394	760	279	330	600	270	344	453	655	728	630	553	567	629	654	392	686	670	344	681	(762)	814	564	717	706	711	---	665	776	738	607	575	771	319	869	458	682	759	789
Average-------	481	743	474	492	481	383	567	671	520	650	477	557	464	528	554	610	703	668	523	506	(744)	774	592	645	705	---	---	481	616	669	529	589	639	492	863	380	660	656	759
Jul. 16------	164	601	572	225	623	372	247	697	189	717	175	609	620	641	497	680	697	660	425	---	683	806	573	684	706	536	534	715	---	654	402	674	684	273	869	394	685	638	776
Jul. 17------	458	747	100	615	745	422	305	633	656	728	597	591	396	420	520	732	679	538	558	539	698	669	445	622	684	678	681	666	773	648	602	602	(443)	492	481	761	684	770	307
Jul. 18------	296	764	308	410	761	599	138	468	655	712	654	567	635	496	708	---	436	594	718	680	662	656	259	581	604	346	545	528	781	735	563	715	(715)	598	561	759	645	778	554
Jul. 19------	67	686	667	627	744	617	106	434	673	710	552	597	745	226	435	---	641	520	316	596	755	707	273	514	663	541	691	633	782	741	192	712	(634)	452	734	627	656	792	512
Jul. 20------	403	720	224	697	537	658	452	700	438	417	409	---	688	496	467	---	669	673	389	391	453	569	309	582	599	666	760	646	759	728	453	612	608	525	656	154	617	795	654
Jul. 21------	408	718	78	720	584	683	695	589	199	576	206	589	688	569	589	---	676	690	534	136	667	382	555	686	679	581	502	480	703	723	608	539	623	629	698	220	359	366	615
Jul. 22------	639	609	428	629	675	611	684	714	203	680	136	565	264	517	759	---	668	314	479	219	740	670	---	704	689	568	695	622	506	757	666	688	773	674	652	537	379	575	646
Average-------	348	692	340	560	667	566	375	605	430	648	390	586	577	481	568	---	638	570	488	427	665	637	402	625	661	559	630	613	717	712	498	649	(640)	521	665	493	575	673	581
Jul. 23------	635	418	248	692	663	474	524	678	272	678	300	---	216	583	595	---	663	733	591	300	518	520	550	632	673	586	697	609	758	752	642	564	798	256	647	497	322	758	493
Jul. 24------	615	736	628	484	579	531	227	704	459	652	405	552	293	615	643	---	662	677	597	381	552	311	457	530	(667)	535	703	728	---	739	567	588	749	524	665	581	581	726	619
Jul. 25------	599	619	501	723	566	479	208	515	677	667	617	602	443	602	488	---	657	728	417	622	479	601	615	641	615	580	710	581	671	733	492	430	502	505	453	303	551	446	705
Jul. 26------	592	646	537	663	694	234	207	692	665	513	653	493	575	530	501	---	662	731	401	606	548	474	618	(695)	636	637	697	430	601	651	681	745	629	617	697	491	297	662	707
Jul. 27------	575	669	765	552	697	308	193	366	383	597	468	485	613	457	728	661	686	662	653	395	694	575	412	700	674	656	100	565	---	479	395	648	590	663	680	536	373	576	569
Jul. 28------	266	621	500	590	747	399	159	98	586	490	571	594	422	481	638	600	695	669	621	398	539	413	217	677	683	662	519	501	---	646	621	691	740	565	665	615	642	722	481
Jul. 29------	350	774	613	704	659	226	263	635	528	640	536	607	531	571	747	427	694	564	728	623	614	588	496	479	704	681	375	388	---	602	635	---	559	375	799	623	576	479	613
Average-------	519	641	542	630	658	379	254	527	510	605	507	556	442	549	620	---	674	681	573	475	564	498	481	(622)	(665)	620	543	543	---	658	576	611	653	501	658	521	477	624	598
Jul. 30------	183	676	247	410	615	370	175	302	581	---	545	617	604	512	710	653	661	654	660	---	561	486	404	642	677	439	546	380	---	661	628	545	389	675	823	712	538	438	712
Jul. 31------	507	541	198	543	519	301	175	643	517	---	539	584	606	365	329	656	664	499	74	---	656	643	131	656	701	496	515	284	---	458	416	408	732	460	814	452	388	563	744
Aug. 1------	181	466	109	680	595	461	369	604	---	---	448	589	305	396	320	568	678	544	516	491	516	643	306	577	642	---	677	---	---	561	510	719	684	367	781	411	278	535	727
Aug. 2------	194	492	447	658	123	276	163	154	690	---	660	602	672	632	730	607	669	687	677	660	532	773	458	637	695	---	642	---	---	535	568	552	442	528	843	728	634	356	784
Aug. 3------	478	756	338	(616)	655	171	578	336	657	---	591	521	517	481	578	643	659	574	335	564	704	755	465	700	669	---	583	---	---	739	229	669	665	420	824	709	653	738	750
Aug. 4------	442	759	143	332	711	411	253	678	---	---	505	626	542	398	304	656	667	(714)	437	476	742	771	247	710	673	---	711	---	---	726	470	548	733	593	839	664	580	599	767
Aug. 5------	364	755	293	---	542	214	114	655	616	---	479	528	545	607	347	593	649	707	153	---	730	776	146	697	677	---	551	---	---	710	547	686	513	617	836	230	104	745	775
Average-------	335	635	254	(540)	537	315	261	482	612	---	538	581	541	484	474	625	663	(626)	407	548	634	692	308	660	676	---	604	---	---	627	481	590	594	523	823	558	454	568	751

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued

1956	Lemont, Ill.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash	Seattle, Wash. (U. of W.)	Spokane, Wash.	State College, Pa.	Stillwater, Okla.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
Jul. 2------	373	652	576	314	625	---	686	536	703	490	596	581	454	583	592	---	572	310	602	748	---	681	745	602	390	441	588	---	---	541	512	580	596	---	607	685	593	790
Jul. 3------	314	629	523	496	607	---	549	277	744	647	607	552	506	732	725	---	567	588	655	672	---	723	764	561	588	605	(373)	---	---	526	744	276	613	---	562	702	648	138
Jul. 4------	140	645	612	611	135	---	715	478	---	680	444	137	417	505	697	791	694	763	615	611	---	734	850	153	453	453	585	525	---	84	---	194	469	---	215	688	467	150
Jul. 5------	187	465	640	635	581	---	---	448	---	414	85	59	636	705	477	781	384	599	741	415	---	716	817	71	54	151	404	416	---	110	720	247	46	---	83	346	324	634
Jul. 6------	617	615	668	721	660	---	715	368	---	702	147	50	366	727	234	788	72	(627)	746	745	---	741	427	92	63	145	567	462	593	388	699	700	115	---	115	305	228	703
Jul. 7------	493	701	717	732	445	254	717	---	---	608	676	540	463	719	630	757	391	(619)	744	181	---	744	585	548	491	524	759	739	725	752	590	483	585	---	548	573	628	322
Jul. 8------	643	452	742	771	599	---	706	564	---	498	408	564	189	580	250	757	525	(720)	766	291	---	615	56	452	393	499	745	731	789	666	675	711	457	764	486	676	457	(694)
Average-------	395	594	640	611	522	---	681	445	---	577	424	355	433	650	515	775	458	(604)	696	523	---	708	606	354	347	403	(575)	575	---	438	657	456	412	---	374	568	478	(490)
Jul. 9------	297	538	716	732	309	---	685	556	---	561	326	315	362	689	485	758	194	(764)	731	694	---	696	453	267	387	304	410	429	760	610	---	449	450	727	316	709	345	615
Jul. 10------	742	634	713	711	672	---	686	452	690	650	414	568	724	401	405	614	518	734	735	732	---	706	740	455	445	509	287	319	687	304	---	511	284	659	---	693	411	705
Jul. 11------	627	576	620	690	653	---	486	449	743	732	682	725	746	504	617	730	654	(667)	756	643	---	717	---	741	565	685	477	508	601	664	671	188	533	620	718	589	677	657
Jul. 12------	454	582	571	632	536	553	624	674	738	428	670	547	620	628	647	737	478	613	699	506	---	318	551	656	323	670	640	663	603	384	635	714	241	640	614	164	712	507
Jul. 13------	695	627	734	705	(698)	682	507	673	723	296	562	318	312	708	318	659	497	670	716	601	---	641	240	408	149	357	595	608	496	151	707	717	90	507	434	415	415	748
Jul. 14------	705	551	703	713	689	675	667	562	684	473	458	476	443	690	(455)	729	382	708	726	624	---	656	762	527	488	589	420	259	658	421	664	571	671	639	525	371	667	(382)
Jul. 15------	512	615	736	787	523	649	711	624	723	543	706	668	418	505	(573)	734	583	545	710	551	---	696	562	710	438	614	527	506	720	566	---	559	502	575	660	611	---	---
Average-------	576	589	685	710	(583)	640	624	570	717	526	545	517	518	589	(500)	709	472	(672)	725	622	---	633	551	538	399	533	479	470	646	443	669	530	396	624	544	508	538	(602)
Jul. 16------	488	336	752	750	643	636	695	639	717	454	241	158	223	377	(749)	669	420	472	748	688	---	655	582	171	261	---	681	638	724	272	---	722	492	735	202	695	494	580
Jul. 17------	456	267	688	702	500	156	(690)	528	665	624	585	587	598	435	623	692	453	615	613	379	---	732	777	688	508	---	725	704	738	255	312	655	664	519	667	705	399	444
Jul 18------	462	329	590	596	381	206	679	406	716	700	737	748	624	604	768	658	757	754	669	504	729	607	763	757	658	---	725	710	728	678	693	657	660	708	725	574	435	272
Jul. 19------	339	468	631	691	237	260	365	328	699	597	659	393	697	407	728	506	710	(711)	661	372	728	704	644	629	557	453	695	674	725	295	---	625	627	710	514	521	597	596
Jul. 20------	433	596	664	704	256	565	683	656	601	593	394	210	443	475	513	412	711	(731)	682	297	718	630	183	322	229	223	528	573	362	100	557	625	205	627	328	337	76	589
Jul. 21------	548	550	673	658	403	208	704	570	688	668	115	75	706	734	89	632	318	693	683	515	603	685	151	61	93	---	611	534	692	312	705	586	415	624	65	569	500	682
Jul. 22------	635	574	673	626	476	478	696	631	692	674	428	487	660	459	223	672	148	807	628	642	721	(735)	444	653	340	---	705	679	754	526	---	538	462	682	579	692	516	683
Average-------	480	446	667	675	414	359	(645)	537	683	616	451	380	564	499	(528)	606	502	(683)	669	485	700	(678)	506	469	378	---	667	644	674	348	567	630	504	658	440	585	431	549
Jul. 23------	704	464	614	645	691	432	669	485	445	599	356	635	653	371	371	598	184	819	590	604	706	702	402	608	336	---	700	688	753	452	352	532	471	742	576	695	472	526
Jul. 24------	542	335	584	656	471	460	642	646	182	438	---	252	478	720	567	640	639	802	619	(700)	709	---	396	214	417	193	705	665	728	386	725	444	577	715	241	691	204	665
Jul. 25------	430	574	661	595	644	565	653	554	686	598	687	602	640	729	517	511	621	542	219	454	722	690	817	674	352	526	(595)	623	749	486	723	680	550	673	687	707	574	73
Jul. 26------	480	556	639	635	459	656	330	653	676	624	671	608	514	724	726	717	699	602	614	711	545	603	685	673	461	615	542	590	727	424	703	681	596	541	681	656	---	361
Jul. 27------	581	363	614	651	607	496	655	677	695	502	453	328	723	720	558	708	599	448	660	557	598	574	629	512	417	---	509	580	749	632	720	644	537	638	522	463	607	(729)
Jul. 28------	487	322	671	636	441	142	670	553	701	653	491	424	660	708	677	725	705	734	691	474	640	627	793	444	531	---	705	680	705	387	708	---	625	---	498	550	506	(302)
Jul. 29------	745	463	688	695	553	304	680	664	654	545	650	744	525	370	398	685	693	551	706	730	608	692	780	690	488	373	532	535	716	738	601	583	499	365	716	436	261	551
Average-------	567	440	639	645	552	436	614	605	577	565	473	513	599	620	545	655	591	643	586	(604)	647	648	643	545	429	427	(613)	623	733	501	647	594	551	613	560	600	437	(458)
Jul. 30------	647	540	634	650	409	116	654	670	590	624	655	625	700	678	461	278	566	610	729	121	543	661	692	758	463	---	356	398	742	565	671	573	587	---	745	659	622	---
Jul. 31------	300	505	577	602	233	---	672	690	551	617	704	594	568	701	612	445	611	493	704	634	708	681	746	648	490	625	380	343	720	531	756	658	264	148	681	606	600	685
Aug. 1------	266	491	566	559	591	482	587	639	578	324	473	514	547	653	602	693	527	251	570	446	652	729	761	656	420	536	472	300	192	394	535	---	552	435	532	619	530	---
Aug. 2------	322	551	457	418	526	553	673	552	415	301	721	625	483	691	649	746	669	532	600	54	616	774	743	629	562	405	---	119	508	694	691	---	661	671	616	661	184	671
Aug. 3------	366	518	634	495	295	524	516	695	415	538	685	716	610	692	652	758	680	596	728	312	701	631	578	710	522	685	649	605	380	703	690	---	619	678	723	630	556	108
Aug. 4------	648	581	684	743	611	334	636	573	715	500	559	696	624	704	653	734	577	570	735	353	679	773	110	688	543	497	660	627	633	304	697	---	396	650	632	675	233	484
Aug. 5------	514	539	712	682	386	352	541	681	719	605	665	93	621	695	479	723	584	660	752	608	710	765	93	314	505	91	(660)	650	615	122	---	---	497	652	415	415	241	---
Average-------	438	532	609	593	436	394	611	643	569	501	637	552	593	688	587	625	602	530	688	361	658	716	532	629	501	473	(529)	435	541	473	673	---	511	539	621	609	424	487

Note.--**Langley** is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

NOTE.--Beginning with June issue, 200- and 100-mb. charts will be included with the upper air mean charts at the end of each issue. These charts, XVI and XVII, are similar in all respects to Charts XII-XV except that there are no pibal winds at 200 and 100 mb. These are being prepared in answer to the ever increasing interest for information regarding meteorological conditions at higher and higher levels of the atmosphere. Although this need has been apparent for quite some time, the preparation of charts for these surfaces has not heretofore been possible due to the lack of sufficient data on a regular basis. It is believed that data are now being regularly received in sufficient quantity to prepare realistic presentations of climatological conditions at these surfaces.

It should be noted that with this issue there is a change in the manner of plotting the resultant winds on Charts XII-XVII. The winds shown in red are from rawin reports and are for the same level as the contours and isotherms. The winds in black are from pibal reports at 2100 GMT and are for the nearest height level. In addition, wind speeds are indicated in knots: a flag equals 50 knots, a full barb 1 knots, and a half barb 5 knots.

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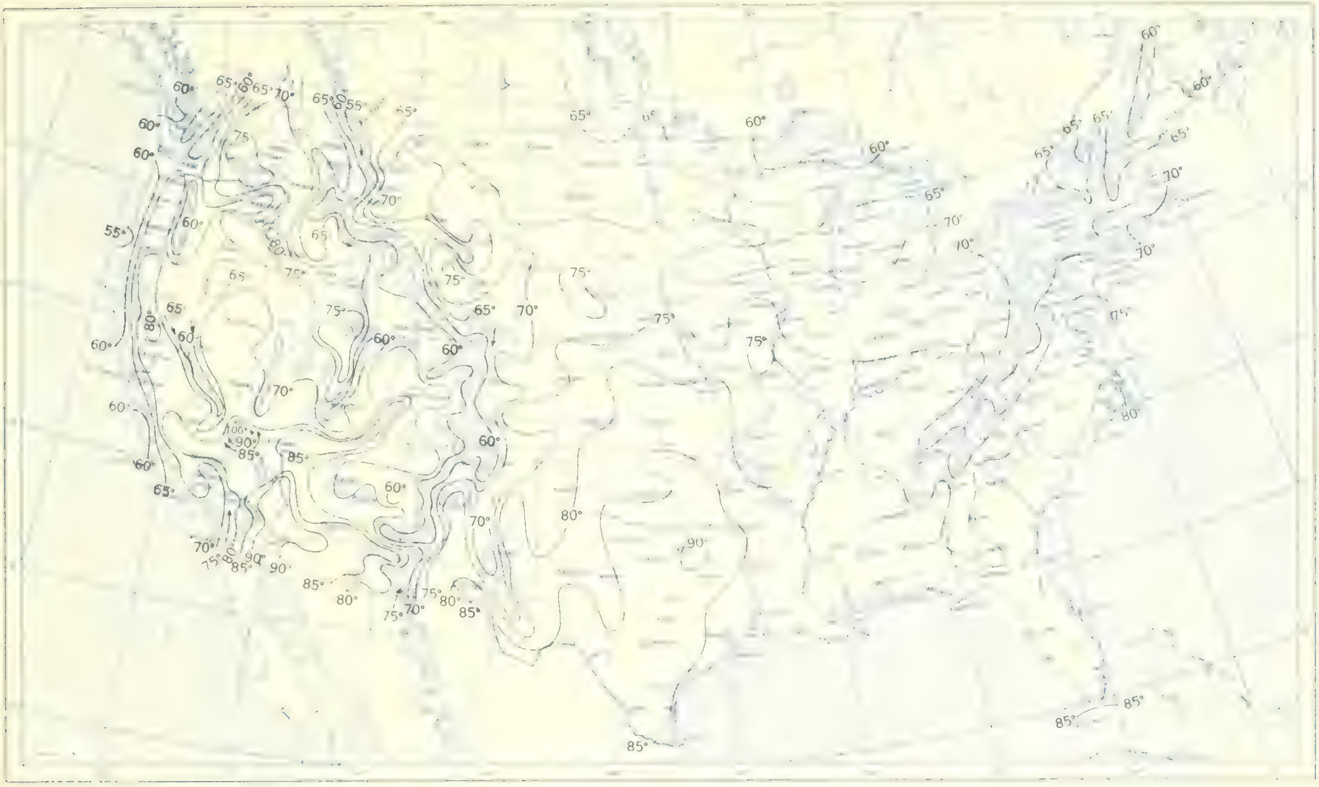
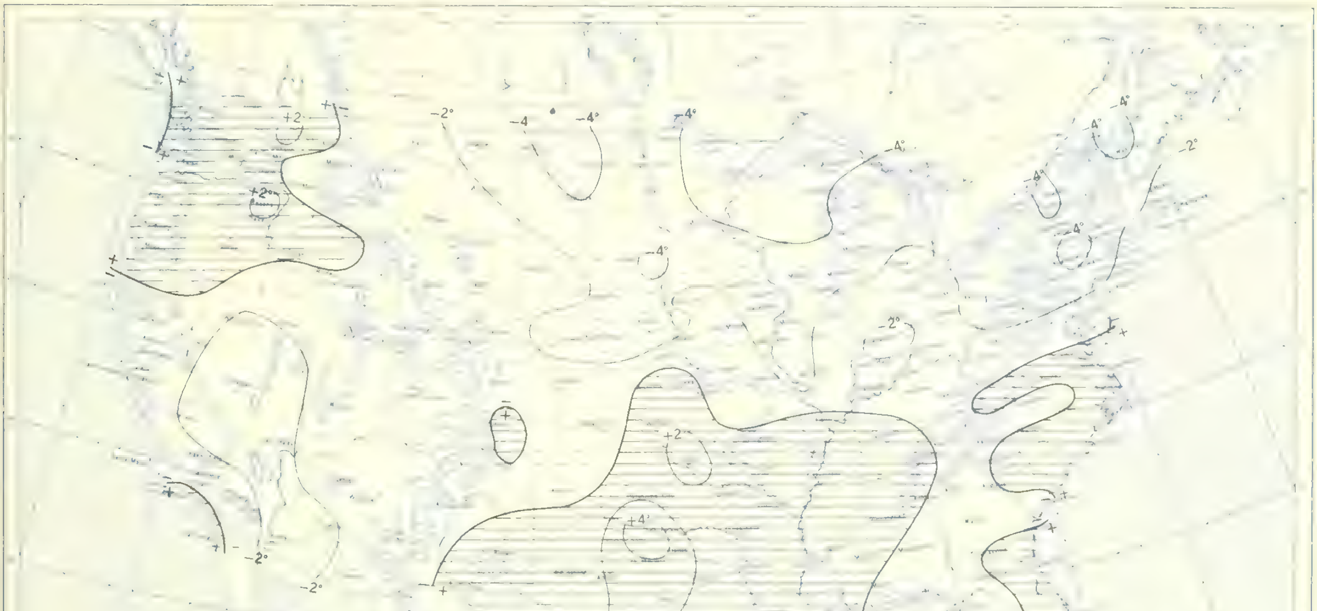
Chart I. A. Average Temperature (°F.) at Surface, July 1956.

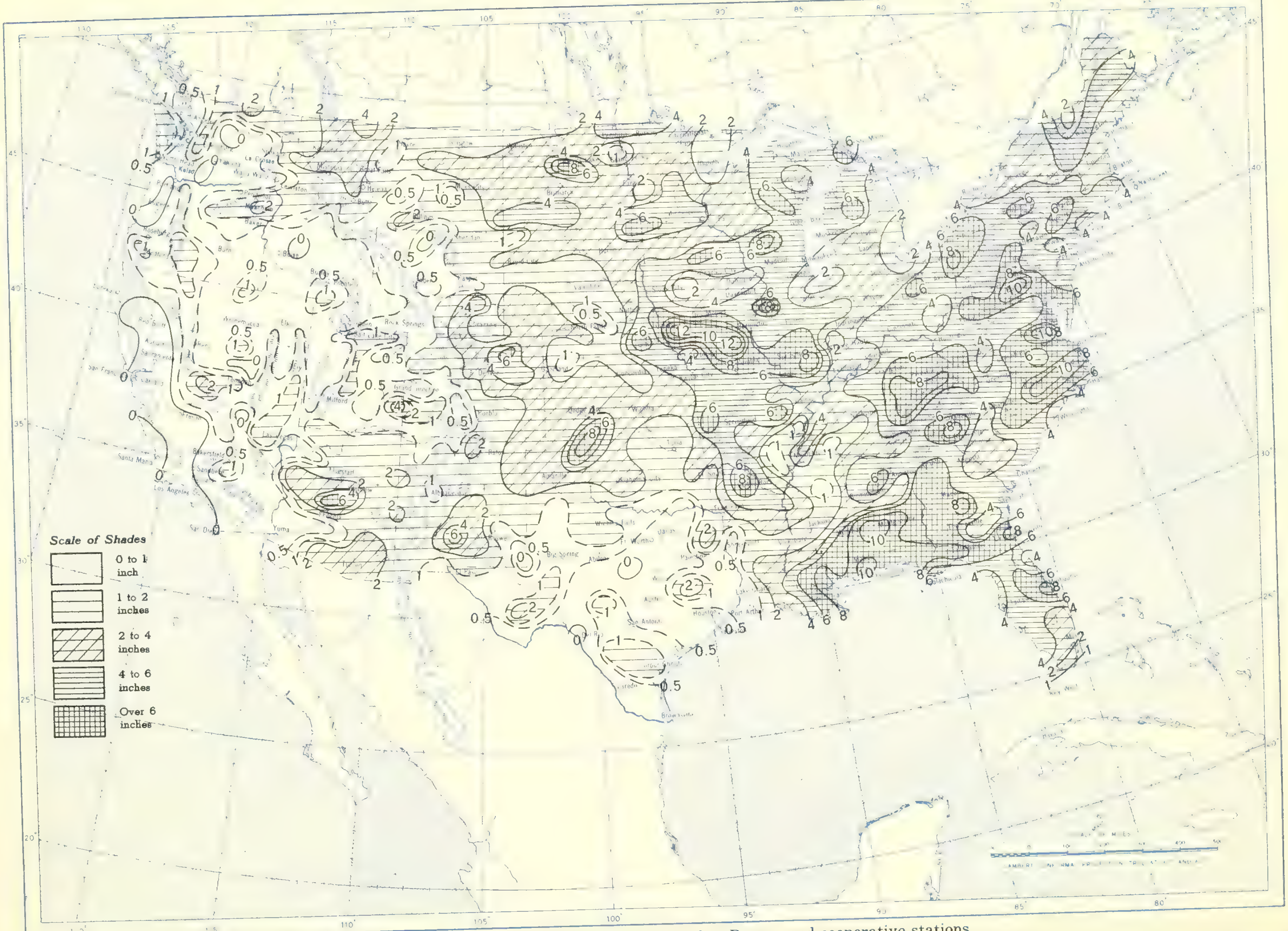


B. Departure of Average Temperature from Normal (°F.), July 1956.



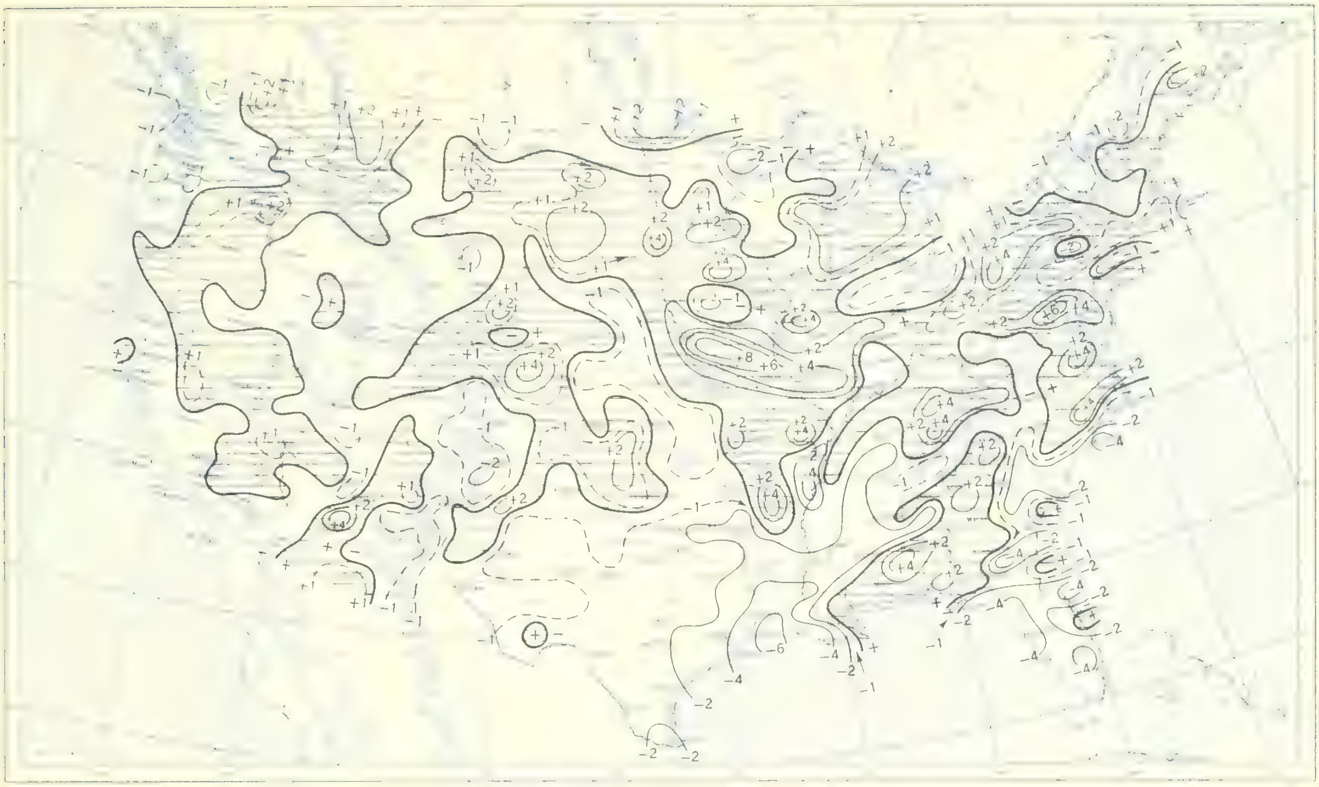
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), July 1956.

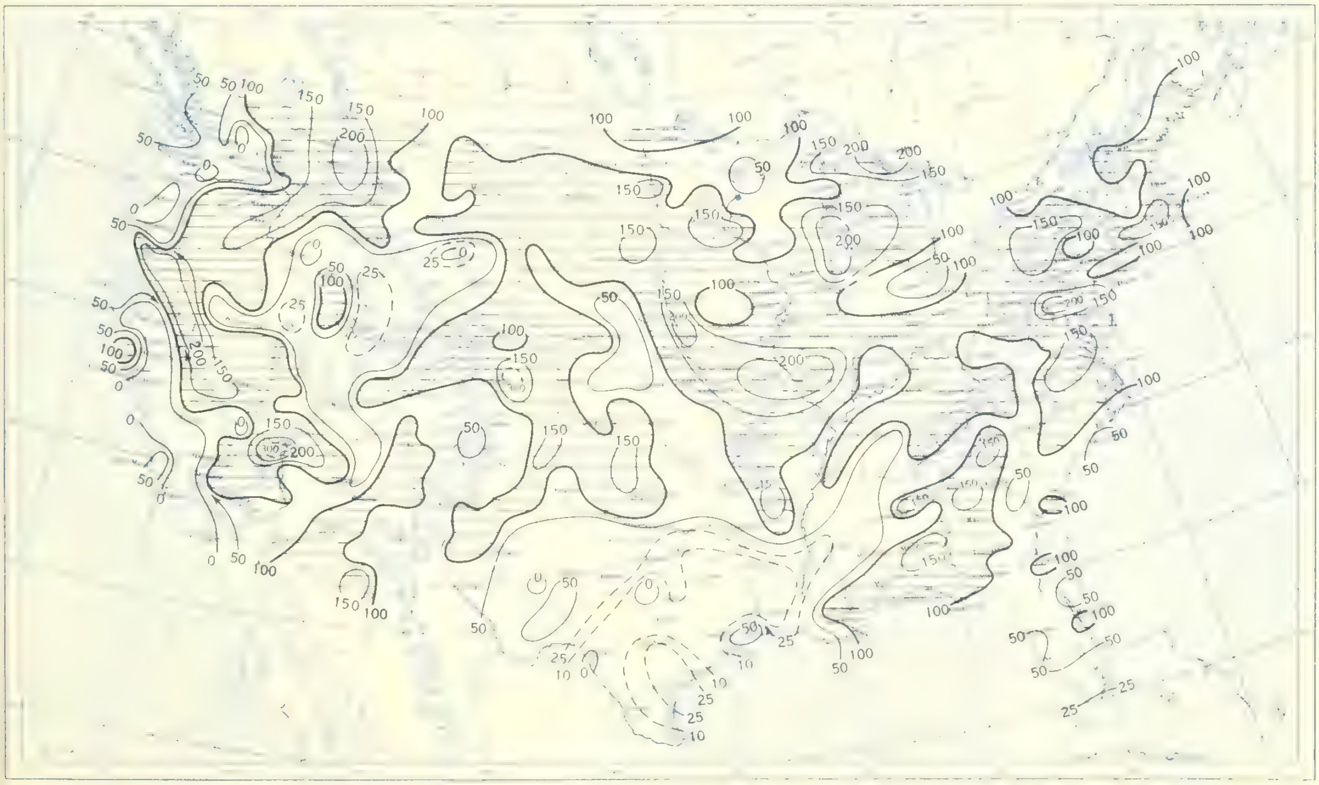


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), July 1956.

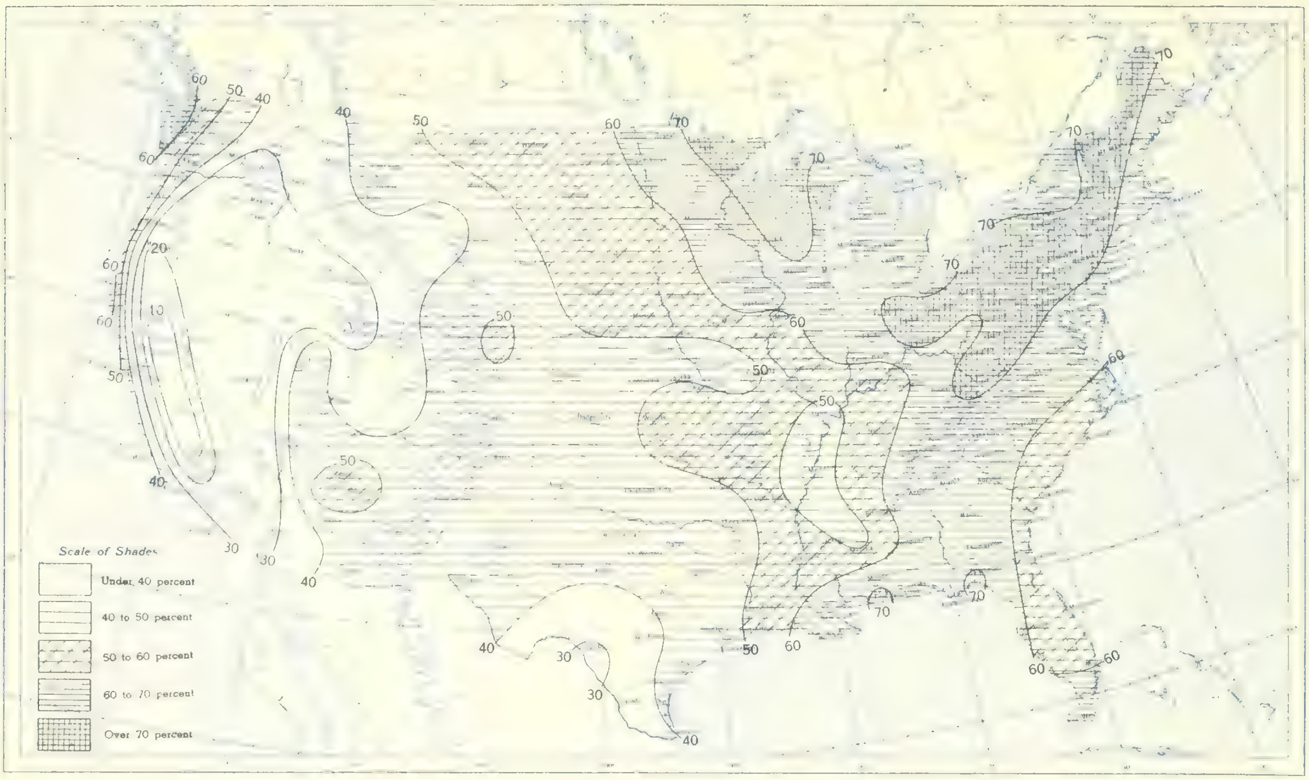


B. Percentage of Normal Precipitation, July 1956.

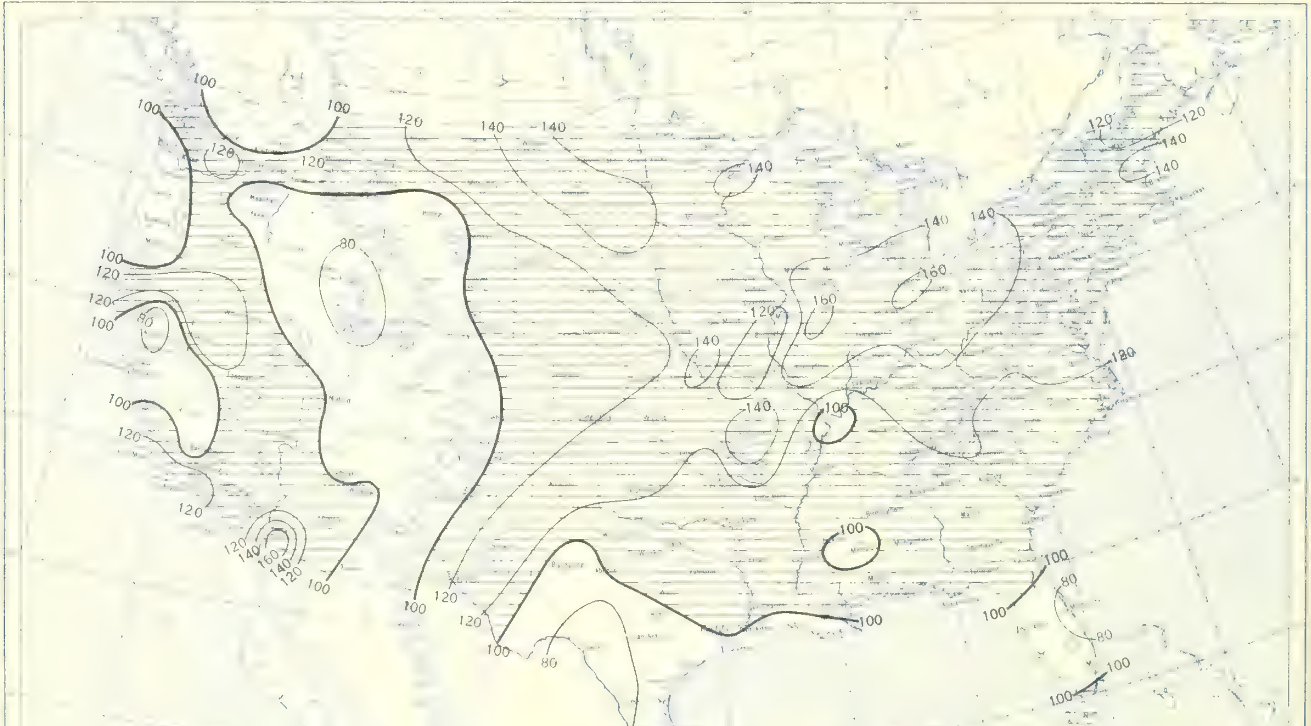


Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, July 1956.

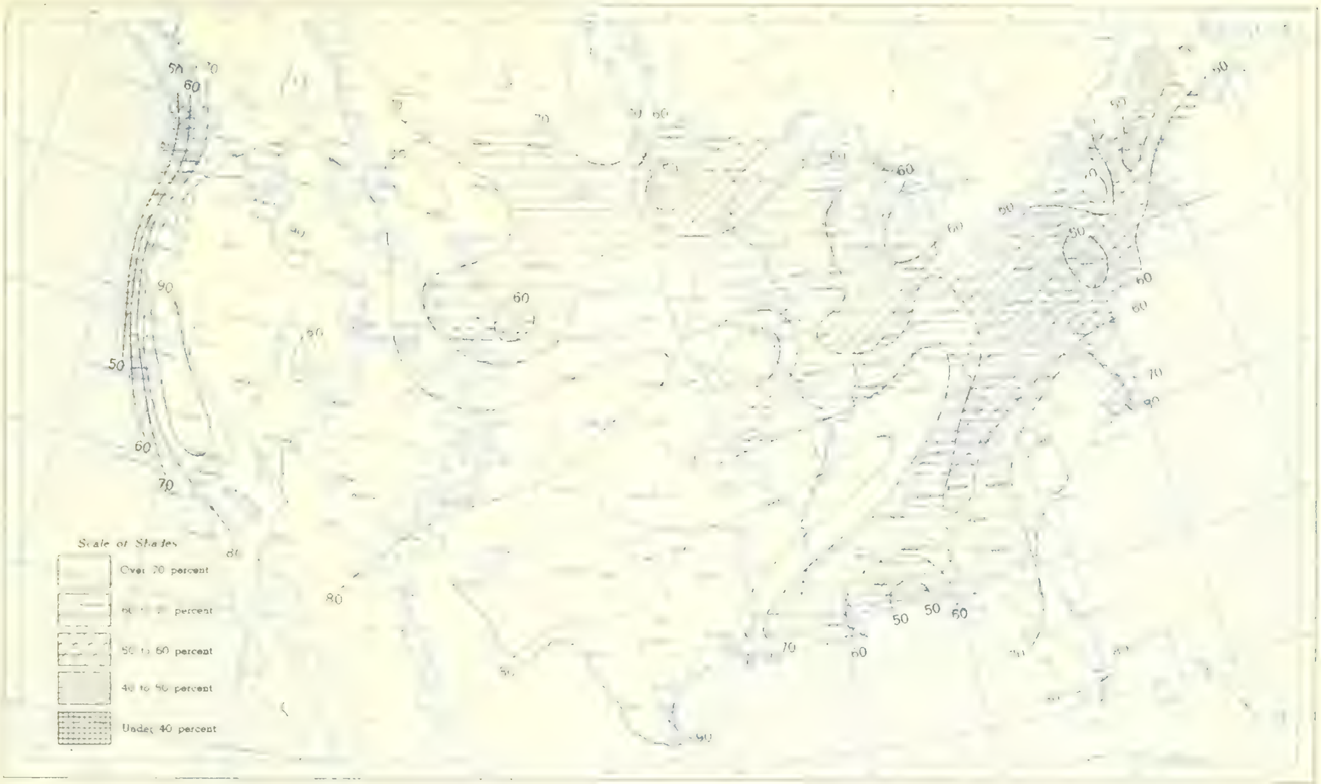


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, July 1956.

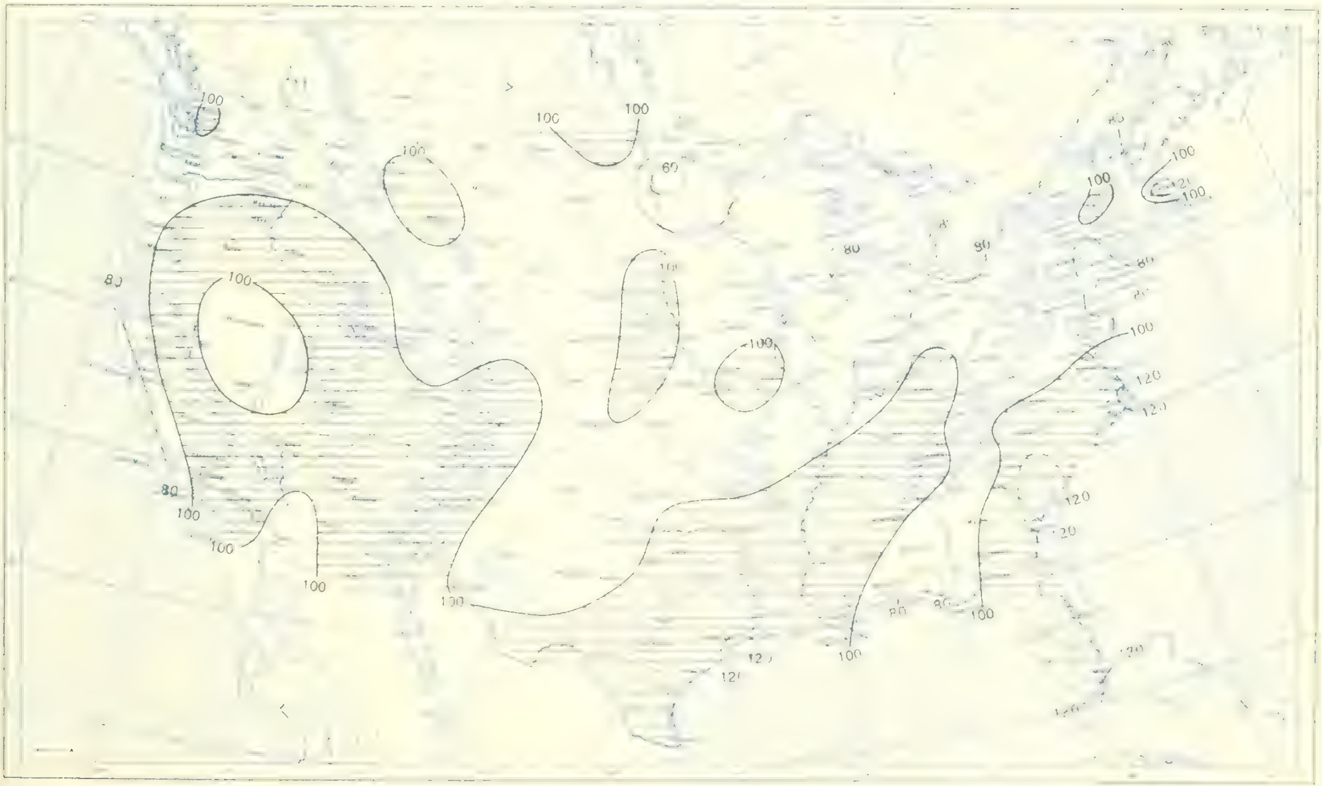


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, July 1956.



B. Percentage of Normal Sunshine, July 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, July 1956. Inset: Percentage of Mean Daily Solar Radiation, July 1956. (Mean based on period 1951-55.)

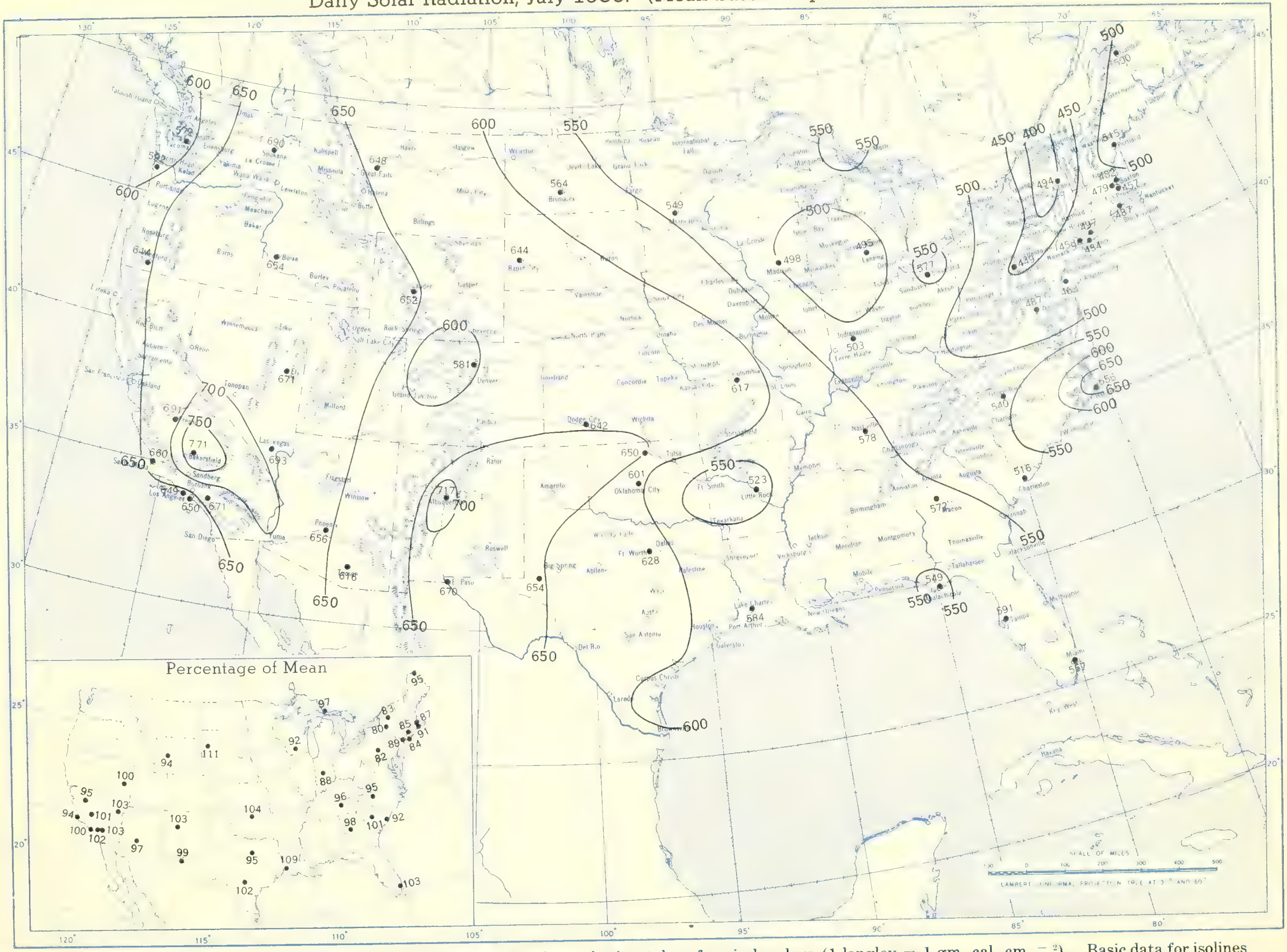
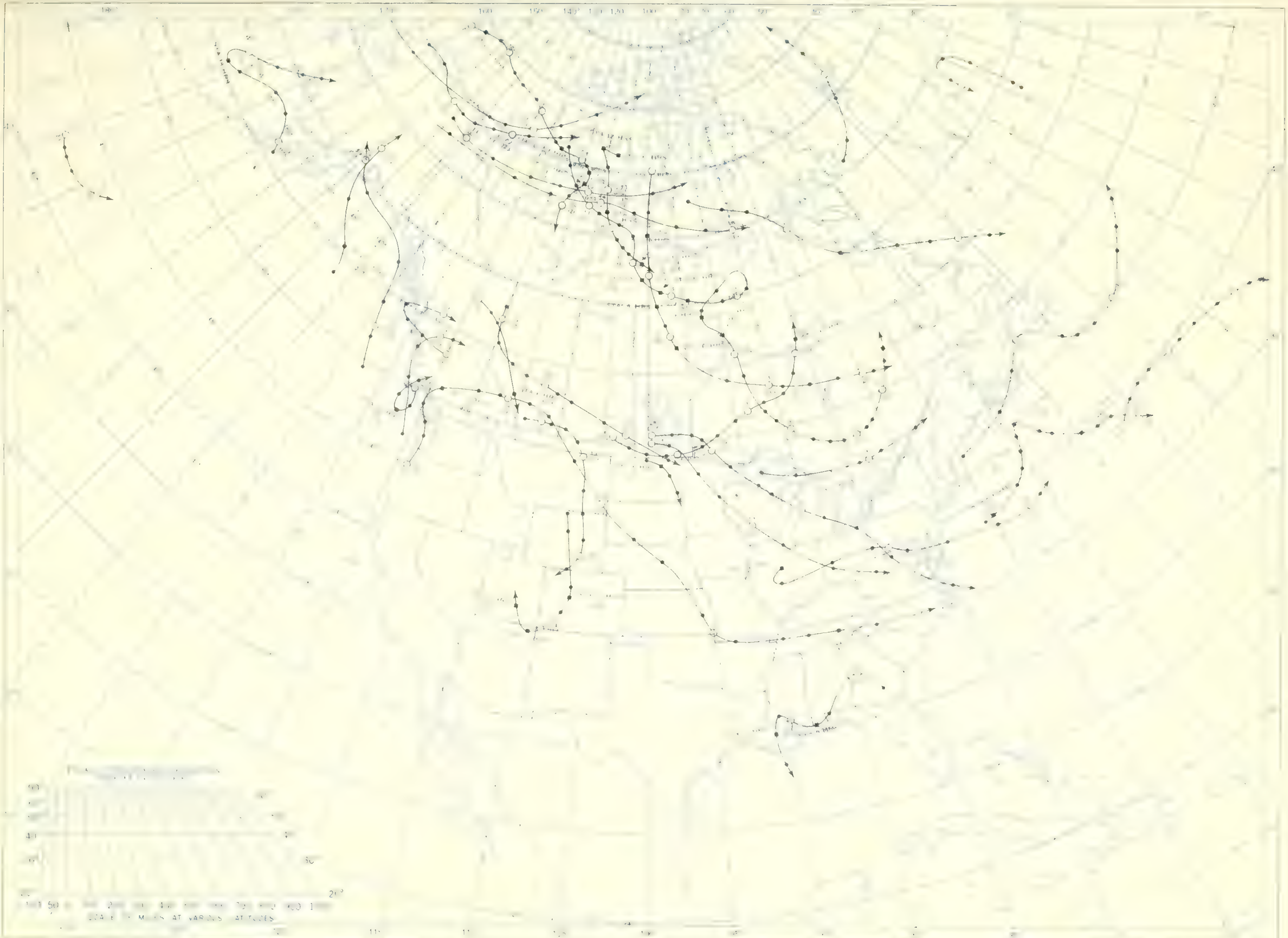


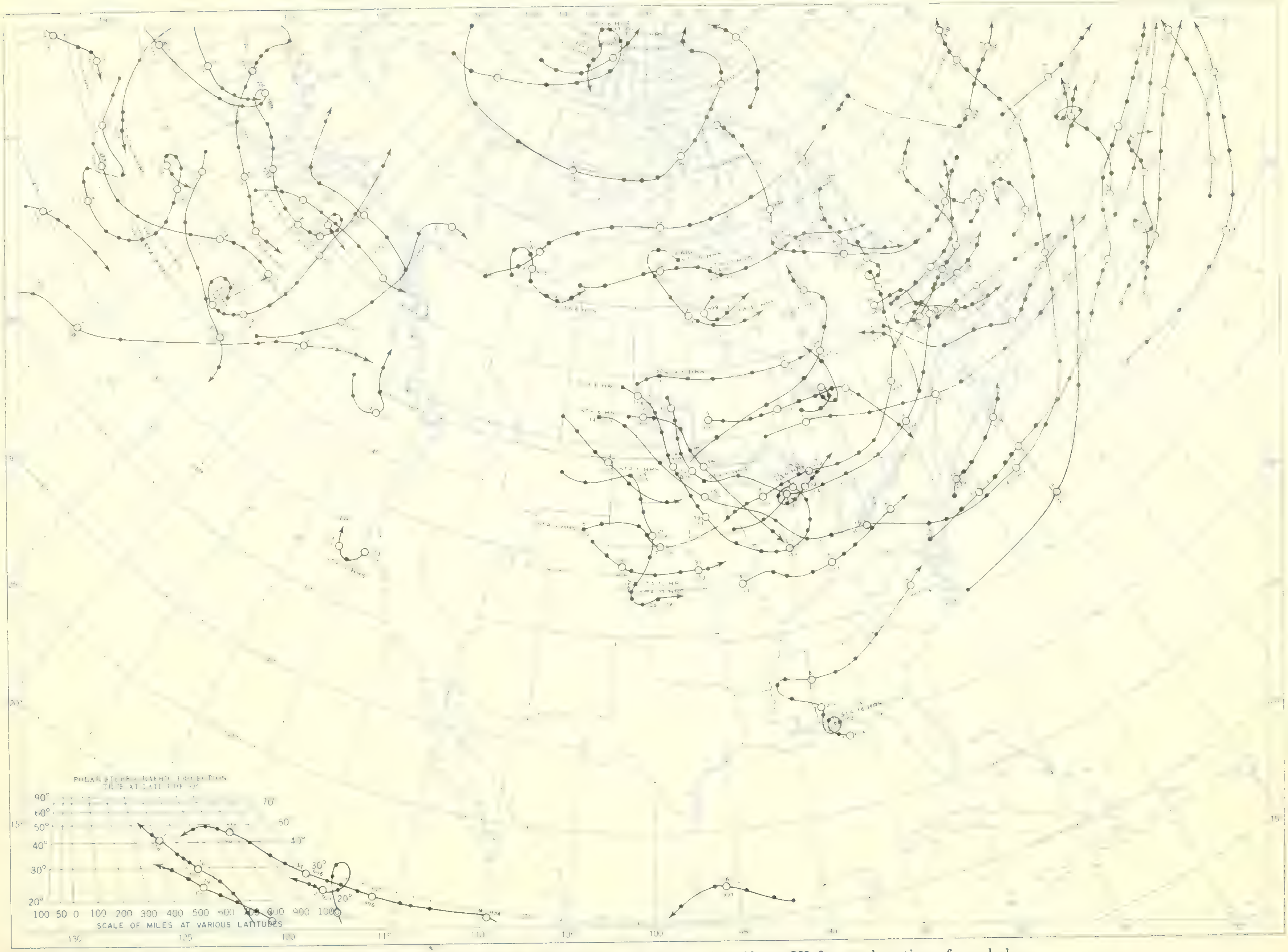
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$). Basic data for isolines

Chart IX. Tracks of Centers of Anticyclones at Sea Level, July 1956.



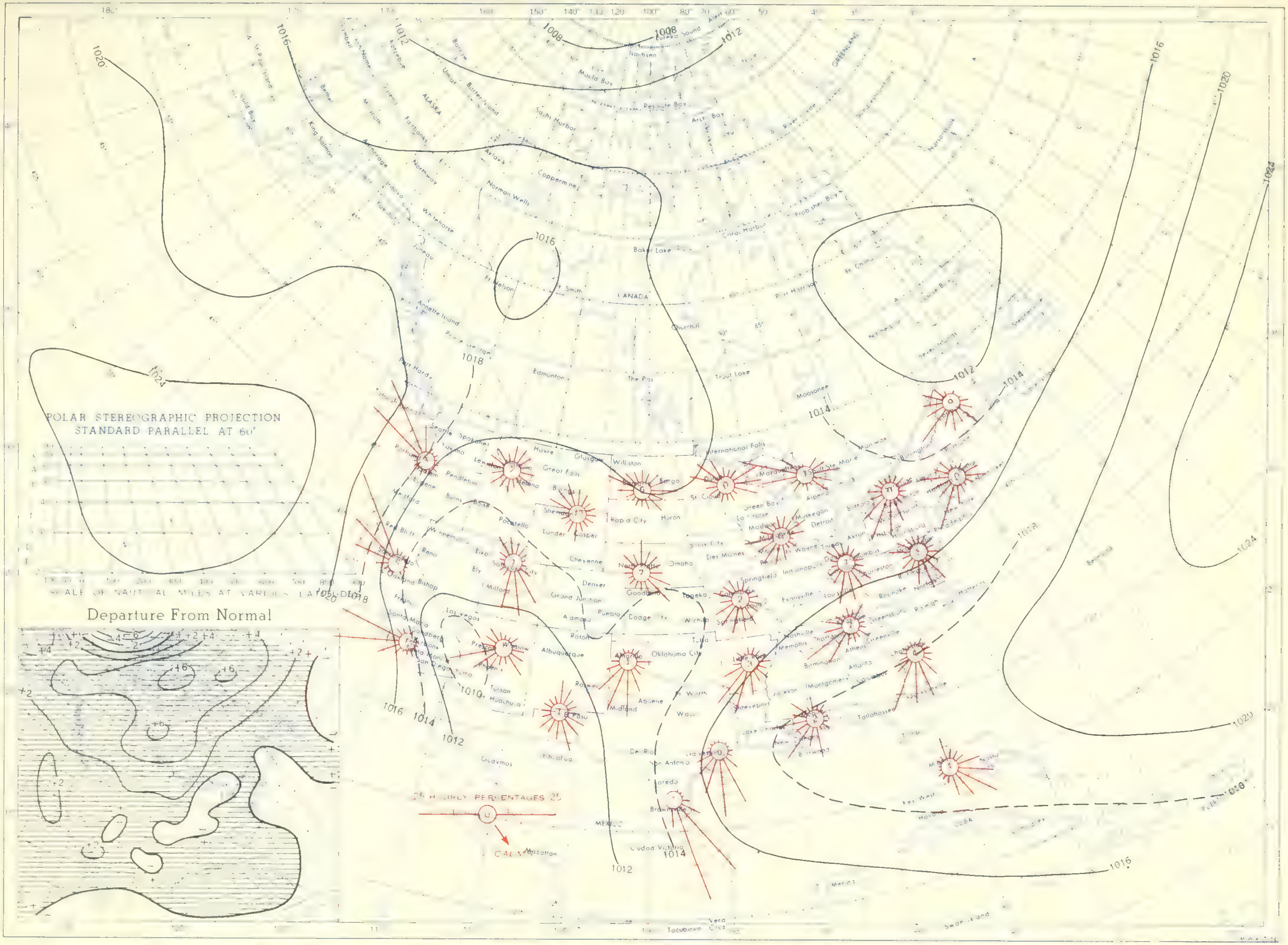
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, July 1956.



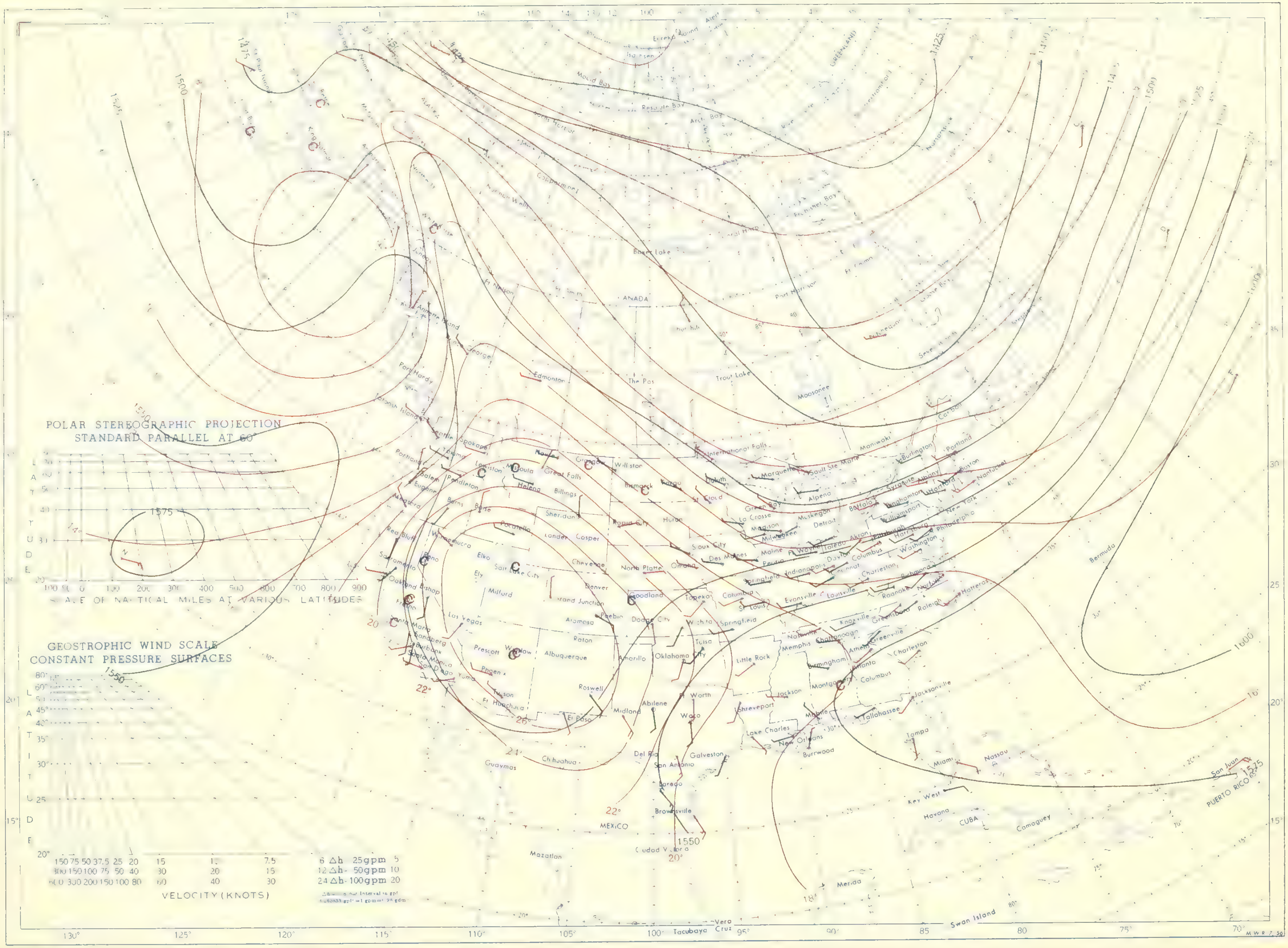
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Average Pressure (mb.) from Normal, July 1956.



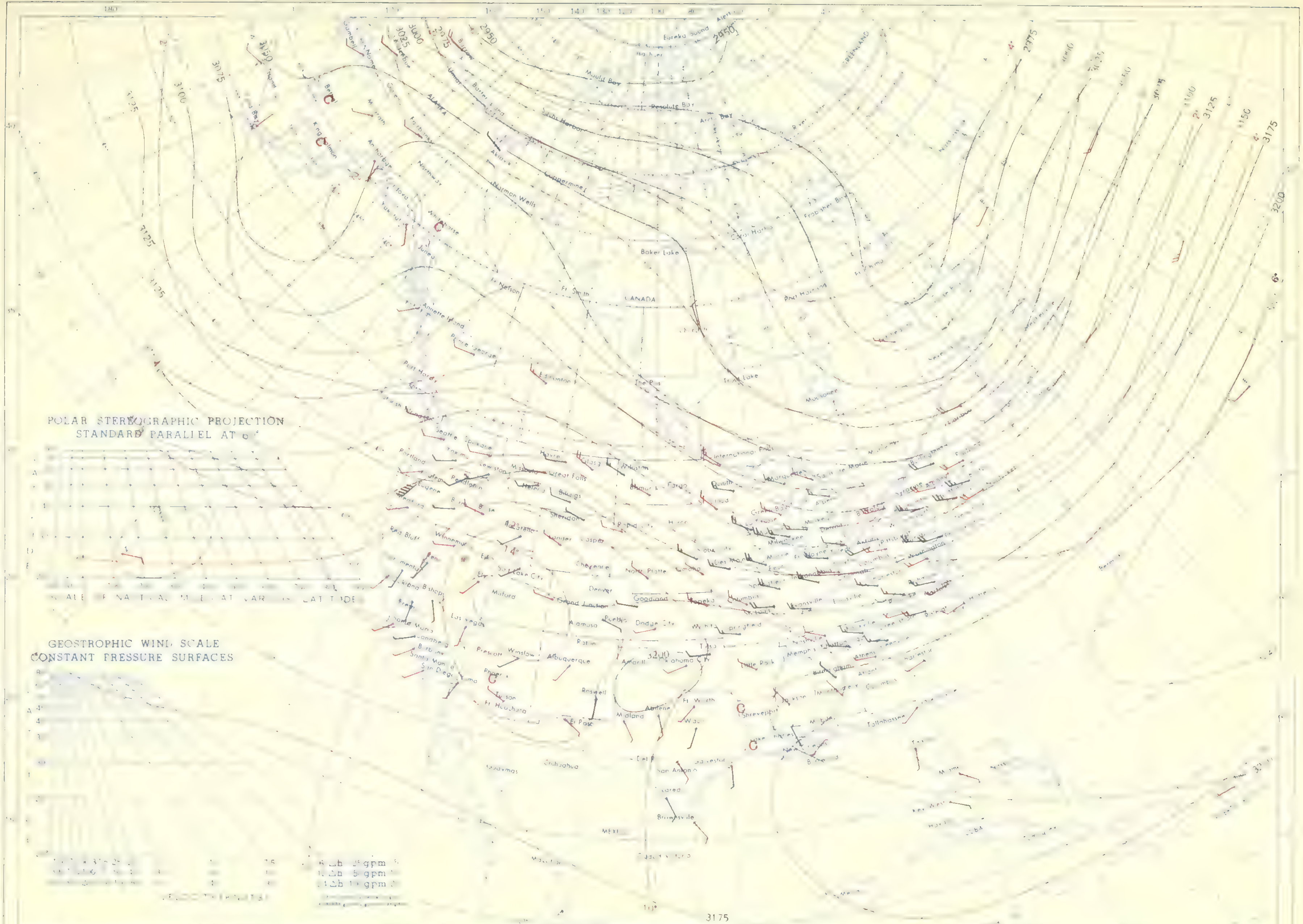
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 0300 GMT, July 1956. Average Height and Temperature, and Resultant Winds.



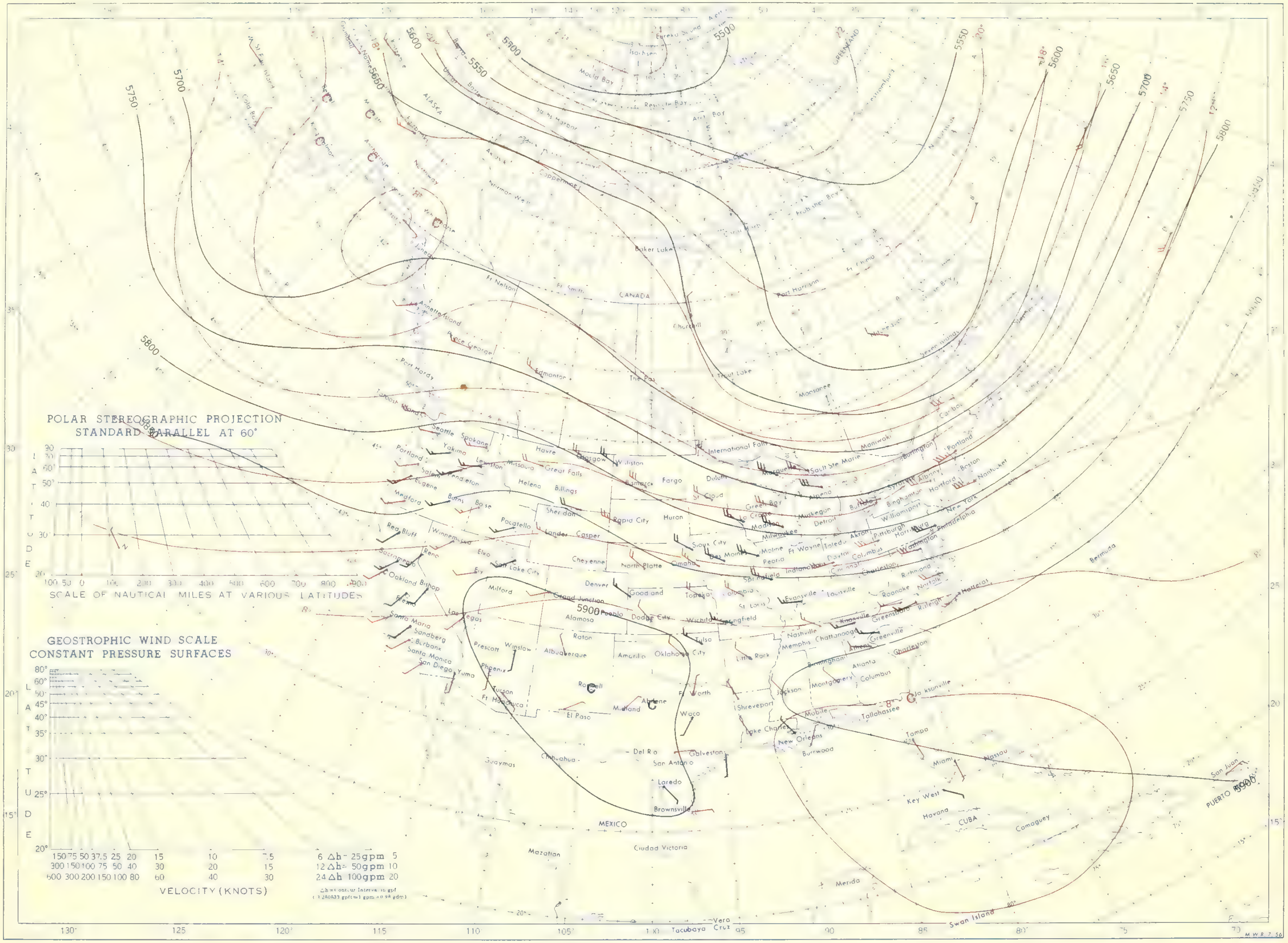
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and

Chart XIII. 700-mb. Surface, 0300 GMT, July 1956. Average Height and Temperature, and Resultant Winds.



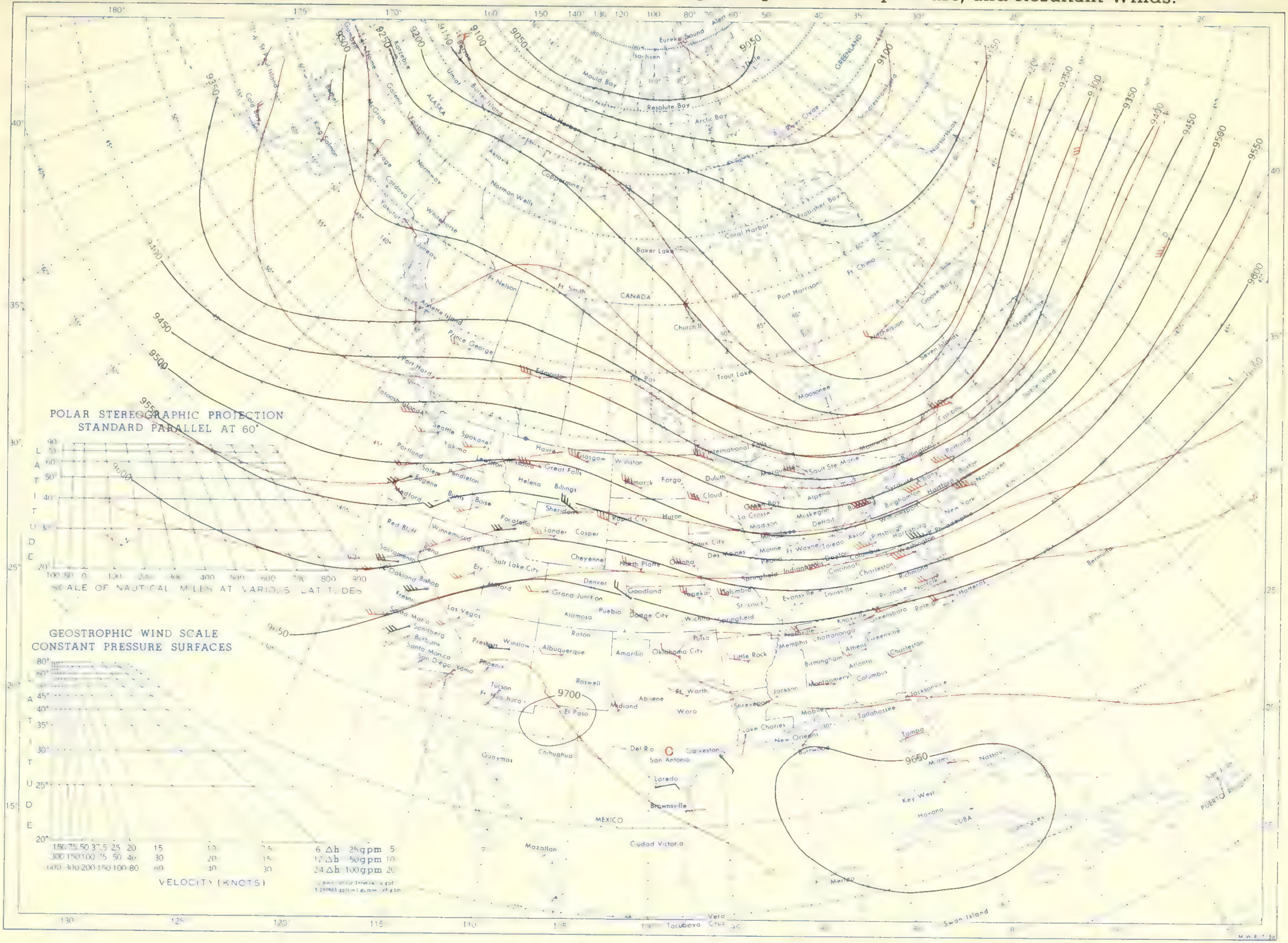
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 0300 GMT, July 1956. Average Height and Temperature, and Resultant Winds.



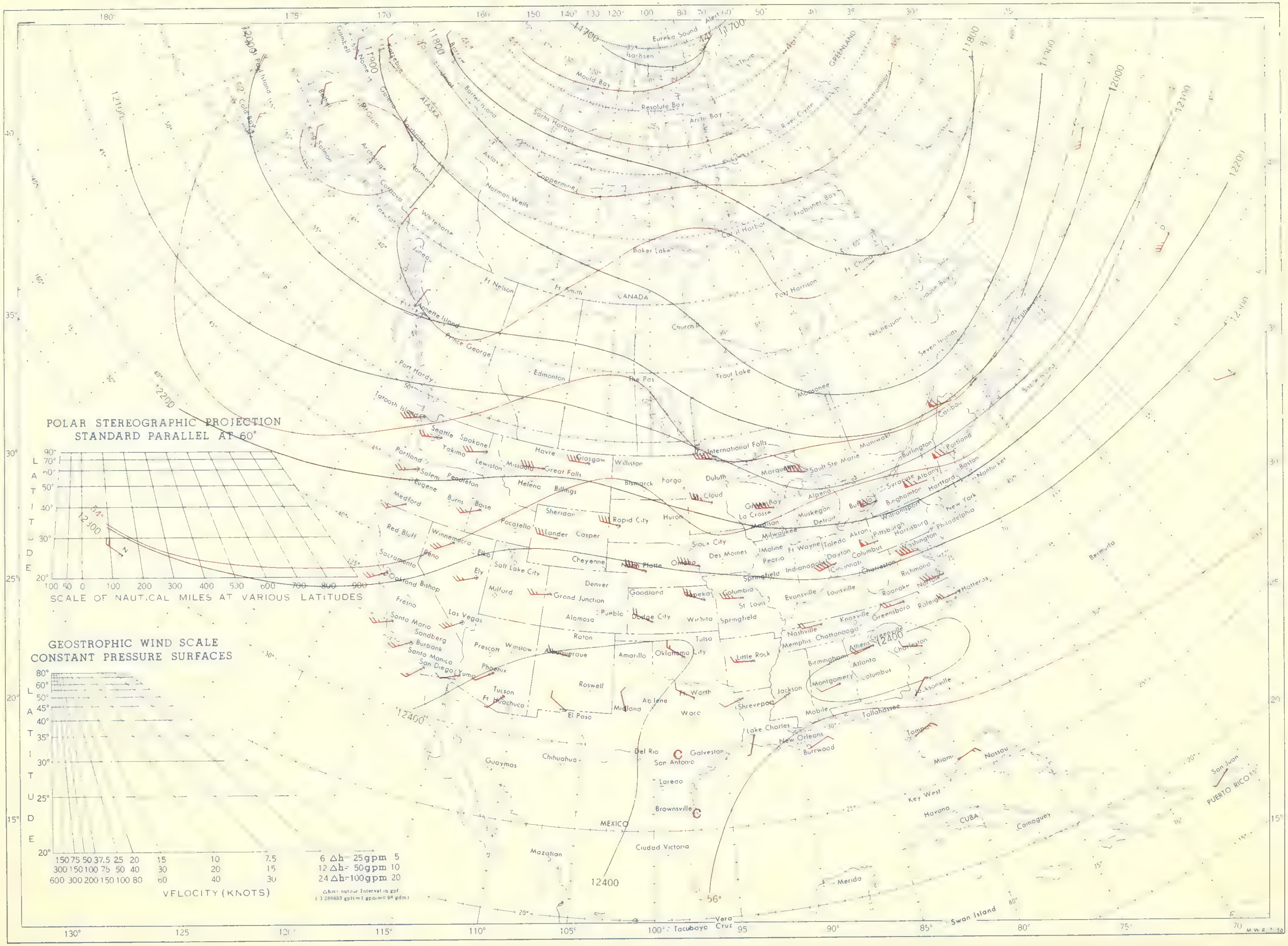
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 0300 GMT, July 1956. Average Height and Temperature, and Resultant Winds.



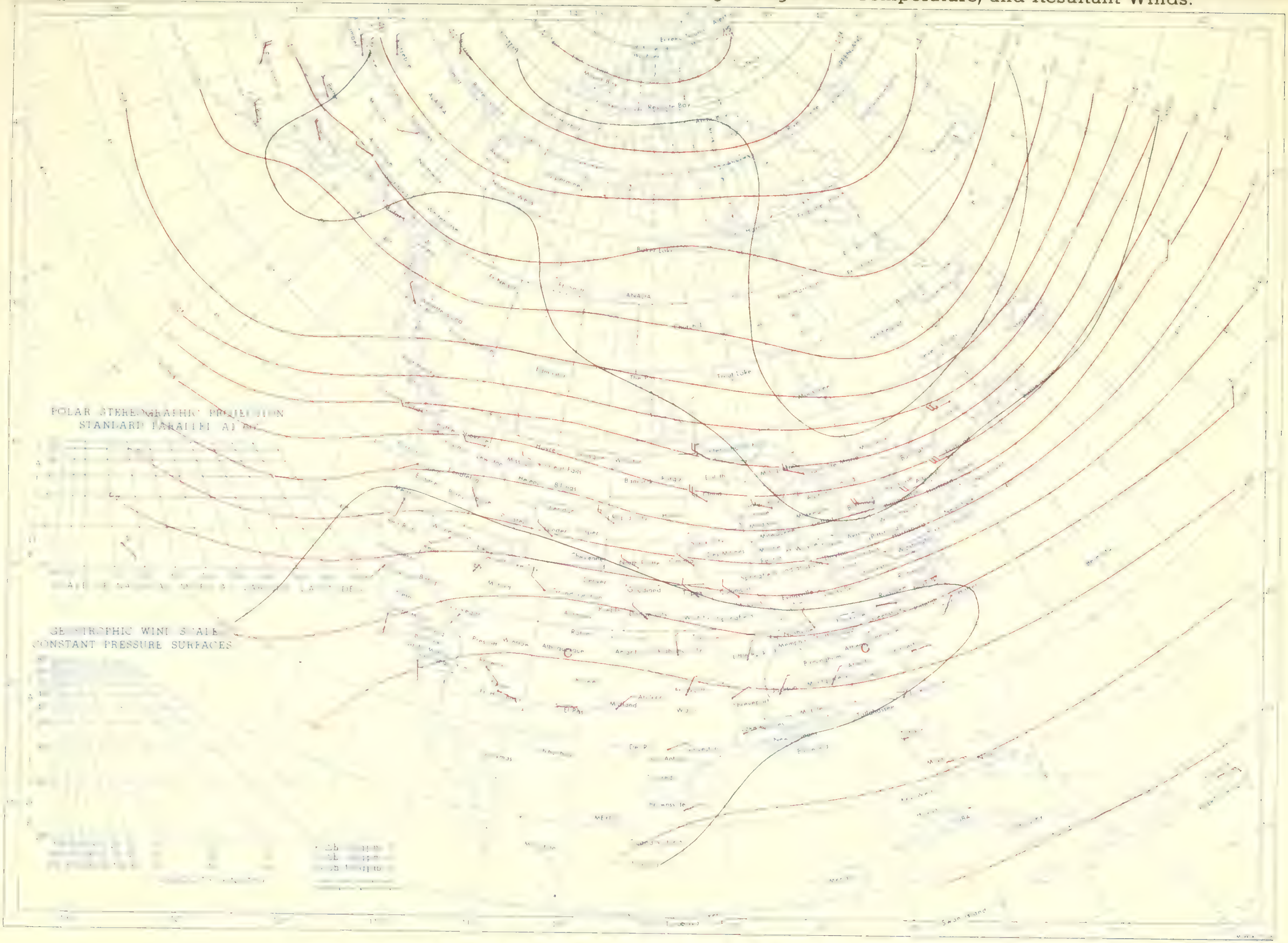
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 0300 GMT, July 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

Chart XVII. 100-mb. Surface, 0300 GMT, July 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

U. S. DEPARTMENT OF COMMERCE
Sinclair Weeks, *Secretary*

WEATHER BUREAU
F. W. Reichelderfer, *Chief*

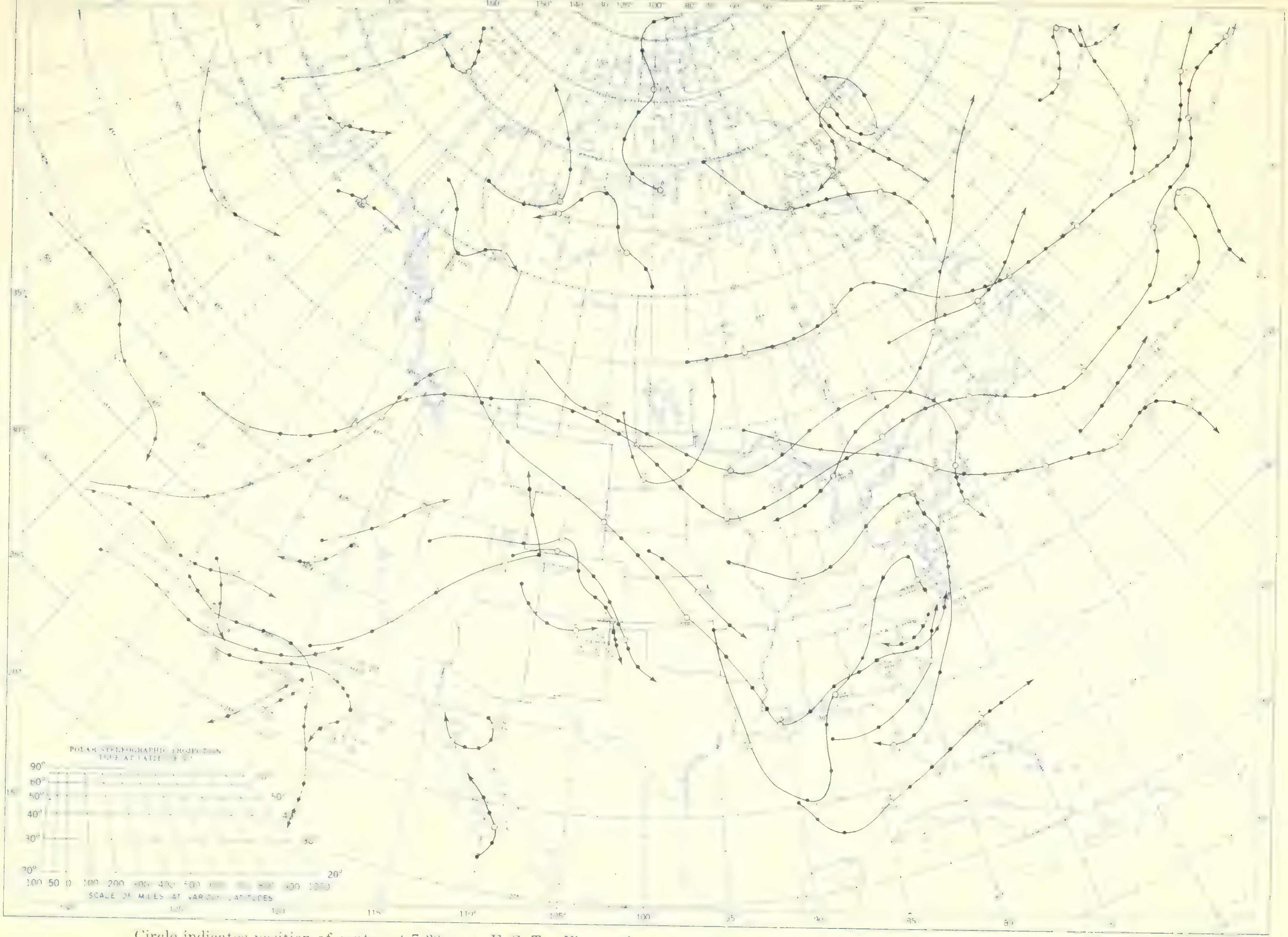
CLIMATOLOGICAL DATA–NATIONAL SUMMARY

CORRECTION

Attached are revised Charts IX and X, the anticyclone and cyclone tracks, for the months October 1955 through February 1956. These are to replace the maps originally printed in Climatological Data-National Summary for those months. The originally-published maps are incorrectly registered with the blue base map. See correction notice in March 1956 issue, page 97.

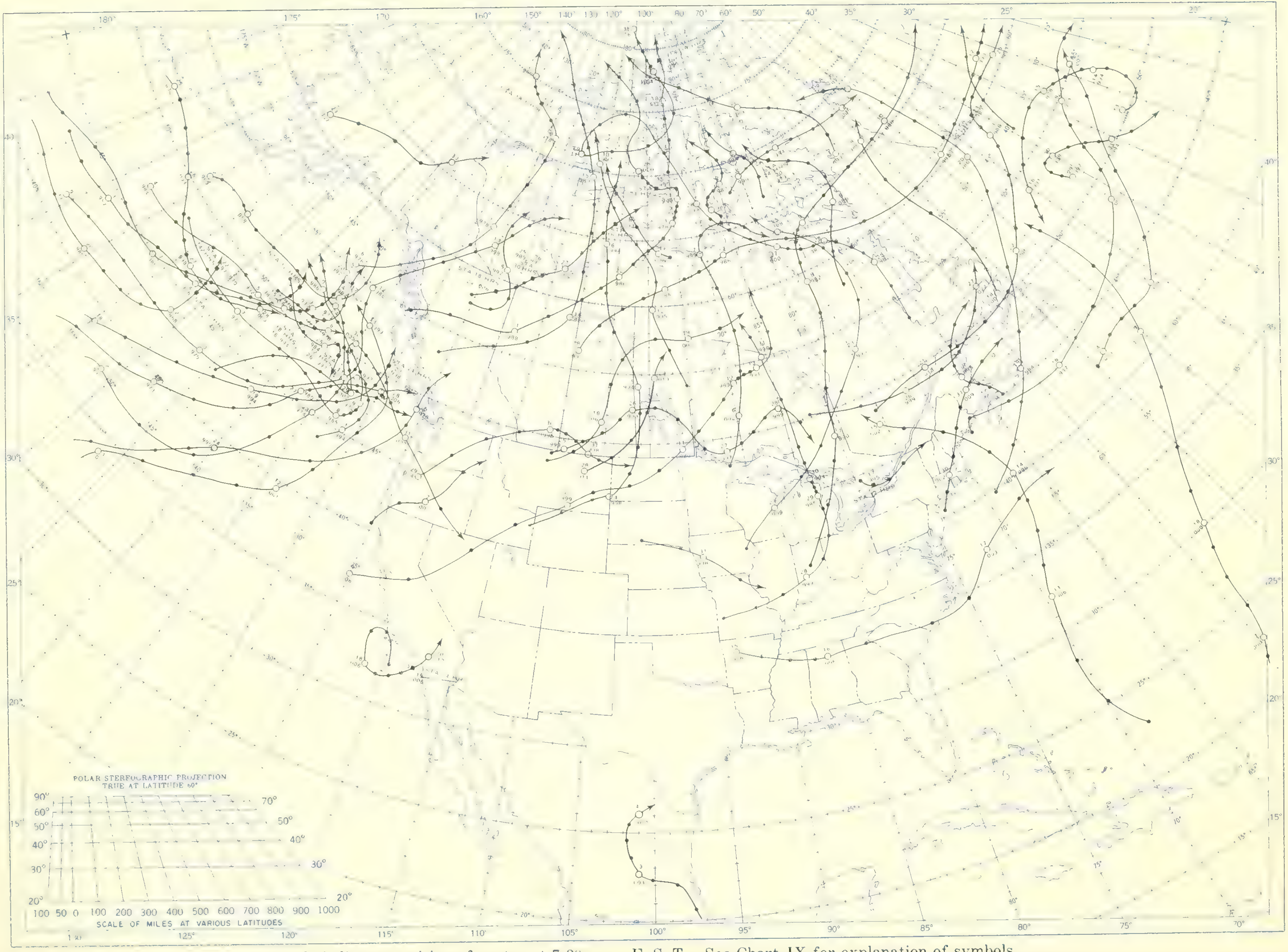
Washington, D. C.
August 23, 1956

Chart IX. Tracks of Centers of Anticyclones at Sea Level, October 1955. (Corrected)



Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, October 1955. (Corrected)



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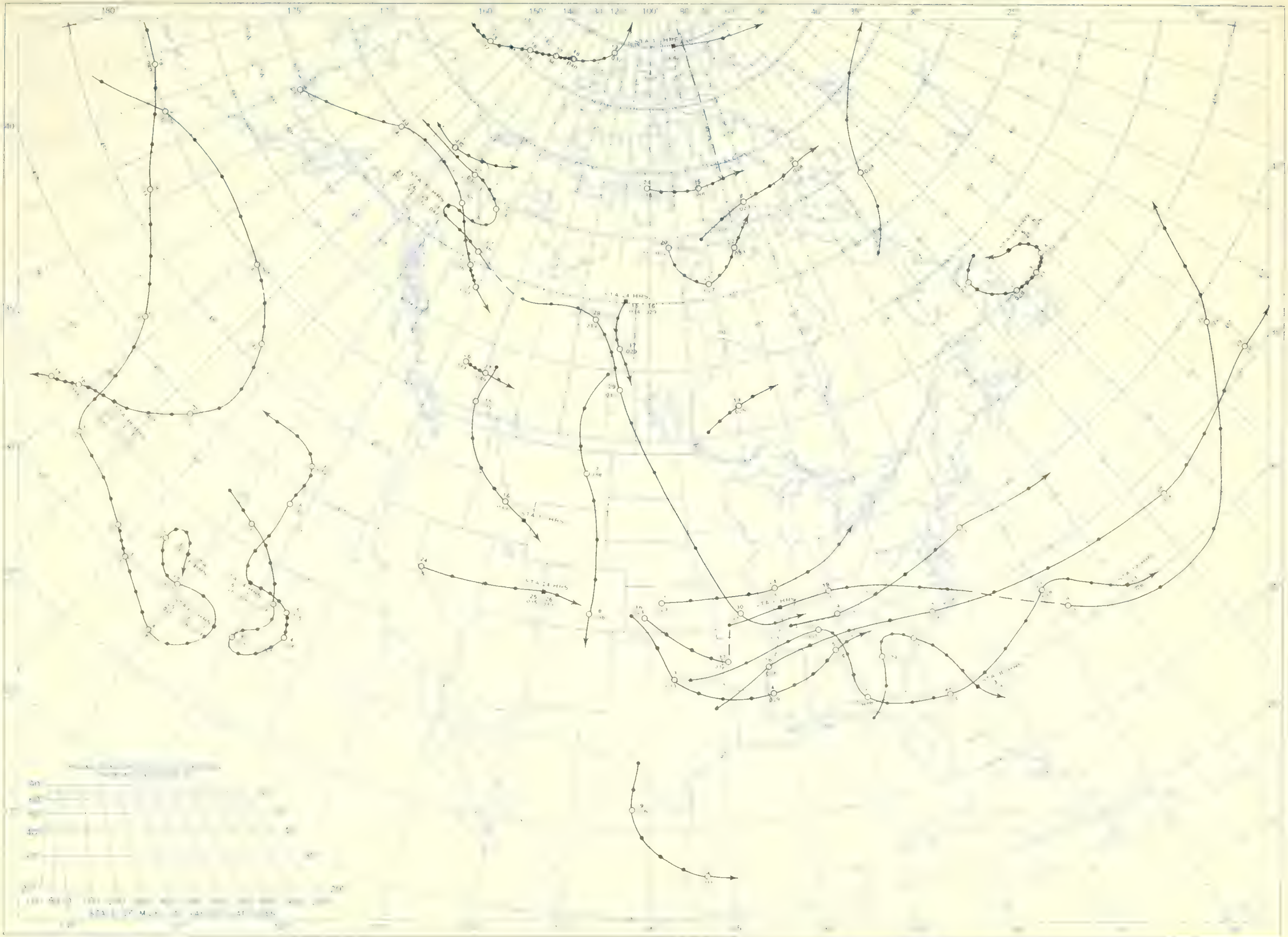

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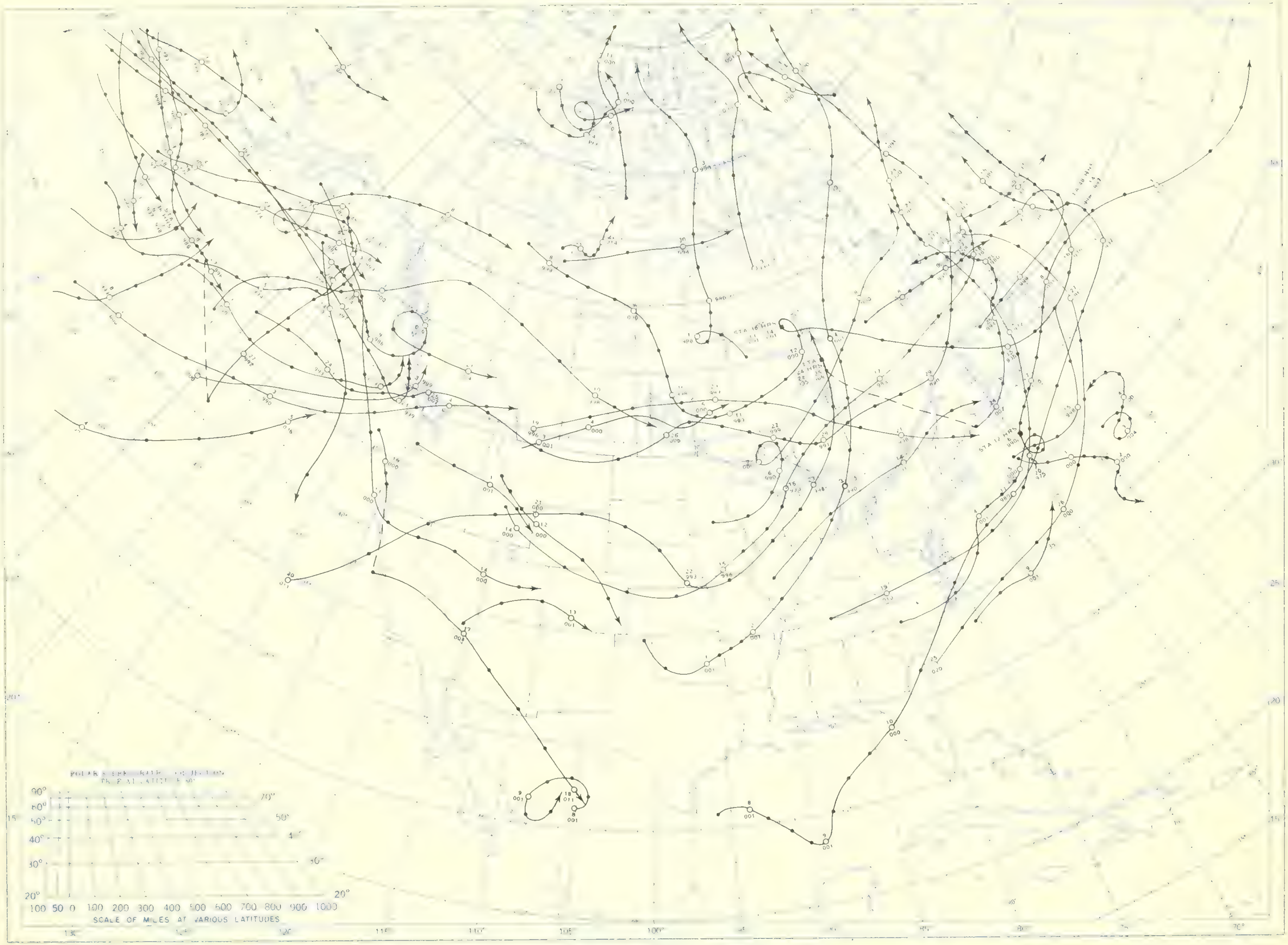
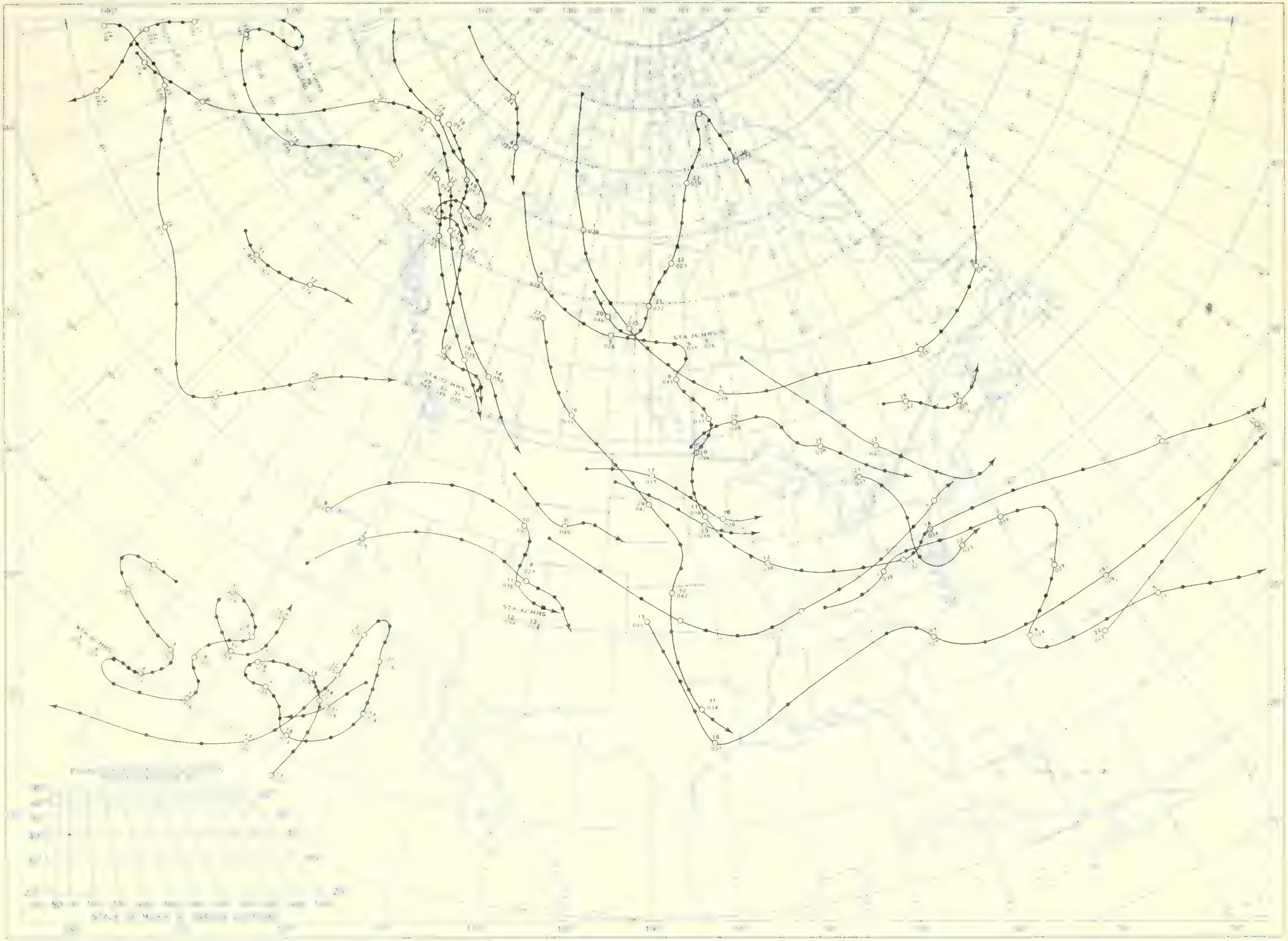


Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, December 1955. (Corrected)



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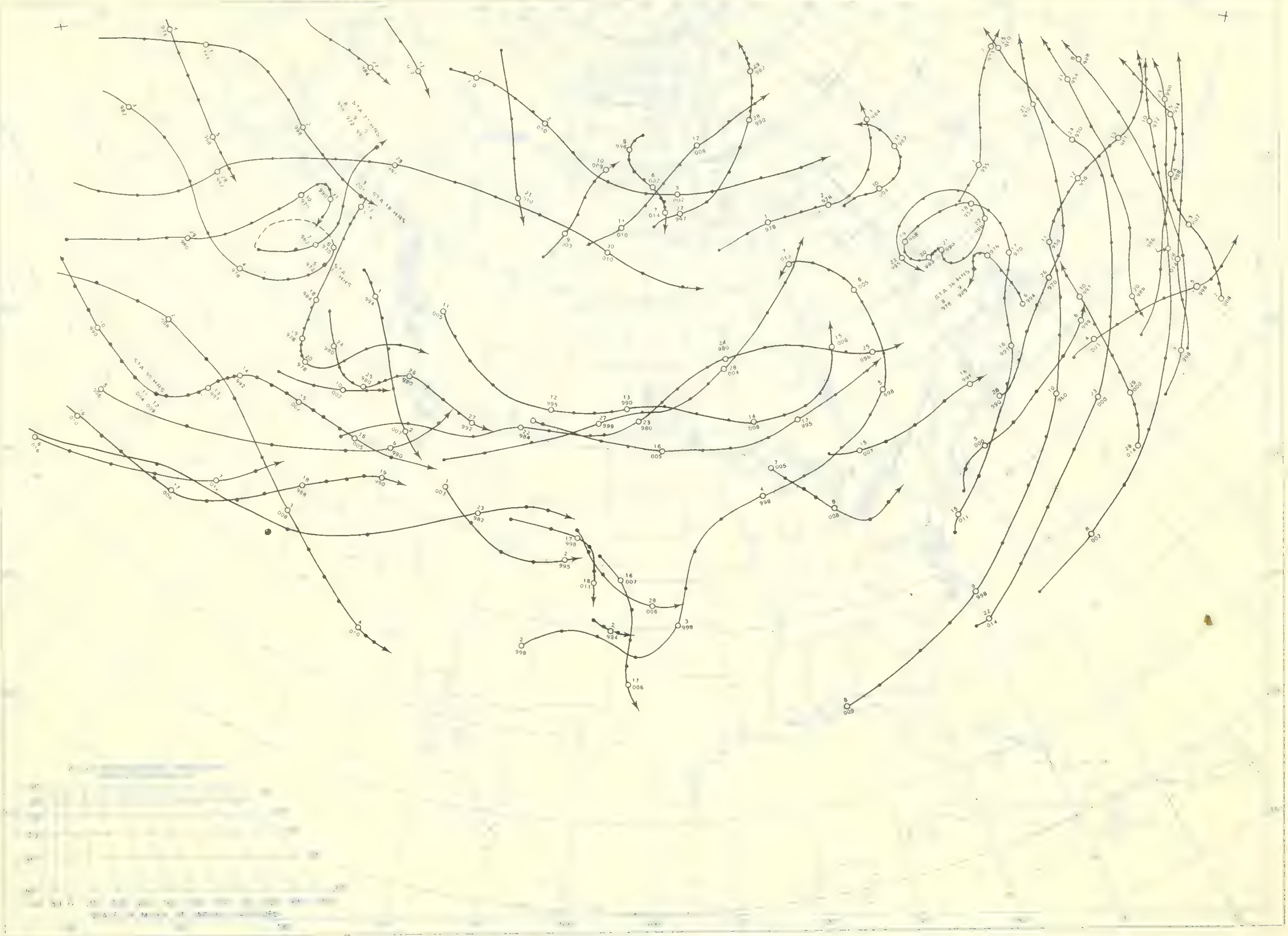
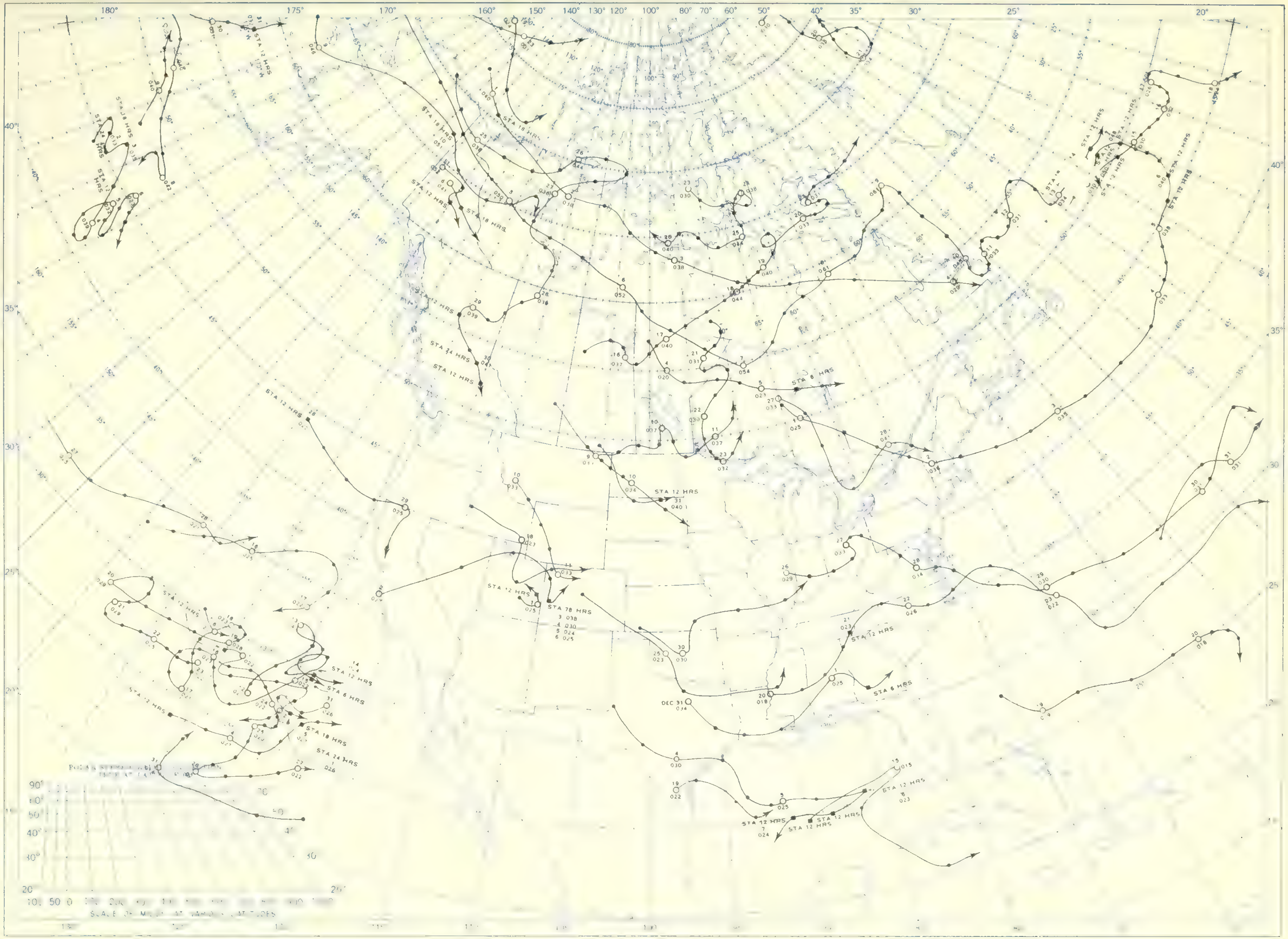


Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, January 1956. (Corrected)



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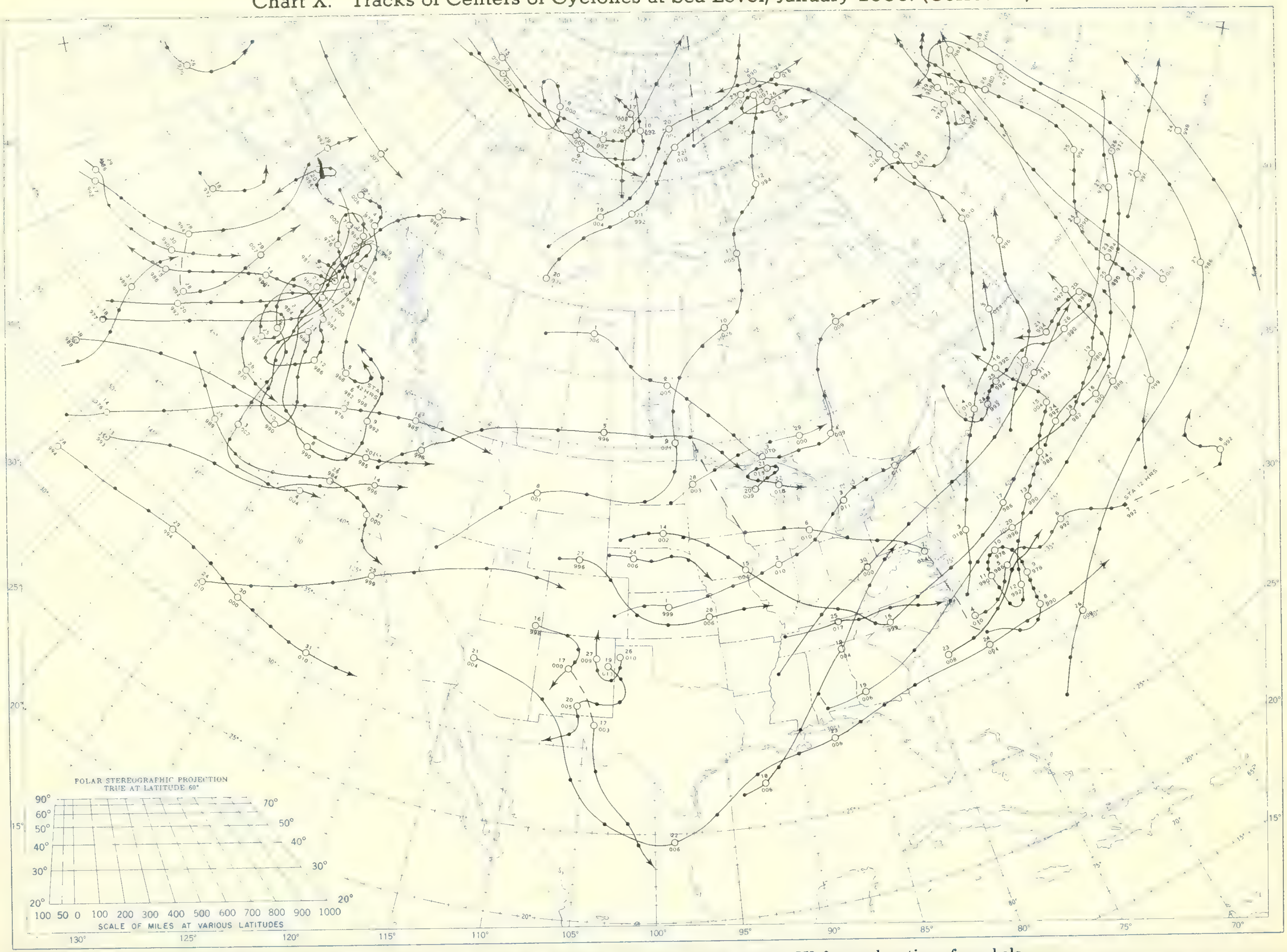

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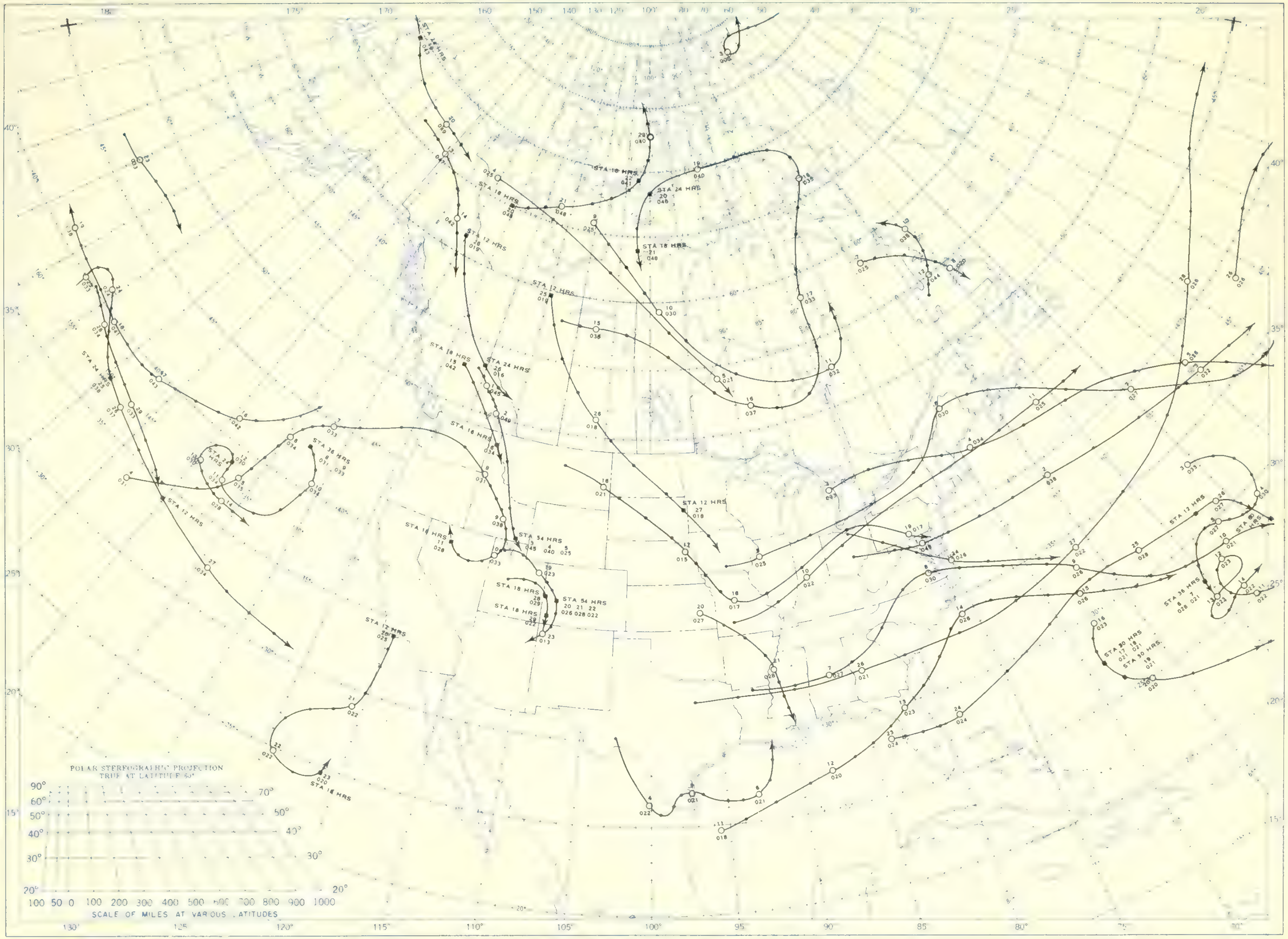
Chart IX. Tracks of Centers of Anticyclones at Sea Level, February 1956. (Corrected)



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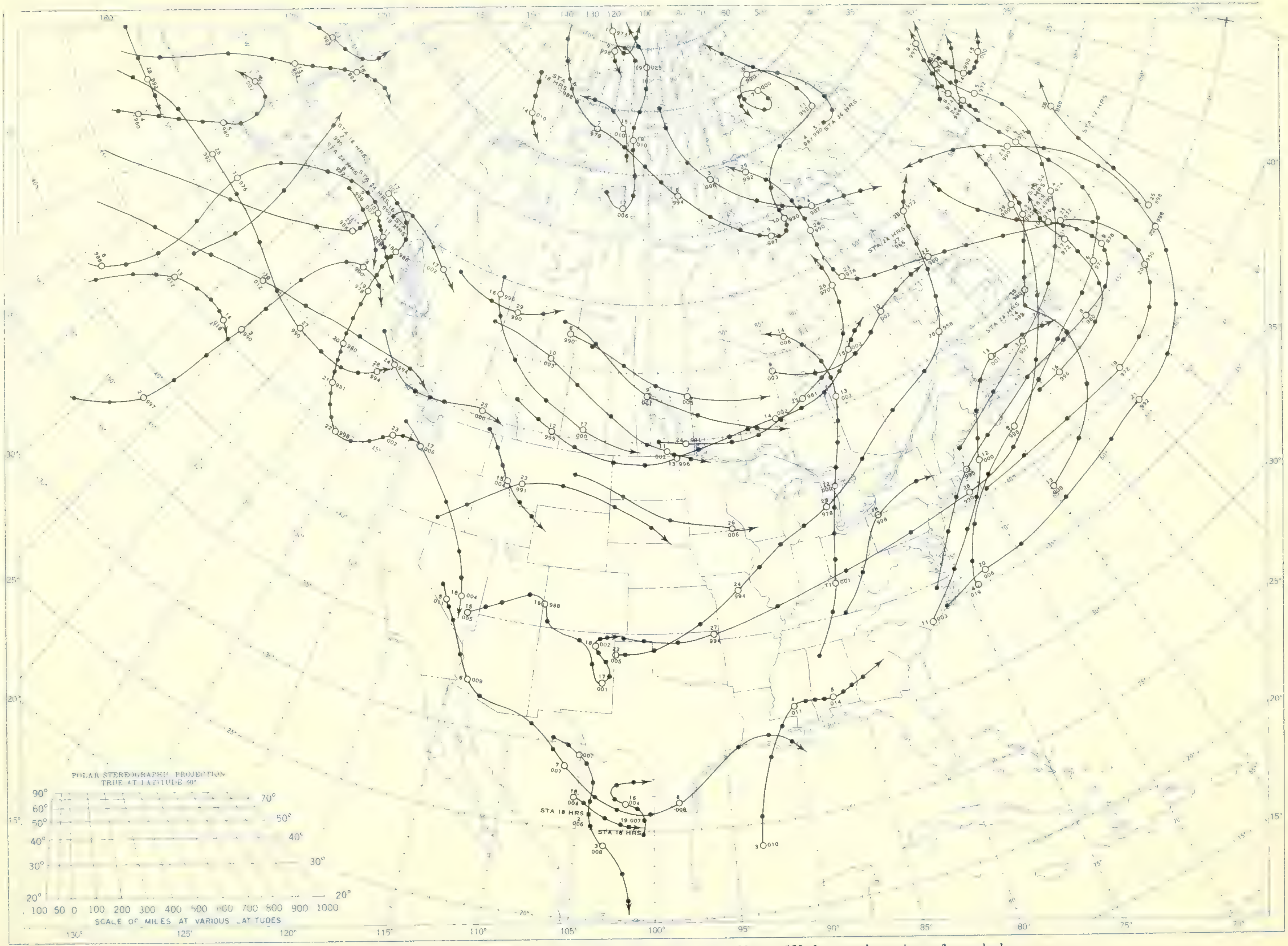

Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

U. S. DEPARTMENT OF COMMERCE
SINCLAIR WEEKS, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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AUGUST 1956
Volume 7 No. 8

ASHEVILLE: 1956

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CHARTS I-XVII

NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 8 AUGUST 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

August was abnormally warm in the southeastern uarter of the Nation and unseasonably cool elsehere. Rainfall was above normal in regions near he Canadian Border and below in most of the reainder of the country. Numerous thunderstorms, any with damaging winds and hail, occurred in the bove-normal rainfall belt in the North. The ombination of extreme heat and scanty rainfall rolonged and intensified the drought situation n the central and lower Great Plains and Southest. From Nebraska to Texas the effects of the rought were severe as crops declined or failed ompletely, and water supplies dwindled or vanished ntirely. East of the Great Plains prospects for ost crops remained good even though parts of the outh needed rain badly the latter part of the onth.

TEMPERATURE.--Temperatures for August averaged bove normal in the central and southeastern ortions of the Nation, with departures from ormal ranging up to 4° or more in the lower Great lains. In this latter area the heat was unusually evere during the first half of the month. For xample, Fort Smith, Ark., reported 14 consecutive ays with 100° or over, and Shreveport, La., 15 onsecutive days (4th-18th) for a new record there. ighest temperatures included 112° at Ozark, Ark., n the 6th; 116° at Fredonia, Kans., on the same ate, 109° at Nevada, Mo., and Beaver City, Nebr., nd 115° at Hulah Dam, Okla., all on the 16th; and 12°at 3 stations in Texas.

The month was abnormally cool in the Ohio Valley, egions near the Canadian Border, and in nearly all reas west of the Great Plains, with average deartures for the month generally ranging between ° and 4°.

The lowest temperatures in the Far West generally ccurred during the first few days or near the end f the month. In the vicinity of Burns, Oreg., rost was reported on the 3d and 30th and low temeratures damaged grains somewhat on the former ate and destroyed tender garden plants on the atter.

In the eastern half of the Country lowest temperaures occurred at most stations soon after the iddle of the month when an unusually vigorous nticyclone for the time of year overspread the ntire area, reducing temperatures by 10° to 20° r more in most sections. During this brief cool eriod (19th to 23d) minimum temperatures fell to ubfreezing levels at a few extreme northern staions and to the high 50's and low 60's at stations long the Gulf. Port Arthur, Tex., recorded 62° n the 22d, a new low there for August, and Conerse, La., recorded 48° on the same date, the irst temperature lower than 50° to be recorded in ouisiana during August since 1896.

Extreme temperatures for the month ranged from 20° in Death Valley, California, at Cow Creek on he 23d and Greenland Ranch on the 24th to 12° at ondurant, Wyo., on the 31st.

The summer of 1956 has been abnormally cool in he upper Great Lakes region, the Northeast, and the Great Basin of the Far West, with departures exceeding 2° at many stations; while the reverse was true in the Great Plains where temperatures averaged about 2° above normal.

PRECIPITATION.--The precipitation pattern for August, much like that for July, shows totals generally exceeding 2 inches east of the Great Plains, in the Dakotas, and along the north Pacific coast, tapering off to less than an inch in parts of the central and lower Great Plains and less than one-half inch in the Far Southwest. Amounts were above normal in Canadian Border areas west of the Appalachians and below elsewhere.

The month was unusually wet in and around the Great Lakes region. Syracuse, N. Y., and Sandusky, Ohio, reported new record totals for August of 8.41 and 6.96 inches respectively, and Saint Cloud, Minn., measured 4.57 inches on the 3d, a new 1-day record there for August.

The 2 inches or more of rain in the East and North were ample generally to maintain good crops, except in parts of the South where hot, dry weather damaged some crops before showers at the end of the month brought relief.

In parts of the central and lower Great Plains, the lack of rain, less than 50 percent of normal, continued to be the main feature of the weather. Subsoil moisture was exhausted, and topsoil moisture short as far north as South Dakota. Severe drought in this area was the result of persistent above normal temperatures and below normal rainfall throughout the summer.

Western Kansas, northern Oklahoma, and the southeastern two-thirds of Texas received less than one-half of their average summer rainfall and temperatures averaged 2° or more above normal. Crops deteriorated and some were a total failure. Short feed crops, low water supplies, and poor fall grazing prospects caused heavy marketing of livestock; even foundation herds were sacrificed by many farmers. Water rationing was necessary in several cities of Oklahoma and Kansas, and in parts of the latter State rivers stopped flowing.

DESTRUCTIVE STORMS.--Heavy rains in northeastern Colorado at the end of July and the first few days of August caused floods in Arapahoe and Jefferson Counties, including Denver; resulting damage was estimated at several million dollars.

On the 12th hurricane-force winds and heavy rains caused about a million dollars damage in the Crosby-Ironton area of Minnesota.

Hail, as usual during the growing season, caused heavy damage to growing crops in numerous sections. A series of these storms caused damage of a few million dollars in Montana on the 2d. Another storm damaged 2,000 acres of grain and other crops in the vicinity of Worland, Wyo., on the 27th. An unusually extensive storm of this type covered about 600 square miles in Cavalier County, North Dakota; accompanied by high winds, it caused total destruction in about one-fourth of the area.

Both the Gulf and Atlantic coasts were spared the fury of hurricanes.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Rockford	107	7	Bridgeport 2W	46	22	Birmingham WB AP	7.12	Natchez	0.21
Arizona	Ehrenberg	117	7	Maverick	27	30	Lakeside RS	3.94	20 Stations	.00
Arkansas	Ozark	112	6	2 Stations	44	21+	Beaty Lake	5.57	Siloam Springs	.49
California	2 Stations	120	23+	Julian Wynola	27	3	Mount Hebron 9E	.70	467 Stations	.00
Colorado	do	105	6	Walden	20	31	John Martin Dam	4.68	Grand Junction WB AP	.04
Connecticut	6 Stations	93	17+	Putnam	39	25	Stamford 5N	3.55	Baltic	.41
Delaware	Georgetown 5SW	96	31	Georgetown 5SW	49	25	Dover	4.64	Georgetown 5SW	1.72
Florida	3 Stations	102	7	Milton Exp. Station	58	23	Wauchula 2NW	12.11	Fernandina Beach	.96
Georgia	2 Stations	105	6	Blairsville Exp. Station	49	24	Savannah Beach 2N	10.61	Winder 1SSE	.27
Idaho	Lewiston	108	14	Obsidian 4NNE	18	3	Dixie	3.69	9 Stations	.00
Illinois	E. St. Louis Parks C	105	18	Aledo 2E	42	21	Jacksonville	8.53	Hutsonville Pwr. Pl.	1.17
Indiana	Spencer 3W	102	5	Wheatfield	38	25	Madison	6.05	Evansville	1.03
Iowa	Hawarden	102	26	Sibley	38	20	Ottumwa	8.92	Kanawha	1.37
Kansas	Fredonia 1F	116	6	Horton	40	21	Alta Vista	6.75	Hutchinson Exp. Fld.	.26
Kentucky	Hopkinsville	105	19	Benton 2	42	22	Munfordville	8.60	Blaine	.84
Louisiana	3 Stations	105	16+	2 Stations	48	22	Golden Meadow	9.75	Milam, Texas 8E	.08
Maine	Millinocket	93	17	Greenville	31	30	Greenville	5.61	Ellsworth	.96
Maryland	3 Stations	98	18+	New Germany	35	22	Sines Deep Creek	9.22	Brighton Dam	.82
Massachusetts	5 Stations	94	10+	2 Stations	35	3+	Nantucket WB AP	6.61	Fall River	.82
Michigan	Paw Paw 2E	99	4	Vanderbilt Trout Sta.	29	20	Port Huron Sewage Pl.	10.61	Mott Island Isle R	1.00
Minnesota	Austin 4S	97	27	2 Stations	34	20	Highlanding 1N	8.30	Int. Falls WB AP	.97
Mississippi	Batesville	105	17	Charleston	45	22+	Wiggins	7.70	Greenwood	.19
Missouri	Nevada	109	16+	2 Stations	40	21	Chillicothe Radio KCHI	8.60	Alton	.83
Montana	Raynesford	104	23	West Yellowstone	18	31	Babb 6NE	5.05	Lima Dam	.27
Nebraska	Beaver City	109	16	3 Stations	38	29+	Princeton 2N	7.76	Scottsbluff WB AP	.29
Nevada	3 Stations	112	24+	Mountain City RS	24	28	Minden	.18	48 Stations	.00
New Hampshire	2 Stations	95	17+	2 Stations	32	3+	Mount Washington	10.54	South Weare 1SE	.64
New Jersey	Burlington	97	18	Layton 3NW	40	25	Bass River State Forest	7.88	Belleplain	2.20
New Mexico	Belen	106	10	Gavilan	24	31	Abbott	4.64	Belen	.03
New York	Poughkeepsie	99	19	Saranac Lake	33	2	Elma	9.19	Ticonderoga	.73
North Carolina	Wadesboro	103	7	Banner Elk	36	22	Bodie Island	10.85	Cody Store	.14
North Dakota	2 Stations	98	15	Towner	30	20	Grafton	6.03	Flaxton	.79
Ohio	do	99	4+	3 Stations	40	21+	Willoughby 4N	10.74	Urbana Grimes Field	1.08
Oklahoma	Hulah Dam	115	16	Elk City 2SSE	45	21	Spavenaw	3.82	2 Stations	T
Oregon	The Dalles	107	22	3 Stations	23	3+	Headworks Ptlnd. Water	5.21	13 Stations	.00
Pennsylvania	Wellsville	100	28+	2 Stations	33	22	Corry	12.39	2 Stations	2.14
Rhode Island	Providence WB AP	92	18	Kingston	44	3+	Greenville	1.95	Austin	.90
South Carolina	Santuck 4SE	105	6	Laurens	51	23	Eutawville	9.65	Long Creek	.30
South Dakota	3 Stations	101	3+	Deerfield 5NW	30	20+	Wessington Springs	10.23	Smithwick 6SW	.71
Tennessee	Milan	104	13+	2 Stations	42	22	Well Springs	7.09	Fort Loudoun Dam	.34
Texas	5 Stations	112	5+	do	48	20+	New Braunfels	5.83	Several Stations	.00
Utah	do	104	10+	Ibapah	24	31	Bryce Canyon NP	1.87	10 Stations	.00
Vermont	Bellows Falls	94	19	3 Stations	34	2+	Mount Mansfield	4.43	Rutland	.53
Virginia	2 Stations	99	18+	Burkes Garden	37	22	Smithfield 3NE	8.69	Wytheville	.66
Washington	3 Stations	106	14+	Rainier Paradise	28	1+	Washougal 8ENE	6.39	Mount Adams RS	.00
West Virginia	Charleston 1	96	6	2 Stations	35	22	Canaan Valley	10.75	Alderson	.73
Wisconsin	4 Stations	96	4+	Couderay	31	20	Ripon 5NE	8.07	West Allis	1.97
Wyoming	2 Stations	99	5+	Bondurant	12	31	Hat Creek	3.50	Evanston 1E	.00
Puerto Rico	San German	98	11	Garzas Dam	57	27	Rio Blanco 1800 Feet	21.81	Santa Isabel 3NW	1.38

+ And also on a later date or dates.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations)

CLIMATOLOGICAL DATA

able 2

State and station	Elevation of ground	Pressure		Temperature								No. of days				Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)				
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p. h.		M p. h.			0-3	4-7	8-10	0-10	%
ALABAMA																																
irmingham	610	992.3	1017.1	93	69	80.5	1.4	100	6+	53	22	24	0	67	69	7.12	2.57	1.90	10	10	0.0	0	6.3	NE	30	NW	19	10	12	9	5.2	71
obile	211	1009.2	1017.0	90	71	80.7	.1	97	7+	59	22	18	0	71	79	4.96	1.35	1.27	14	15	.0	0	7.0	SW	-	-	-	9	14	8	5.3	-
ontgomery	198	1009.2	1016.5	93	71	82.2	1.3	100	7	61	22	26	0	70	73	3.53	1.22	1.07	9	10	.0	0	4.4	S	36	NE	13	7	17	7	5.1	72
ARIZONA																																
lagstaff	6993	-	-	77	44	60.8	2.6	85	9+	35	4	0	0	-	-	1.42	1.18	.30	9	11	.0	0	--				--	16	7	6	4.0	--
hoenix	1114	972.2	1010.4	99	72	85.8	2.5	105	7+	63	31	31	0	54	37	.46	-.53	.27	5	4	.0	0	5.7	E	*25	SE	17+	23	5	3	2.3	97
rescott	5014	849.3	1013.2	87	57	71.7	-2.2	94	9+	49	29	11	0		--	.73	2.97	.35	6	10	.0	0	9.2	SSW	31	SW	2+	18	10	3	3.2	81
ucson	2558	925.2	1010.9	97	71	84.0	.2	104	9	61	29	31	0	53	39	1.12	-1.03	.73	5	7	.0	0	6.6	ESE	37	SE	12	18	6	7	3.6	87
inslow	4880	853.0	1010.9	90	58	74.1	.9	98	9	52	4+	16	0	41	3[illegible]	1.04	-.58	.79	11	12	.0	0	8.9	WSW	*35	NNW	21	19	6	6	3.3	
uma	199	1004.1	1009.2	108	74	90.9	-2.8	113	22	64	27	31	0	53	31	.00	-.50	.00	0	0	.0	0	8.4	SSE	31	S	15	28	2	1	.9	97
ARKANSAS																																
ort Smith	158	997.6	1014.0	99	69	84.2	2.1	109	16	54	22	29	0	64	57	2.36	.26	1.71	4	4	.0	0	7.1	NE	35	NW	31	15	13	3	3.6	84
ittle Rock	257	1002.4	1015.0	96	71	83.5	2.2	104	5+	57	22	27	0	68	65	2.25	-.90	1.45	4	7	.0	0	8.7	SSW	54	NW	31	12	16	3	4.4	80
exarkana	361		-----	97	71	84.1	1.4	104	6+	56	22	27	0	--	-	2.41	.47	.97	9	5	.0	0	----	-					--			-
CALIFORNIA																																
akersfield	489	995.3	1013.0	94	64	78.8	-3.0	102	11	57	4+	27	0	50	39	.00	.01	.00	0	0	.0	0	6.1	NW	*20	NW	11+	27	4	0	1.0	
ishop	4108	873.0	1011.5	94	50	71.8	-1.7	99	23+	41	2+	31	0	-		.00	-.11	.00	0	0	0	0					-	28	3	0	1.1	--
lue Canyon	5280	841.5	1013.9	74	55	64.5	-2.8	81	10	15	2	0	0			.00	-.05	.00	0	0	.0	0	---	--		--	-	24	5	2	1.7	--
urbank	699	988.2	1014.4	84	60	71.9	1.7	106	23	54	4	6	0	56	66	T	.02	T	0	0	.0	0	4.6	S	*15	S	25	17	12	2	3.3	--
ureka (L)	43	1015.9	1018.3	61	52	56.8	.2	67	15	49	10+	0	0	-		T	-.11	T	0	0	0	0	6.0	-	26	N	27	9	7	15	6.4	49
resno	331	1001.0	1013.0	93	59	76.0	-3.5	100	10	53	2+	24	0	50	45	.00	.00	.00	0	0	0	0	6.6	NW	19	NW	1	29	2	0	.6	100
os Angeles (L)	312	-	-	82	62	71.9	1.0	98	23	59	4+	3	0	58	70	T	-.02	T	0	0	.0	0	5.1		17	W	2+	17	12	2	3.4	74
os Angeles	99	1010.5	1014.4	76	62	69.2	1.0	85	23	58	5	0	0	59	73	T	-.02	T	0	0	.0	0	7.4	WSW	*23	W	18	11	17	3	4.5	--
t. Shasta (R)	3514	893.7	1016.3	82	47	64.3	1.5	92	31	38	3	1	0	-	-	.02	-.11	.02	1	5	.0	0	-	-		--	--	23	7	1	2.3	
akland	3	1015.6	1015.9	70	55	62.5	-.4	82	10	5[illegible]	6	0	0	53	77	T	-.02	T	0	0	.0	0	9.4	W	*25	W	15+	14	15	2	3.7	
ed Bluff	341	1000.7	1013.2	93	64	78.4	2.1	105	10	55	12	27	0	46	35	.00	-.05	.00	0	1	.0	0	8.1	SSE	26	W	1	25	4	2	1.6	99
acramento	17	1012.2	1013.1	89	56	72.1	-1.1	101	10	51	4+	13	0	51	55	.00	.00	.00	0	0	.0	0	10.2	SW		--	-	25	5	1	1.4	97
andberg (R)	4517	863.9	1012.9	81	58	69.8	-3.7	92	22+	5[illegible]	28	3	0		-	.00	-.10	.00	0	0	.0	0	13.6		*29	NNW	6	28	3	0	.8	--
an Diego	19	1010.8	1014.1	75	64	69.7	-.6	84	23	60	4	0	0	60	73	T	-.05	T	0	0	.0	0	7.5	SSW	16	SW	27	16	12	3	4.1	66
an Francisco (L)	52	- --	- --	64	53	58.9	-.4	75	10	50	8+	0	0	-	--	.01	.00	.01	1	0	.0	0	10.2		30	W	1	12	13	6	4.3	68
an Francisco	8	1015.2	1016.0	71	54	62.2	1.6	81	10	48	3	0	0	53	78	T	-.01	T	0	0	0	0	11.9	W	37	W	1	20	9	2	2.8	--
anta Maria	238	1007.1	1015.9	69	51	59.7	-2.7	76	23+	16	2+	0	0	52	80	T	-.03	T	0	0	.0	0	6.6	WNW	*21	W	4	13	15	3	4.2	
COLORADO																																
lamosa	7536	776.2	1017.9	78	42	60.2	-1.6	88	10	32	29	0	1			1.18	.08	.50	10	13	.0	0	- --	- -	-		-	11	14	6	4.7	-
olorado Springs	6173	814.1	1014.4	82	53	67.6	-2.1	92	6+	43	31	4	0	42	56	1.42	-1.27	.47	12	14	.0	0	10.1	N	*29	N	8+	11	10	10	5.3	--
nver	5292	840.2	1013.3	83	57	69.7	-1.6	91	5+	44	31	6	0	43	45	1.83	.40	1.36	7	7	.0	0	11.3	SSW	40	SW	21	10	14	7	5.1	74
and Junction	4849	860.1	1013.0	87	60	73.5	-2.1	94	9+	52	31	12	0	34	29	.04	-1.16	.03	2	7	.0	0	10.2	ESE	47	N	17	14	13	4	3.9	76
eblo	4639	858.1	1013.5	87	58	72.9	-.4	98	6	50	21	20	0	44	44	.58	-1.20	.30	7	7	.0	0	8.4	WNW	50	W	28	9	11	11	5.4	77
CONNECTICUT																																
idgeport	7	1014.7	- --	81	63	72.0	.3	93	18	51	25	2	0			1.91	-2.52	.58	11	3	.0	0	- --	- -	-	--	--	7	15	9	5.7	-
artford	169	1008.4	1014.3	81	58	69.6	1.8	93	18	46	3	3	0	59	72	1.13	-2.41	.51	11	3	.0	0	9.1	SW	25	SW	10	9	10	12	5.9	58
ddletown (L)	133	1010.0	- - -	82	59	70.1		93	18	47	3+	3	0	-	-	.89	--	.52	7	1	.0	0	7.6	-	%35	NE	7	--			- -	
w Haven	6	1014.0	1014.6	79	61	69.9	.1	90	18	48	25	1	0	--	--	.93	-3.18	.61	8	3	.0	0	5.8	-	21	NE	7	6	13	12	6.2	64
DELAWARE																																
lmington	78	1011.7	1015.0	83	64	73.4	-.4	93	28	53	22	4	0	64	76	3.58	-1.70	1.62	6	1	.0	0	8.7	WNW		-		9	13	9	5.4	-
DIST. OF COLUMBIA																																
shington (U)	72	--	-	85	67	75.9	.1	97	31	56	22	10	0	--	--	1.76	-2.73	1.08	9	2	.0	0	5.5	-	25	W	14	-			-	--
sh. Nat'l AP	14	1010.8	1015.2	83	67	75.0	-.4	93	18+	55	22	5	0	64	71	1.94	-2.81	1.11	9	3	.0	0	7.1	S	26	W	14	9	11	11	5.5	62
FLORIDA																																
alachicola (L)	13	1015.0	---	89	75	82.2	.9	99	8	68	22	13	0	-	-	9.27	1.79	4.82	12	12	.0	0	5.7		33	SE	12	15	11	5	4.2	82
ytona Beach	31	1015.7	1017.2	91	71	81.3	.4	99	7	66	26	24	0	72	80	4.06	-1.76	1.65	8	19	.0	0	7.4	SSW	*21	SSW	20+	5	20	6	5.6	-
rt Myers	15	1016.4		93	72	82.3	-.2	97	3+	68	17	30	0	-		8.03	.22	2.45	12	22	.0	0	6.0	-	*37	SW	10+	7	21	3	5.2	--
cksonville	24	1016.3	1017.1	94	73	83.2	1.4	100	7	68	23+	27	0	72	76	5.24	-1.19	2.23	9	11	.0	0	7.8	SW	37	NNE	15	9	18	4	5.2	72
y West (L)	9	1015.4	-----	94	79	86.6	2.7	97	26	75	1+	31	0	--	-	1.24	-3.43	.86	9	13	.0	0	5.4	-	19	NW	22	4	25	2	5.4	87
keland (L)	214	--	-- - -	92	73	82.6	.9	96	3+	70	18	27	0	--	-	7.34	.21	1.90	15	24	.0	0	5.0	--				2	25	1	5.8	71
ami (L)	8	-	-	89	76	82.5	.4	94	15	69	15	10	0	--		5.13	.07	1.64	10	17	.0	0	7.9		40	W	15	8	21	2	4.7	72
ami	8	1015.5	1016.5	92	75	83.8	.9	97	6+	71	18	28	0	73	76	4.59	-2.02	1.36	14	19	.0	0	8.5	N	27	WSW	24	3	24	4	5.6	
ami Beach	9	---	-- --	89	79	83.9	.9	98	15	73	17	9	0		--	4.60	.21	2.00	12	-	.0	0	-	--				7	20	4	-	
lando	106	1013.1	1017.3	93	72	82.5	.0	97	5	69	18	29	0	73	79	6.10	-.77	1.83	17	19	.0	0	6.2	S	31	W	28	4	21	6	5.6	--
nsacola (L)	13	1014.5	-	90	75	82.2	1.0	101	7	63	22	14	0		-	3.42	-4.01	.96	10	11	.0	0	6.4	--	24	W	1				-	64
llahassee	64	1014.1	1016.5	91	71	80.7	-.2	98	7	66	22	22	0	72	81	5.10	-1.52	1.48	15	15	.0	0	4.5	NW	--		-	4	20	7	5.8	--
ampa	19	1015.7	1017.1	90	74	82.1	.1	93	2+	70	24	20	0	73	78	6.60	-1.46	1.58	14	24	.0	0	6.9	W	29	W	21	5	19	7	6.0	68
st Palm Beach	15	1015.4	1016.4	90	74	83.1	.9	97	7	69	20	30	0	74	80	8.90	1.50	2.87	14	21	.0	0	7.4	ESE	51	ESE	17	2	23	6	5.8	--
GEORGIA																																
lanta	975	976.5	1017.1	90	70	80.4	1.8	98	6	62	23	20	0	67	70	1.10	-2.71	.46	8	6	.0	0	9.0	SW	31	NW	30	8	12	11	5.6	65
hens	798	988.0	1016.6	92	68	79.7	.0	97	6+	60	23	22	0	68	74	.48	-3.50	.32	7	11	.0	0	7.3	SW	*29	NNE	15	8	17	6	5.3	--
gusta	143	1009.3	1015.8	94	69	81.8	2.0	104	6	62	24	27	0	70	73	2.33	-1.77	.75	10	13	.0	0	5.9	SW	*30	W	19	10	14	7	5.4	-
lumbus	385	1002.9	- ---	94	70	81.9	1.7	100	11	61	24	26	0	-	--	.96	-3.97	.28	8	9	0	0	-		--	---	--	6	19	6	5.4	--
con	356	1002.8	1016.1	95	71	82.9	1.2	100	6+	63	23+	26	0	69	70	2.23	-2.41	.66	10	10	.0	0	7.3	WSW	31	SW	15+	11	14	6	4.9	79
me	637	993.8	- ----	92	66	78.8	.0	101	6	56	23	20	0	-	--	5.48	1.59	2.97	11	17	.0	0	- -			-	--	8	10	13	6.0	--
vannah	48	1014.0	1016.4	92	71	81.2	.3	97	6	66	22	25	0	72	78	4.21	-2.04	1.08	11	10	.0	0	7.2	SW	23	N	19	10	14	7	5.1	76
omasville (L)	283	------	-----	94	71	82.4	1.8	99	7	65	22+	27	0	-	--	3.51	-2.40	1.82	8	6	.0	0	- - -			-	-		- -		--	--
IDAHO																																
ise	2842	919.4	1013.7	85	55	69.7	2.8	96	13	45	30	9	0	42	40	.08	-.13	.06	2	2	.0	0	7.4	WNW	36	W	1+	22	5	4	2.9	91
aho Falls 46W (R)	4399	850.0	1014.9	84	45	64.1	2.8	95	13+	30	31	6	1		-	.02	-.62	.01	2	4	.0	0	7.3	---	a31	WSW	29	--	-	-	- -	-
aho Falls 42NW (R)	4790	---	-----	85	44	64.3	1.0	95	13	28	31	6	1	-	-	.06	-.74	.04	2	-	-		9.3		a30	NNW	6		-		-	--
wiston	1413	963.8	1014.6	86	54	69.9	3.2	104	14	44	2	14	0	--	-	2.10	1.72	1.26	5	3	.0	0	- -	--	--		--	16	7	8	3.8	—
catello	4444	863.5	1013.9	85	50	67.4	-2.7	97	13	35	31	8	0	39	38	.01	-.71	.01	1	9	0	0	10.4	SW	49	SW	1	17	8	6	3.7	83
ILLINOIS																																
iro (U)	314	1002.7	--	91	71	81.1	1.6	103	5+	56	22	21	0	--	--	1.77	-1.44	.76	7	6	.0	0	7.2	- -	26	NW	10	16	10	5	3.5	80
icago	610	991.9	1014.4	83	65	74.1	1.4	99	4	53	21	4	0	61	68	4.18	.99	1.57	12	7	.0	0	7.6	SW	36	SW	29	6	12	13	6.5	65
line	589	992.2	1014.1	84	63	73.3	.3	95	4	46	21	6	0	63	73	3.34	-.23	.85	12	10	.0	0	8.7	WSW	35	SW	22	7	13	11	5.6	74
oria	654	992.9	1014.6	84	64	74.1	.4	96	4	50	21	4	0	64	70	4.47	1.48	2.37	9	10	.0	0	10.1	---	65	W	13	10	12	9	5.6	74
ringfield	589	991.9	1015.0	85	65	74.8	.8	93	4	49	21	5	0	65	73	5.29	2.17	4.79	9	10	0	0	9.3	SSW	50	N	13	12	11	8	4.9	72
INDIANA																																
ansville	383	1000.3	1015.9	88	65	76.6	.3	100	5	49	22	12	0	66	71	2.98	-.06	1.94	7	6	.0	0	6.9	SSW	37	NW	13	14	8	9	5.0	69
rt Wayne	801	984.4	1015.0	83	61	72.2	.8	96	5	45	25	5	0	61	71	2.63	-.17	.78	10	9	.0	0	9.9	SW	36	S	13	3	17	11	6.4	62
dianapolis	793	986.5	1015.2	84	62	73.0	-1.0	96	5	49	22	3	0	63	73	2.55	-.97	1.07	7	5	.0	0	8.8	SW	46	W	18	8	12	11	5.7	69
uth Bend	768	987.1	1014.9	82	60	71.0	-.4	98	4	42	25	4	0	62	75	3.68	.43	2.09	10	10	.0	0	9.4	SSW	*25	NNW	5+	3	15	13	6.5	—

e footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature								No. of days		Average dew point	Average relative humidity	Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In.	In	M p h		M p. h.			0–3	4–7	8–10	0–10
IOWA																															
Burlington	694	989.8	1015.3	85	64	74.3	-0.1	96	4	47	21	6	0	64	73	5.09	1.78	2.45	10	10	0.0	0	8.1	SSW	49	W	30	11	11	9	5.2
Des Moines	948	983.4	1014.3	85	64	74.5	.7	97	4	43	20	6	0	63	70	3.47	-.29	.87	11	12	.0	0	10.4	S	45	W	8	7	14	10	5.9
Dubuque	1065	988.8	1014.4	82	60	70.8	.1	93	27	44	21	2	0	60	69	3.55	-.05	2.51	9	8	.0	0	----	---	--	---	--	4	15	12	6.5
Sioux City	1094	972.6	1013.1	88	62	[illegible]	1.3	100	26	48	19+	11	0	59	63	1.54	-1.18	.55	12	12	.0	0	11.2	SSE	52	N	6	5	19	7	5.9
Waterloo	870			[illegible]	61	[illegible]	.1	95	4	41	20	4	0	-	-	3.24	-.42	1.75	11	9	.0	0	10.8	---	-	--	--	--	-	-	---
KANSAS																															
Concordia (U)	1375	963.8		[illegible]	69	80.9	2.1	108	16	53	21	22	0	--	52	1.84	-1.36	.72	8	8	.0	0	7.9	-	26	NW	5	9	14	8	4.8
Dodge City	2594	[illegible]	1011.8	[illegible]	67	80.0	1.4	105	6	51	21	26	0	51	42	1.08	-1.60	.38	9	9	.0	0	14.5	SSW	59	SW	3	12	14	5	4.2
Goodland	3645	[illegible]	[illegible]	90	56	73.7	-.2	104	6	46	19	18	0	49	50	1.35	-1.20	.81	8	11	.0	0	9.7	SSE	*30	ENE	11	14	9	8	4.6
Topeka	879	978.3	1013.4	92	67	79.6	2.0	106	16	45	21	20	0	62	60	2.35	-2.31	1.27	8	13	.0	0	11.3	S	45	S	29	13	9	9	4.9
Wichita	1321	964.8	1012.0	97	71	83.6	3.7	107	6+	48	21	27	0	56	44	.70	-2.26	.40	7	10	.0	0	14.0	S	42	N	6+	12	14	5	4.2
KENTUCKY																															
Lexington	979	[illegible]	1016.6	85	64	74.4	.9	94	5	51	21+	6	0	65	76	3.59	.22	1.66	7	5	.0	0	8.3	S		- -	--	11	15	5	4.9
Louisville	474	996.8	1015.8	85	65	75.2	-.9	96	5	50	22	5	0	65	73	4.03	.97	1.10	10	8	.0	0	7.6	SE	52	NW	13	10	14	7	5.3
LOUISIANA																															
Baton Rouge	64	1014.2	1017.0	93	71	81.7	1.0	99	9+	60	23	25	0	72	79	2.62	-3.25	.94	8	9	.0	0	6.0	W	--	---	-	8	13	10	5.8
Lake Charles	12	1014.6	1016.0	92	73	82.5	.2	97	3+	63	22	23	0	72	75	3.77	-.89	1.41	7	8	.0	0	5.4	S	*17	SSE	5+	9	11	11	5.8
New Orleans (U)	9	[illegible]	-	91		83.4	.0	97	8	70	22	21	0	--	-	3.24	-3.17	1.12	9	10	.0	0	4.5	- -	22	E	4	6	16	9	6.5
New Orleans	3	1014.6	1016.5	90	73	81.6	-.6	96	9	62	23	19	0	75	78	4.99	-.65	1.48	10	13	.0	0	5.7	SSW	*29	NE	4	9	14	8	5.5
Shreveport	252	1006.1	1015.3	96	72	84.1	.3	103	16	58	22	27	0	67	60	2.25	-.12	1.38	6	8	.0	0	8.7	S	--	---	--	14	11	6	3.9
MAINE																															
Caribou	621	989.8	1012.8	70	48	58.8	-3.0	82	7+	35	30	0	0	52	79	4.26	.73	1.39	13	7	.0	0	8.4	WSW	*33	W	19	3	18	10	6.4
Portland	61	1010.1	1014.0	78	53	65.5	-.9	88	10	44	25	0	0	56	72	1.58	-1.01	.64	10	0	.0	0	7.1	WSW	24	E	7+	8	12	11	5.7
MARYLAND																															
Baltimore (U)	14	--	-----	86	71	78.5	2.1	98	18	61	22	14	0	--	--	2.05	-2.33	1.15	6	-	.0	0	----	---	--	---	--		-	--	---
Baltimore	146	1011.1	1015.6	84	64	74.2	-.2	95	18	52	22	11	0	65	74	1.81	-2.57	1.38	8	1	.0	0	7.9	NW	25	NW	19	10	10	11	5.5
Frederick	294	------	- - -	86	71	78.5	2.1	98	18	61	22	14	0	--	--	2.05	-2.33	1.15	6	--	.0	0		---	--	--	--	--	--	--	---
MASSACHUSETTS																															
Blue Hill Obs. (R)	629	991.3	1014.3	79	60	68.1	.6	91	18	52	3+	1	0	--	72	1.37	-2.71	.61	10	1	.0	0	11.9	W	28	W	14	6	15	10	5.8
Boston	15	1009.2	1013.7	80	63	71.9	.4	93	18	56	25	4	0	59	67	1.46	-1.77	.58	10	1	.0	0	10.4	SW	*54	WNW	10	8	11	12	6.0
Nantucket	13	1014.0	1014.6	73	60	66.8	-.3	82	18	50	23	0	0	62	85	6.61	3.18	3.38	8	5	.0	0	12.6	WSW	47	N	7	10	8	13	5.9
Pittsfield	1153	973.4	------	77	54	65.3	-.5	88	17	41	3	0	0	--	--	1.94	-2.37	.45	11	3	.0	0	----	---	--	---	--	--	--	--	---
MICHIGAN																															
Alpena (U)	587	991.9	------	73	57	64.7	-1.1	85	8	43	20	0	0	--	-	3.22	.63	.73	11	6	.0	0	8.5	---	25	NW	9	8	15	8	6.0
Detroit	619	988.8	1014.9	80	62	71.2	-.1	90	28	50	24	1	0	61	72	6.53	3.91	3.65	14	9	.0	0	8.7	N	42	W	4	6	11	14	6.5
Detroit (Willow Run)	722	986.5	1014.4	81	61	71.1	.0	90	28	50	24	1	0	60	72	4.37	1.66	1.47	13	11	.0	0	9.6	SW	*35	W	11	8	8	15	6.2
East Lansing (U)	856	---	- -	80	60	70.0	1.0	91	4	48	20+	2	0	--	--	3.20	.52	1.19	14	11	.0	0	3.3	-	15	SW	30	-	--	--	---
Escanaba (U)	594	991.5	---- -	73	57	64.8	-.1	88	7	43	20	0	0	--	--	3.44	.55	1.38	13	8	.0	0	8.3	--	30	N	18	3	18	10	6.6
Flint	761	986.8	1014.5	79	58	68.5	.3	89	28	45	25	0	0	59	75	8.68	5.91	2.42	12	12	.0	0	6.2	S	*29	WSW	16	5	12	14	6.5
Grand Rapids	681	989.5	1014.5	79	59	69.3	-.4	93	4	43	25	1	0	60	73	1.19	-1.39	.37	7	8	.0	0	8.5	WSW	31	SW	22	4	8	19	7.3
Marquette (U)	677	985.8	-- -	71	57	64.0	-1.3	85	10+	48	20	0	0	--	74	2.76	.05	1.20	10	4	.0	0	6.4	---	20	SE	31	4	15	12	6.7
Muskegon	627	991.5	1014.7	77	60	68.8	.4	88	4	44	25	0	0	61	75	2.59	-.07	.88	11	8	.0	0	---	--	--	-	--	4	15	12	6.6
Sault Ste. Marie	721	992.2	1014.7	71	52	61.7	-1.2	84	8	39	20	0	0	56	84	2.87	.25	.88	11	5	.0	0	7.4	WNW	*23	NW	23	8	11	12	6.1
MINNESOTA																															
Duluth	1409	972.6	1013.9	73	52	62.2	-2.6	87	6	42	20+	0	0	54	79	4.72	1.29	1.47	13	12	.0	0	12.2	WNW	42	NW	7	8	9	14	6.5
Intern'l. Falls	1179	972.2	1013.1	74	49	61.7	-1.1	85	6	37	21	0	0	53	74	.97	2.35	.27	12	5	.0	0	8.5	W	--	---	--	7	9	15	6.3
Minneapolis	830	980.7	1013.8	81	61	71.2	-.3	90	27	45	20	1	0	59	69	5.22	2.43	3.22	10	7	.0	0	9.6	SW	40	S	29	11	8	12	5.4
Rochester	1017	977.3	1013.8	81	58	69.4	.0	93	27	40	20	3	0	60	74	6.00	2.52	2.53	11	9	.0	0	8.5	S	--	---	--	6	17	8	5.8
St Cloud	1034	975.6	1013.1	79	56	67.8	-.3	89	11	41	20	0	0	60	78	7.55	4.67	4.62	9	10	.0	0	5.8	W	--	---	--	10	7	11	5.7
MISSISSIPPI																															
Jackson	305	1004.8	1016.5	93	69	80.8	-.6	99	9	54	23	27	0	69	73	3.27	-.01	1.18	10	11	.0	0	4.8	S	34	NE	7	13	12	6	4.6
Meridian	294	1003.2	----	95	68	81.0	.5	100	7+	53	22	27	0	-		1.89	-1.83	.85	7	6	.0	0	----	---	-	---	-	17	7	7	4.1
Vicksburg (U)	231	1008.1	------	92	72	82.3	.8	97	7+	59	22	25	0	-		1.45	-1.26	.95	6	10	.0	0	6.4	--	26	NE	7	13	12	6	4.7
MISSOURI																															
Columbia	778	986.5	1014.5	91	66	78.2	2.0	101	4+	48	21	20	0	64	66	2.34	-1.55	.83	6	9	.0	0	8.8	SSE	43	NW	9	16	10	5	4.2
Kansas City	741	980.0	1013.9	92	71	81.4	2.4	104	16	53	21	23	0	62	55	3.29	-.60	1.16	9	9	.0	0	11.7	S	43	WNW	8	13	11	7	4.6
St. Joseph	809	----	--- -	91	67	78.9	.8	100	17	45	21	21	0	-	-	2.50	-1.23	1.52	11	11	.0	0	10.7	---	*52	SSW	28	12	11	8	4.8
St Louis (U)	465	994.9	----	88	70	79.3	.7	100	18	57	21	14	0	--	--	2.10	-1.67	.72	10	12	.0	0	10.5	--	42	S	29	14	12	5	4.4
Springfield	1265	968.2	1014.8	92	67	79.2	2.7	103	17	49	21	22	0	64	66	1.27	-2.74	.43	7	8	.0	0	13.3	S	46	NW	13	15	10	6	3.9
St. Louis	552	994.9	1015.1	90	69	79.3	1.6	100	18	53	21	20	0	65	65	1.53	-2.02	.86	7	9	.0	0	8.0	S	--			11	12	8	5.2
MONTANA																															
Billings	3568	892.3	1014.1	82	55	68.4	-2.6	94	23	41	31	9	0	47	49	.87	-.01	.31	8	7	.0	0	10.6	SW	47	NW	29	12	12	7	4.7
Butte	5530	832.4	1017.9	74	41	57.5	-2.5	88	14	32	31	0	1	40	--	2.02	.90	.85	14	14	.0	0	6.2	SSE	*32	W	9	12	12	7	4.5
Glasgow (U)	2277	940.1	1014.0	81	54	67.1	-1.8	97	24	37	19	7	0	47	55	2.03	.68	.88	10	10	.0	0	8.2	NW	*31	W	2	12	7	12	5.4
Great Falls	3664	889.6	1014.9	78	53	65.1	2.0	92	23	38	30	3	0	41	48	1.68	.48	.45	9	7	.0	0	12.2	SW	51	NW	1	15	2	14	4.9
Havre	2488	926.5	1014.6	81	52	66.5	-1.5	97	23	39	19	7	0	46	55	1.63	.57	1.00	9	7	.0	0	7.4	- -	33	NW	1	11	7	13	5.4
Helena	3893	875.4	1015.4	79	49	63.7	-2.1	93	23	32	31	4	1	44	53	1.43	.50	.66	11	10	.0	0	8.1	WSW	40	NW	7	13	10	8	4.4
Kalispell	2965	- -	---	79	46	62.1	-1.9	91	22	34	4	4	0	--		1.93	.82	1.02	8	10	.0	0	- -	---	--	---	--	14	10	7	4.2
Miles City	2629	921.8	1014.8	84	58	70.8	-1.5	99	24	45	31	15	0	49		1.52	.42	.42	12	12	.0	0	10.9	SE	*37	WSW	27	10	14	7	4.9
Missoula	3200	903.5	1016.8	78	48	63.1	-3.0	92	14+	40	4+	5	0	44	56	1.00	.22	.30	10	8	.0	0	6.5	NNW	58	SW	15	14	8	9	4.4
NEBRASKA																															
Grand Island	1841	947.9	1012.8	88	63	75.3	-.9	100	15	48	19	14	0	57	57	.77	-1.62	.20	10	10	.0	0	11.8	SE	--	---	-	11	9	11	5.1
Lincoln (U)	1166	---	---- -	90	67	78.4	1.5	101	4+	52	19	18	0	--	--	3.96	.88	2.37	10	11	.0	0	9.8	---	64	SW	30	8	13	10	5.5
Norfolk	1541	958.3	1013.2	88	62	74.7	.8	101	3	48	19	14	0	57	57	2.11	-.76	1.04	12	14	.0	0	----	---	--	---	-	5	16	10	5.9
North Omaha	1323	966.1	-	86	64	74.6	--	98	26	49	19+	9	0	--	--	3.72	----	.90	13	14	.0	0	- --	---	--	-	--	-	--	--	---
North Platte	2779	915.7	1012.7	86	58	71.6	-2.1	98	15	42	31	11	0	57	66	2.04	-.07	.55	11	11	.0	0	8.0	SE	42	NE	1	12	11	8	5.0
Omaha	978	974.3	1013.5	88	65	76.8	1.1	98	4+	52	19+	14	0	63	66	3.52	.40	1.11	12	13	.0	0	10.0	SSE	47	N	16	10	15	6	5.0
Scottsbluff	3950	879.8	1012.9	84	55	69.4	-3.0	94	14	42	31	10	0	50	58	.29	-.93	.09	7	8	.0	0	9.0	E	--	-	--	10	13	8	5.2
Valentine (U)	2587	922.8	-	85	57	70.7	2.4	97	15	41	31	9	0	--	-	3.38	1.38	1.21	12	13	.0	0	9.3	---	65	NW	10	9	12	10	5.4
NEVADA																															
Elko	5075	846.3	1014.7	86	41	63.8	-3.8	94	13+	32	3	10	1	32	33	T	-.29	T	0	0	.0	0	5.0	WSW	*23	SSE	16	20	10	1	2.8
Ely	6257	811.4	1014.9	84	42	62.9	-3.4	89	22+	32	31	0	1	22	23	T	-.89	T	0	4	.0	0	10.7	---	34	W	25	17	12	2	3.1
Las Vegas	2162	945.1	1008.8	102	71	86.2	-2.2	108	23+	65	4+	31	0	25	12	.00	-.53	.00	0	0	.0	0	11.7	SW	*30	SW	25	26	5	0	1.3
Reno	4397	863.2	1015.1	86	43	64.8	-2.6	93	22	37	2+	4	0	37	40	T	-.23	T	0	1	.0	0	5.4	WNW	31	SW	19	26	4	1	1.6
Winnemucca	4299	868.3	1013.7	87	46	66.6	3.1	95	22	33	3	15	0	29	27	T	.18	T	0	1	.0	0	7.5	W	36	E	17	22	8	1	2.4
NEW HAMPSHIRE																															
Concord	339	1003.3	1014.2	80	53	66.3	.2	93	17	40	25	2	0	57	74	2.08	1.02	.68	8	2	.0	0	5.9	NW	40	NE	8	7	15	9	5.8
Mt Washington	6262	807.8	-	50	40	45.2	-2.5	61	17	30	2	0	3	--	95	10.54	4.39	2.71	17	2	.0	0	26.3	W	%84	WNW	28	2	5	24	8.4

See footnotes at end of table

Table 2–Continued

State and station	Elevation (ground)	Pressure		Temperature								No. of days				Precipitation			No of days		Snow, Sleet		Wind		Fastest mile			No of days (sunrise to sunset)				
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In.	In	M p. h.		M p h			0–3	4–7	8–10	0–10	%
NEW JERSEY																																
Atlantic City (U)	8	1012.5	------	79	68	73.5	0.4	92	19	59	22	2	0	-	-	3.25	-1.47	1.26	6	3	0.0	0	14.0	-	41	E	21	11	11	9	5.0	64
Newark	11	1013.4	1014.7	82	65	73.7	.6	95	18	55	26	5	0	62	70	3.08	-1.11	1.31	8	2	.0	0	7.9	SW	•24	NNW	28	8	15	8	5.8	
Trenton (U)	56	1007.7	1014.5	83	65	73.9	.7	93	28	54	22	4	0	-	-	3.73	-.86	1.66	8	2	.0	0	7.1	--	29	N	28	10	12	9	5.1	65
NEW MEXICO																																
Albuquerque	5310	850.0	1011.5	90	63	76.3	-.6	99	10	55	25	14	0	44	37	.62	.76	.30	8	10	.0	0	8.0	SE	43	SE	12	19	10	2	3.3	84
Clayton	4969	846.6	1011.5	87	58	72.3	-.6	97	8	49	31	13	0		--	3.01	1.00	2.90	5	10	.0	0			--	-	-	14	9	8	4.5	
Raton	6379	809.0	1014.2	83	50	66.7	-.7	95	10	43	22+	5	0		--	1.45	1.04	.80	11	16	.0	0	--	---	-	-	-	8	15	8	5.3	
Roswell	3612	893.7	1011.9	94	63	78.3	.3	103	9	56	29	25	0	52	46	1.13	-.32	.37	6	11	.0	0	9.5	-	45	N	21+	14	12	5	4.2	
NEW YORK																																
Albany	277	1010.3	1014.1	81	57	69.0	.6	92	9	46	3	2	0	58	70	2.76	-.13	1.70	10	3	.0	0	7.1	S	32	W	28	9	14	8	5.7	74
Binghamton	1601	956.6	1015.0	75	57	66.1	.5	85	17	46	22	0	0	57	76	4.41	.75	1.39	9	8	.0	0	8.3	WSW	38	SW	28	3	17	11	6.8	63
Buffalo	693	987.6	1014.9	78	60	69.0	.1	86	17+	49	3+	0	0	60	76	5.89	3.35	1.50	13	9	.0	0	11.1	SW	40	W	23	2	12	17	7.1	59
New York (U)	10	1013.4	------	81	67	73.8	.6	91	28	59	21+	2	0	--	-	2.85	-1.49	1.20	10	3	.0	0	10.8	--	59	W	28	11	12	8	5.3	70
New York	19	1012.9	1014.9	82	68	75.0	.6	92	18+	60	21	4	0	62	66	3.06	-1.21	1.09	10	3	.0	0	11.0	WNW	43	NW	28	7	16	8	5.8	-
Rochester	543	995.2	1014.4	78	58	68.2	-.7	88	31	46	3	0	0	59	75	5.67	3.19	1.15	11	8	.0	0	10.8	SSW	42	W	23	4	15	12	6.7	59
Schenectady	217	------	------	80	60	69.9	-.5	90	9	49	26	1	0	-	-	2.59	-.68	1.42	11	2	.0	0	--				--	18	11	2	3.3	-
Syracuse	424	993.1	1014.9	79	59	69.2	1.1	90	31	48	22	1	0	59	72	8.41	5.32	3.90	12	5	.0	0	7.4	WSW	34	S	23+	3	16	12	6.3	64
NORTH CAROLINA																																
Asheville (U)	2203	------	-----	85	62	73.5	.8	91	9+	53	23	5	0		-	1.38	-2.20	.49	7	9	.0	0	5.2	-	24	NW	19	8	18	5	5.4	76
Charlotte	725	988.8	1016.4	92	68	79.8	2.5	102	6+	59	23+	22	0	67	72	2.47	1.89	1.40	8	8	.0	0	7.3	SSW	38	N	18	8	12	11	5.5	68
Greensboro	891	985.4	1016.9	88	66	77.0	1.2	97	13	56	23	16	0	66	74	4.76	.05	2.09	9	9	.0	0	6.5	SW	39	W	18+	12	8	11	5.4	76
Hatteras (R)	4	1015.2	1015.8	83	73	77.7	-.6	87	30	67	1+	0	0	72	83	5.16	.67	2.33	9	10	.0	0	12.9	S	36	NW	6	9	10	12	5.5	76
Raleigh	433	1002.5	1016.2	88	66	77.2	.0	96	6	57	23	15	0	68	78	1.31	-3.65	.59	8	8	.0	0	7.4	S	•25	WNW	19	10	10	11	5.5	76
Wilmington	30	1015.0	-----	89	70	79.6	.3	97	6	61	23	14	0		--	5.01	1.39	1.63	10	11	.0	0	9.5	--	34	SW	5	12	13	6	4.5	73
Winston-Salem	967	981.8	1016.6	89	67	77.6	1.4	98	13	57	22+	17	0	64	69	2.05	-2.05	.97	7	8	.0	0	6.7	SW	•21	WNW	18	13	8	10	5.2	--
NORTH DAKOTA																																
Bismarck	1650	953.9	1013.5	81	54	67.7	-1.6	94	15	38	20	2	0	53	64	2.93	1.43	1.34	13	9	.0	0	9.4	WNW	57	W	27	11	12	8	5.3	73
Devils Lake (U)	1471	960.4	------	79	53	65.9	-.9	92	15	39	20	2	0			3.05	.88	1.92	11	6	.0	0	6.8	---	42	N	16	8	14	9	5.2	71
Fargo	895	980.0	1013.3	81	57	68.5	-.6	95	15	42	19	4	0	55	68	1.75	.98	.72	11	7	.0	0	12.1	N	62	SE	30	12	7	12	5.4	53
Williston (U)	1877	946.8	1013.4	81	55	67.9	-.2	93	24	39	19	5	0	50	57	1.03	-.38	.37	10	4	.0	0	6.4	---	29	SE	25	7	15	9	5.6	68
OHIO																																
Akron	1210	978.5	1016.5	79	60	69.5	-1.1	90	5	48	21+	1	0	60	77	6.12	2.86	1.85	11	8	.0	0	10.2	SW	--	-		7	12	12	6.3	--
Cincinnati Obs.	761	-----	------	85	64	74.6	-.2	96	5	52	21+	6	0	-	-	2.73	-.65	.92	9	6	.0	0	4.0	---	21	W	19			--	-	74
Cincinnati	869	984.4	1016.1	84	63	73.6	.1	94	5	50	25	4	0	63	73	2.91	-.43	.85	8	5	.0	0	7.8	SW	•27	SSW	23	7	12	12	6.0	--
Cleveland	787	987.6	1015.3	80	63	71.7	-.2	89	16+	51	25	0	0	61	74	5.14	2.50	1.17	13	8	.0	0	11.4	S	61	W	18	7	10	14	6.4	53
Columbus (U)	724	------	------	83	64	73.6	-.2	95	5	52	22	3	0		-	2.62	-.39	.61	11	4	.0	0	---	--	-	-	-		--	--	-	--
Columbus	815	986.4	1016.2	85	62	73.3	.9	96	5	47	22	8	0	62	73	2.23	-.98	.61	11	10	.0	0	6.7	S	31	SW	31	6	16	9	5.7	69
Dayton	1002	980.0	1016.0	83	64	73.0	.1	94	5	52	21+	3	0	62	71	2.75	-.11	1.10	9	9	.0	0	9.3	SSW	33	SW	23	6	9	16	6.5	69
Sandusky (U)	603	993.0	------	82	65	73.6	.8	92	31	53	25	4	0	-	--	6.96	4.15	1.52	8	9	.0	0	6.1	--	42	W	18	9	12	10	5.4	61
Toledo	676	990.0	1015.1	81	61	71.0	---	92	5	47	25	3	0	62	77	5.18	----	1.86	9	10	.0	0	9.5	W	34	SW	23	7	10	14	6.2	67
Youngstown	1178	974.0	1016.2	80	60	69.6	-.8	88	28	47	22	0	0	60	77	7.86	4.40	2.79	11	10	.0	0	9.8	SSW	•44	W	18	3	16	12	6.7	--
OKLAHOMA																																
Oklahoma City	1280	970.2	1013.0	99	70	84.4	2.4	107	15+	51	21	27	0	56	43	.86	-1.64	.64	4	5	.0	0	13.7	S	49	SW	28	19	10	2	3.2	90
Tulsa	672	988.8	1012.8	100	73	86.8	4.9	109	5+	56	21	27	0	58	42	.30	-2.93	.29	2	4	.0	0	10.6	S	42	SW	9	14	12	5	4.0	81
OREGON																																
Astoria	8	1018.6	1019.3	67	53	59.9	-1.9	75	31	46	4+	0	0	55	84	2.15	7.00	1.64	9	1	.0	0	6.3	NW	-	-	--	6	12	13	6.7	--
Burns (U)	4140	874.7	1015.6	82	50	65.6	-1.6	93	21+	38	3	5	0	38	40	.43	.16	.17	5	7	.0	0	---	---	-	---	--	20	6	5	3.4	-
Eugene	361	1005.1	1018.5	80	51	65.2	-.8	93	21	44	17	1	0	-	--	.47	.09	.40	3	1	.0	0	7.2	---	--	---	-	12	11	8	4.7	--
Meacham	4050	------	------	75	49	62.0	-.6	94	22	38	2	2	0	--	--	1.33	.91	.93	7	4	.0	0	- -	---	--	---	--	18	6	7	3.6	--
Medford	1312	969.5	1016.8	87	52	69.3	-1.8	97	31	44	3+	14	0	49	54	.32	.13	.32	2	2	.0	0	5.9	WNW	•48	SSE	20	18	12	1	2.8	-
Pendleton	1492	962.4	1015.4	85	58	71.5	-1.2	102	22	50	30	11	0	44	42	1.00	.67	.56	6	3	.0	0	10.5	SE	•37	W	29	20	5	6	2.9	--
Portland	21	1012.5	1018.0	76	55	65.4	1.9	93	12	48	28+	1	0	55	73	2.56	1.95	1.32	6	2	.0	0	7.4	NW	22	NW	25	12	8	11	5.5	52
Roseburg	505	999.3	1017.6	82	51	66.4	-.4	95	21+	41	2	7	0	--	--	.26	-.06	.26	2	1	.0	0	5.7	--	22	N	8	14	10	7	4.0	74
Salem	195	1010.5	1018.1	80	50	65.2	-1.8	95	21	42	30	4	0	53	68	.37	-.12	.24	3	2	.0	0	7.0	S	-	---		13	10	8	4.8	--
Sexton Summit (R)	3836	-----	------	74	50	61.8	1.9	85	31	38	2	0	0	--	--	.07	-.22	.07	2	2	.0	0	---	---	-	---		19	9	3	2.8	-
PENNSYLVANIA																																
Allentown	376	1001.7	1015.7	81	61	70.8	1.0	90	17+	48	22+	3	0	62	76	3.56	-.93	1.11	11	3	.0	0	7.8	WSW	--	- -	-	7	15	9	5.7	-
Harrisburg	335	1001.7	1015.4	82	63	72.4	-.6	91	18+	52	22+	3	0	61	71	3.48	.14	1.49	8	4	.0	0	5.6	W	30	NW	28	10	10	11	5.5	73
Philadelphia (U)	26	------	------	83	69	75.9	.7	92	18	60	22+	6	0		--	2.63	-1.99	----	6	--	.0	0	- -	-	-	- -	--				---	--
Philadelphia	10	1010.4	1014.7	83	65	74.1	.1	93	18+	53	22	4	0	63	70	2.79	1.79	1.53	7	0	.0	0	8.1	SW	26	NW	19	10	8	13	5.7	64
Pittsburgh (U)	749	------	------	82	64	72.9	-.2	92	17	51	22	2	0		--	5.28	2.20	3.34	10	-	.0		- -	-			-	-	--	--	---	53
Pittsburgh	1151	985.7	1016.3	80	62	70.8	.7	89	5	46	22	0	0	61	74	5.07	1.94	3.06	11	8	.0	0	9.2	WSW	•46	NW	5	4	15	12	6.7	60
Reading (U)	266	1003.1	1014.6	83	65	73.6	.2	94	28	54	22+	3	0	--	-	3.30	-.58	1.65	9	4	.0	0	7.8	-	34	N	12	9	13	9	5.5	67
Scranton	940	980.7	1015.8	78	57	67.9	-2.1	88	18	44	22	0	0	59	74	3.03	1.05	1.47	15	10	.0	0	5.6	SW	50	NE	28	6	16	9	6.4	55
Shippingport (U)	736	------	------	80	59	69.4	---	88	5+	40	24	0	0	--	--	5.63	---	3.30	9	6	.0	0	1.7	- -	%55	NW	5	-		--	6.3	--
Williamsport	527	996.7	------	81	59	70.0	-.9	90	17	47	3+	1	0		-	4.09	.48	.97	15	--	.0	0	-	---	--	-	-	3	16	12	6.4	-
RHODE ISLAND																																
Block Island	110	1009.8	1014.0	75	63	69.0	.0	85	18	54	23	0	0	-	--	1.63	-1.83	1.05	10	4	.0	0	-	---		-	-	9	14	8	5.4	-
Providence	55	1008.3	1014.3	80	61	70.5	1.1	92	18	49	23	1	0	60	72	.91	-2.72	.53	7	3	.0	0	9.5	SW	•24	NNE	7	9	11	11	6.0	63
SOUTH CAROLINA																																
Charleston (U)	9	------	------	89	75	81.9	.9	99	6	67	22	14	0		-	4.24	-2.30	2.45	9	11	.0	0	---	- -	24	NW	2	18	5	8	4.4	79
Charleston	41	1015.1	1017.0	89	70	79.3	-.3	97	6	64	22+	15	0	72	83	5.97	-.64	2.05	7	14	.0	0	8.8	S		---		11	12	8	5.2	--
Columbia	217	1007.4	1015.6	94	70	81.9	1.9	104	6	64	22+	24	0	69	72	1.77	-3.76	.75	11	11	.0	0	6.9	SW	•21	SW	11	13	11	7	4.7	83
Florence	146	1010.6	------	93	70	81.2	1.9	99	6	64	22+	25	0	--	--	4.22	-.56	1.92	12	15	.0	0	- -	- -	--	---		13	11	7	4.4	--
Greenville	1018	979.3	1015.9	90	68	79.0	1.8	98	13	61	23+	21	0	64	66	1.94	2.86	1.58	5	7	.0	0	9.5	W	29	NW	20	9	12	10	5.6	69
Spartanburg	801	------	------	91	69	79.8	2.1	101	6	60	23	21	0	--	--	2.69	-2.00	1.13	7	8	.0	0	7.0		•37	WNW	31	--	-			-
SOUTH DAKOTA																																
Huron	1282	966.5	1013.1	83	59	71.0	-1.9	90	3+	47	20	4	0	60	73	5.47	3.49	4.15	13	13	.0	0	9.5	SSE	56	S	2	8	14	9	5.5	72
Rapid City	3165	901.8	1014.0	82	57	69.5	-1.4	92	3	47	21+	7	0	50	53	3.15	1.59	.69	13	14	.0	0	9.0	NW	42	NW	7	11	12	8	5.0	61
Sioux Falls	1420	962.8	1013.3	83	59	71.0	-1.4	96	3	44	20	7	0	58	68	4.09	.81	1.13	16	13	.0	0	8.4	SE	•52	WNW	12	9	12	10	5.7	--
TENNESSEE																																
Bristol	1519	963.7	------	86	62	74.1	.5	94	18	47	22	7	0	-	--	2.60	1.29	1.37	11	6	.0	0	--	-		---	--	10	10	11	5.7	--
Chattanooga	670	989.2	1016.3	91	67	79.1	1.8	102	13	55	22+	20	0	66	73	4.50	.80	2.22	8	11	.0	0	5.6	S	46	NW	18	10	11	10	5.4	68
Knoxville	950	981.7	1017.0	89	68	78.4	1.4	97	18	53	22	19	0	65	68	1.45	-1.98	.36	8	7	.0	0	7.2	WSW	46	S	11	9	10	12	5.5	64
Memphis (U)	271	------	------	91	73	82.0	1.7	99	17	57	21	23	0	-		3.13	.60	1.70	6	-	.0	0	-- -	---	--	---	-	--	--	-	-	--
Memphis	263	1001.6	1016.1	95	71	82.5	2.2	103	6+	56	22	25	0	65	64	2.48	-.46	1.64	5	4	.0	0	8.6	SSW	37	N	10	16	8	7	4.5	75
Nashville	577	996.8	1016.5	92	68	79.8	1.1	100	5+	53	22	22	0	67	70	1.89	-1.42	.54	10	10	.0	0	7.1	S	45	NW	14	11	10	10	5.2	79
Oak Ridge (R)	905	983.9	------	88	66	77.0	.4	97	12+	51	22+	14	0	--	-	2.08	-1.98	.75	8	10	.0	0	---	--	34	-	13	9	13	9	5.3	
TEXAS																																
Abilene	1759	953.3	1012.5	97	73	85.1	2.3	105	30	57	21	28	0	55	40	.55	.54	.55	1	3	.0	0	11.8	SSE	42	N	8+	24	4	3	2.7	79

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)
												No. of days							No. of days		Snow, Sleet				Fastest mile						
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	
	Ft.	Mb	Mb.	°F.	°F.	°F.	°F.	°F.		°F.		#		°F	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10
TEXAS (Cont'd.)																															
Amarillo	3590	889.9	1012.0	91	63	77.2	0.6	98	8+	49	21	25	0	50	45	0.79	-2.20	0.50	4	5	0.0	0	14.9	S	45	NE	31	17	7	7	3.8
Austin	615	993.2	1014.6	98	74	85.9	1.4	104	15+	65	22+	28	0	65	57	1.21	-.46	.81	4	2	.0	0	10.2	S	26	SE	19+	14	14	3	4.0
Brownsville	16	1012.2	1014.5	92	74	82.9	-1.2	94	9+	68	22	26	0	73	78	.57	-1.88	.48	2	3	.0	[illegible]	13.9	SSE	29	S	28	12	15	4	4.5
Corpus Christi	41	1013.9	1014.7	93	76	84.5	.5	97	19	70	26	29	0	73	74	1.33	-.75	1.24	3	1	.0	0	12.0	SSE	31	SW	31	13	13	5	4.5
Dallas	487	995.9	1014.1	100	77	88.3	2.5	109	5	63	21+	29	0	62	47	.86	-.97	.83	3	3	.0	0	9.9	SSE	34	SE	30	21	8	2	3.3
Del Rio	1091	979.3	1012.7	100	75	87.2	2.1	105	30	68	22	30	0	62	47	.25	-1.19	.25	1	2	.0	0	11.9	---	45	N	19	19	11	1	3.0
El Paso	3920	886.9	1012.1	92	68	79.9	.1	100	9+	63	18+	22	0	50	40	.61	-.71	.44	5	11	.0	0	10.8	SSE	45	N	24	15	12	4	3.9
Fort Worth	544	993.6	1013.8	101	75	88.0	2.6	107	6	61	22	29	0	60	44	.23	-1.65	.19	3	5	.0	0	12.2	S	*50	SE	30	23	7	1	2.5
Galveston (U)	7	------	---	88	79	83.4	-.2	91	14	71	26	6	0	--	--	1.86	-1.69	1.35	8	--	.0	0	11.5	---	31	SE	27	--	--	--	---
Galveston	5	1013.9	1016.2	89	79	83.6	-.1	91	6+	71	27	14	0	73	72	1.64	-1.98	1.08	8	8	.0	0	11.7	S	--	---	--	10	14	7	5.3
Houston (U)	41	1010.5	-	93	76	84.7	.5	99	10	69	22	26	0	--	--	1.05	-2.04	.57	6	4	.0	0	8.1	---	23	SE	2	11	15	5	5.0
Houston	50	1012.9	1015.5	94	74	83.8	.9	100	4	67	23	26	0	71	72	.38	-3.74	.25	5	4	.0	0	9.4	SSE	--	---	--	9	14	8	5.7
Laredo	500	997.6	1012.6	101	76	88.6	.8	105	9	70	25	31	0	67	55	.51	-.79	.26	3	4	.0	0	13.5	SSE	*32	E	20	19	6	6	3.6
Lubbock	3243	903.5	1012.3	93	64	78.2	-.2	98	8	52	21	26	0	53	46	1.06	-.73	.74	4	3	.0	0	9.8	S	*46	SSE	[illegible]	18	11	2	3.2
Midland	2854	915.7	1012.8	94	69	81.2	-.2	99	30	60	20+	27	0	54	43	1.73	.08	1.52	2	4	.0	0	8.1	SSE	*21	SE	2+	19	9	3	3.2
Port Arthur	16	1014.9	1016.3	92	73	82.4	.6	98	4	62	22	23	0	73	77	2.32	-2.82	1.15	6	8	.0	0	9.1	S	41	S	28	7	16	8	5.8
San Angelo	1903	947.2	1013.0	97	72	84.3	1.1	103	30	61	22	28	0	55	40	.75	-.84	.72	2	3	.0	0	10.2	S	*25	ESE	7+	20	11	0	2.6
San Antonio	792	989.8	1014.3	96	73	84.8	.4	101	15+	65	22	29	0	65	57	3.94	1.96	2.32	6	4	.0	0	9.3	SSE	40	S	6	16	10	5	3.9
Victoria	110	1010.2	1014.7	96	75	85.3	.0	100	15+	68	24	29	0	70	64	.41	-2.22	.26	2	0	.0	0	10.9	--	%36	SSW	28+	13	14	4	4.5
Waco	500	995.6	1013.9	99	75	87.0	1.5	105	15	64	23	29	0	64	50	.14	-1.24	.10	3	3	.0	0	13.9	S	--	---	--	15	10	6	3.9
Wichita Falls	1020	976.6	1012.3	101	74	87.5	3.3	107	16+	57	21	28	0	56	38	2.65	.58	2.42	3	5	.0	0	11.6	SSE	*40	SSW	18	22	8	1	2.7
UTAH																															
Milford	5028	845.6	1013.2	89	53	71.1	-.6	96	23+	44	8+	15	0	--	—	.03	-.78	.03	1	5	.0	0	----	---	--	---	--	19	7	5	3.2
Salt Lake City	4220	867.9	1012.5	89	57	72.7	-1.7	96	11+	45	28+	18	0	38	33	.03	-.94	.01	3	2	.0	0	10.4	SSE	28	S	2	18	8	5	3.3
VERMONT																															
Burlington	331	999.1	1013.5	77	56	66.7	-1.4	90	18	45	2+	1	0	55	68	2.00	-1.01	.43	15	0	.0	0	6.9	S	26	S	23	3	12	16	7.0
VIRGINIA																															
Lynchburg	947	982.5	----	86	63	74.8	.6	96	18	53	22	13	0	--	--	1.97	-2.38	1.05	8	8	.0	0	6.4	---	26	NE	5	11	13	7	5.1
Norfolk	26	1014.9	1016.1	86	69	77.3	.9	95	19	62	4+	11	0	68	77	5.04	-.04	1.70	11	11	.0	0	7.4	SSW	43	E	31	9	14	8	5.3
Richmond	162	1010.1	1016.1	87	66	76.5	.6	97	31	55	23	11	0	67	78	2.28	-2.77	.81	8	7	.0	0	6.5	S	33	NW	5	8	17	6	5.2
Roanoke	1174	975.1	1016.6	88	63	75.7	1.4	95	1+	49	22	19	0	62	68	2.58	-1.96	.97	9	5	.0	0	6.8	NW	--	---	--	5	16	10	5.9
WASHINGTON																															
Olympia	190	1010.8	1018.2	77	50	63.3	.4	91	12	39	28	2	0	51	68	.88	.22	.88	1	1	.0	0	6.6	SSW	*23	SSW	29	10	10	11	5.5
Seattle (U)	14	------	------	74	56	65.3	.1	87	12	50	3+	0	0	--	--	.61	-.26	.53	5	2	.0	0	7.3	---	21	SE	23+	12	9	10	4.7
Seattle	14	1017.3	1018.3	--	--	----	---	--	--	--	--	--	--	53	69	----	----	----	--	--	---	--	6.6	NW	--	---	--	--	--	--	---
Seattle-Tacoma	376	1004.7	1017.7	74	52	63.0	-.6	87	12+	46	3+	0	0	53	73	.76	-.12	.49	5	1	.0	0	10.2	SW	*23	NE	31	11	9	11	5.4
Spokane	2357	947.2	1015.4	81	55	67.6	-.3	96	14+	43	2	6	0	45	49	1.41	.92	.97	6	2	.0	0	6.7	SW	28	SW	23	16	7	8	4.1
Stampede Pass (R)	3958	882.2	1019.3	67	48	57.3	.7	87	22	37	1	0	0	--	--	1.32	-.76	.79	9	3	.0	0	----	---	--	---	--	17	2	12	4.4
Tatoosh	101	1015.9	1018.8	60	51	55.4	-.3	66	18	45	12	0	0	53	95	1.21	-.80	.75	10	0	.0	0	9.9	SSW	32	SW	13	4	6	21	7.7
Walla Walla (U)	949	979.3	1014.6	85	61	73.0	-1.2	103	22	52	3	12	0	—	--	1.52	1.18	.95	6	2	.0	0	----	---	--	---	--	21	4	6	3.1
Yakima	1061	976.3	1014.6	87	53	69.8	.3	99	13+	39	2	14	0	47	48	.10	-.12	.08	2	2	.0	0	6.7	NW	--	---	--	17	9	5	3.4
WEST VIRGINIA																															
Charleston	950	981.5	1016.4	83	63	73.1	-.5	91	5	51	22+	3	0	65	79	3.45	-1.10	1.77	8	5	.0	0	4.9	S	*25	W	18	2	21	8	6.3
Elkins	1970	------	------	78	56	67.0	-1.2	89	18	44	23	0	0	--	--	5.58	1.75	1.49	12	7	.0	0	4.7	---	34	NW	5	1	15	15	7.2
Huntington (U)	565	------	------	86	64	74.9	-.5	95	5	52	22	11	0	--	--	3.57	.20	1.09	9	--	.0	0	----	---	--	---	--	--	--	--	---
Parkersburg (U)	615	------	------	83	62	72.8	-1.2	93	5	49	22+	2	0	--	--	3.66	-.49	1.25	11	7	.0	0	4.9	---	27	SW	19	9	14	8	5.7
WISCONSIN																															
Green Bay	689	991.2	1013.9	77	57	66.8	-1.0	85	7	44	20	0	0	60	82	3.09	.06	.73	14	10	.0	0	7.7	SW	32	SW	22	6	8	17	6.8
La Crosse	652	989.2	1013.4	82	62	71.6	.2	92	4+	47	20	2	0	61	68	3.47	.18	.88	9	9	.0	0	6.8	S	*23	SW	29	5	16	10	6.3
Madison	857	979.7	1014.3	82	59	70.7	.0	95	4	44	20+	3	0	61	75	5.64	2.75	1.76	15	11	.0	0	8.5	SW	40	SW	4	5	12	14	6.6
Milwaukee	672	989.8	1014.5	79	61	70.1	.2	93	4	48	21	3	0	61	78	2.96	.34	2.00	15	10	.0	0	11.4	SSW	40	SW	22	4	16	11	6.5
WYOMING																															
Casper	5322	838.8	1012.4	82	52	67.0	-1.9	91	13+	36	31	4	0	36	41	.77	-.09	.42	6	7	.0	0	11.6	WSW	*37	NW	29	11	11	9	4.9
Cheyenne	6131	814.8	1014.0	78	51	64.7	-2.1	88	14	38	31	0	0	42	51	1.73	.12	.63	9	8	.0	0	11.6	[illegible]	45	NW	21+	9	13	9	5.5
Lander	5563	835.8	1012.0	82	52	67.2	-1.2	92	13	36	31	4	0	38	40	.39	-.21	.21	4	7	.0	0	6.8	---	52	SW	2	10	14	7	5.1
Sheridan	3942	885.2	1014.3	82	52	66.8	-1.8	94	24	42	31	10	0	43	49	1.40	.58	.99	9	8	.0	0	7.7	NW	51	NW	30	12	10	9	4.9
PACIFIC AREA																															
Canton Island	9	1009.8	1010.1	88	78	82.9	-1.3	90	25	74	12+	1	0	73	75	.89	-1.51	.28	8	0	.0	0	17.6	E	--	---	--	12	10	9	5.5
Hilo	31	1015.6	1017.3	82	68	75.2	-.2	85	8	64	22+	0	0	69	82	18.40	6.48	5.98	29	1	.0	0	7.9	WSW	*25	E	30	1	9	21	8.2
Honolulu	7	1016.6	1016.9	85	74	79.3	-.1	88	7	71	7+	0	0	66	66	.53	-.27	.28	3	0	.0	0	13.1	ENE	35	E	3	6	20	5	5.2
Koror (R)	94	1005.4	1009.1	87	75	80.9	.2	90	1	73	8+	1	0	76	88	18.95	4.10	2.44	27	6	.0	0	----	---	--	--	--	0	0	31	9.8
Lihue	115	1012.2	1017.5	85	73	79.0	.9	87	9	69	7	0	0	69	75	1.69	-.58	.41	20	0	.0	0	12.1	NE	25	NE	3	2	19	10	6.5
Majuro	10	1009.1	1009.5	84	77	80.5	--	87	11+	72	6	0	0	76	85	16.72	---	3.37	22	1	.0	0	----	---	--	---	--	1	9	21	8.3
Ponape (R)	118	1004.4	1009.8	88	72	79.6	-.4	91	31	69	5+	5	0	75	88	17.43	2.06	2.86	26	3	.0	0	----	---	--	---	--	2	6	23	8.5
Truk (Moen Is.)	8	1009.5	1009.8	86	75	80.6	.3	88	2+	73	8+	0	0	75	84	10.92	-1.68	3.00	25	1	.0	0	----	---	--	---	--	1	4	26	9.1
Wake Island	11	1013.5	1013.9	88	78	82.5	.0	89	14+	72	5	0	0	75	79	2.58	-6.32	.67	20	1	.0	0	14.3	E	--	---	--	7	17	7	5.5
Yap (R)	53	1007.1	1009.1	88	75	81.6	.0	93	13	72	21	10	0	76	84	11.41	-4.52	2.95	24	1	.0	0	----	---	--	--	—	0	0	31	10.0
WEST INDIES																															
San Juan (U)	47	---- -	------	85	76	80.4	-.1	91	17+	74	2+	3	0	--	--	4.58	-1.68	3.01	13	3	.0	0	----	---	--	---	--	--	--	--	----
San Juan, P.R.	15	1013.5	1015.7	88	73	80.6	---	92	27	70	24+	5	0	72	78	6.78	----	3.32	17	4	.0	0	11.3	ENE	80	NE	12	10	17	4	4.8
ALASKA																															
Anchorage	92	1005.4	1010.3	64	48	56.0	.4	73	12	41	24	3	0	47	69	1.60	-.96	.59	14	1	.0	0	4.1	S	*21	S	18	1	8	22	8.5
Annette	110	1013.9	1018.0	61	52	56.9	-1.1	73	12	46	[illegible]	2	0	53	87	17.76	12.50	4.68	21	0	.0	0	10.4	SSE	*31	SE	30	2	3	26	8.5
Barrow	22	1012.9	1013.6	35	28	31.4	-7.0	53	5	21	29	0	26	29	90	1.05	.25	.51	8	0	.4	T	16.7	NE	34	[illegible]	6+	0	7	24	8.7
Bethel	10	1006.1	1007.6	61	49	54.8	2.1	73	18	41	29	3	0	51	90	2.77	-1.25	1.31	15	0	.0	0	8.7	SSW	*25	SSW	5	0	2	29	9.3
Cold Bay	90	1005.1	1008.7	55	48	51.5	-.6	68	9	42	31	0	0	49	92	4.24	.27	1.19	20	0	.0	0	17.2	SSE	*40	WSW	28	0	4	27	9.5
Cordova	40	1010.2	1011.8	59	45	51.6	-1.8	67	7	32	31	0	1	49	90	9.48	-.24	1.25	24	0	.0	0	4.9	E	*23	SE	25+	2	1	28	9.2
Fairbanks	436	991.5	1008.7	65	47	55.8	.2	78	16	39	23+	7	0	50	82	2.22	-.04	.77	19	2	.0	0	7.5	N	*24	WSW	10	0	4	27	8.9
Juneau	15	1013.9	1014.8	59	49	54.0	-.2	71	13	42	13	2	0	50	86	9.99	4.83	1.90	25	0	.0	0	8.6	N	27	SE	20	1	1	29	9.6
King Salmon	44	1006.4	1008.3	63	46	54.6	.0	72	15	39	4	4	0	49	81	2.67	-1.34	.94	13	0	.0	0	9.4	SSE	*32	E	24	0	6	25	8.8
Kotzebue	10	1007.8	1008.2	55	44	49.5	-1.2	68	16	36	12	0	0	45	85	3.65	1.70	.98	12	0	T	0	12.1	WNW	*30	WNW	6	3	5	23	8.3
McGrath	334	995.9	1008.5	63	47	55.0	1.5	75	17	36	24	4	0	47	76	3.49	-.14	1.03	19	1	.0	0	4.6	S	*24	SSW	9	1	5	25	8.8
Nome	13	1006.8	1007.3	55	45	50.0	.9	70	18	35	1	1	0	46	85	5.78	2.02	2.38	17	0	.0	0	8.2	SW	37	SW	10	2	2	27	9.0
Northway	1713	947.5	1010.2	62	42	52.0	-1.7	72	16	30	24	5	1	--	--	.59	-1.22	.18	11	2	.0	0	----	---	--	---	--	0	6	25	8.6
St. Paul Island	22	1008.1	1009.1	50	42	46.1	-1.9	58	12	32	17	0	1	45	95	4.03	1.04	1.21	23	0	.0	0	----	---	--	---	--	0	1	30	9.6
Yakutat	28	1012.5	1013.7	58	48	52.9	.1	65	16	41	31	0	0	50	90	13.63	3.09	2.33	26	0	.0	0	8.6	ESE	*40	SE	20	0	2	29	9.7

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates.

% Peak gust.

a Maximum hourly average.

# Number of days maximum 70° or above for Alaskan stations.

Ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.

HEATING DEGREE DAYS

(Base 65°F.)

able 3

AUGUST 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
rmingham	0	0	0
bile	0	0	0
ntgomery	0	0	0
ARIZONA			
agstaff	134	185	127
oenix (U)	0	0	0
oenix	0	0	0
escott	0	0	0
cson	0	0	0
nslow	0	0	0
ma	0	0	0
ARKANSAS			
. Smith	0	0	0
ttle Rock	0	0	0
xarkana	0	0	0
CALIFORNIA			
kersfield	0	0	0
tshop	0	0	0
ue Canyon	50	93	77
rbank	2	2	0
reka (U)	246	525	515
esno	0	0	0
s Angeles (U)	0	0	0
s Angeles	0	0	53
t. Shasta (R)	59	90	83
kland	78	161	161
d Bluff	0	0	0
cramento (U)	0	2	0
cramento	0	2	0
ndberg (R)	13	35	0
n Diego	0	0	18
n Francisco (U)	182	420	366
n Francisco	84	189	280
n Jose	7	16	18
nta Maria	153	279	192
COLORADO			
lamosa	143	181	185
lorado Springs	33	35	29
nver	20	21	16
and Junction	0	0	0
eblo	13	13	0
CONNECTICUT			
idgeport	5	17	0
rtford	15	35	14
w Haven	14	32	18
DELAWARE			
lmington	1	2	0
DIST. OF COLUMBIA			
shington (U)	0	0	0
shington	1	1	0
FLORIDA			
alachicola (U)	0	0	0
aytona Beach	0	0	0
rt Myers	0	0	0
acksonville	0	0	0
y West (U)	0	0	0
iami (U)	0	0	0
iami	0	0	0
iami Beach	0	0	0
rlando	0	0	0
nsacola (U)	0	0	0
allahassee	0	0	0
ampa	0	0	0
st Palm Beach	0	0	0
GEORGIA			
thens	0	0	0
tlanta	0	0	0
ugusta	0	0	0
olumbus	0	0	0
acon	0	0	0
ome	0	0	0
avannah	0	0	0
IDAHO			
oise	33	44	0
ewiston	34	39	0
ocatello	43	50	0
ILLINOIS			
airo (U)	0	0	0
hicago (U)	2	4	
hicago	3	6	0
hicago University	5	8	
oline	13	13	8
eoria	6	6	11
pringfield	6	6	6
INDIANA			
vansville	4	4	0
t. Wayne	8	8	17
ndianapolis	7	7	0
outh Bend	23	25	18
IOWA			
urlington	9	9	0
es Moines	14	14	17
ubuque	18	21	36
eokuk (U)	6	6	
ioux City	9	9	25
KANSAS			
Concordia (U)	3	3	0
Dodge City	10	10	0
Goodland	24	24	0
Topeka (U)	1	1	0
Topeka	8	8	8
Wichita	5	5	0
KENTUCKY			
Lexington	8	8	0
Louisville	4	4	0
LOUISIANA			
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (U)	0	0	0
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	204	329	218
Greenville (U)	175	291	
Portland	63	125	71
MARYLAND			
Baltimore (U)	0	0	0
Baltimore	2	2	0
Frederick	0	1	0
MASSACHUSETTS			
Blue Hill Obs. (R)	31	66	
Boston	6	21	7
Nantucket	29	50	56
Pittsfield	51	118	88
MICHIGAN			
Alpena (U)	74	145	135
Detroit	11	11	8
Detroit (Willow Run)	15	18	10
East Lansing (U)	27	36	
Escanaba (U)	65	123	157
Grand Rapids	33	47	43
Marquette (U)	89	250	156
Muskegon	30	52	74
S. Ste. Marie	115	246	235
MINNESOTA			
Duluth (U)	116	269	157
Duluth	112	234	147
Internat. Falls	112	226	188
Minneapolis	22	31	25
Rochester	38	47	62
St. Cloud	42	69	85
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	7	7	6
Kansas City	0	0	0
St. Joseph	6	6	5
St. Louis (U)	0	0	0
St. Louis	0	0	0
Springfield	4	4	8
MONTANA			
Billings	50	57	28
Glasgow	66	100	44
Great Falls	77	117	74
Havre (U)	56	76	58
Helena	85	134	102
Kalispell	106	167	130
Miles City	44	45	17
Missoula	90	144	79
NEBRASKA			
Grand Island	14	14	6
Lincoln (U)	5	5	7
Norfolk	12	12	17
North Platte	31	31	18
Omaha	5	5	5
Scottsbluff	28	28	0
Valentine (U)	31	31	21
NEVADA			
Elko	77	100	34
Ely	82	118	66
Las Vegas	0	0	0
Reno	43	63	88
Tonopah	0	2	5
Winnemucca	38	47	17
NEW HAMPSHIRE			
Concord	50	100	68
Mt. Washington Obs.	608	1223	
NEW JERSEY			
Atlantic City (U)	0	1	0
Newark	2	11	0
Trenton (U)	2	10	0
NEW MEXICO			
Albuquerque	0	0	0
Clayton	22	22	0
Roswell	0	0	0
NEW YORK			
Albany	16	38	24
Bingnamton	44	95	79
Buffalo	13	25	46
New York (U)	2	11	0
New York	1	9	0
Rochester	27	46	43
Schenectady	9	23	
Syracuse	9	30	29
NORTH CAROLINA			
Asheville (U)	3	3	0
Asheville	0	0	
Charlotte	0	0	0
Greensboro	0	0	0
Hatteras (R)	0	0	0
Raleigh	0	0	0
Wilmington	0	0	0
Winston-Salem	0	0	0
NORTH DAKOTA			
Bismarck	48	65	66
Devils Lake (U)	49	97	108
Fargo	39	53	66
Grand Forks	47	82	
Pembina	41	41	
Williston (U)	58	98	71
OHIO			
Akron	27	32	17
Cincinnati (U)	1	1	0
Cincinnati	8	8	6
Cleveland	13	17	10
Columbus	8	8	8
Dayton	8	8	5
Sandusky (U)	1	1	0
Toledo	13	14	12
Youngstown	24	32	19
OKLAHOMA			
Oklahoma City	0	0	0
Tulsa	0	0	0
OREGON			
Astoria	150	288	249
Burns (U)	73	100	47
Eugene	50	96	67
Meacham	151	225	190
Medford	21	30	0
Pendleton	22	23	0
Portland (U)	29	46	27
Portland	47	69	47
Roseburg	36	66	
Salem	47	80	44
Sexton Summit (R)	135	232	157
PENNSYLVANIA			
Allentown	9	21	9
Harrisburg	0	7	0
Philadelphia (U)	0	4	0
Philadelphia	2	4	0
Pittsburgh (U)	6	6	0
Pittsburgh	19	23	20
Reading (U)	0	6	5
Scranton	29	57	18
Williamsport	11	21	16
RHODE ISLAND			
Block Island	11	26	27
Providence	13	26	26
SOUTH CAROLINA			
Charleston (U)	0	0	0
Charleston	0	0	0
Columbia	0	0	0
Florence	0	0	0
Greenville	0	0	0
Spartanburg	0	0	0
SOUTH DAKOTA			
Huron	19	20	26
Pierre	22	22	
Rapid City	37	38	56
Sioux Falls	27	27	37
TENNESSEE			
Bristol	5	5	0
Chattanooga	0	0	0
Knoxville	0	0	0
Memphis	0	0	0
Nashville	0	0	0
TEXAS			
Abilene	0	0	0
Amarillo	9	9	0
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio	0	0	0
El Paso	0	0	0
Ft. Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	0	0	0
Midland	0	0	
TEXAS (Cont'd.)			
Port Arthur	0	0	0
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Witchita Falls	0	0	0
UTAH			
Milford	0	0	0
Salt Lake City	12	12	0
VERMONT			
Burlington	46	87	66
VIRGINIA			
Lynchburg	5	5	0
Norfolk	0	0	0
Richmond	3	3	0
Roanoke	6	6	0
WASHINGTON			
Olympia	75	155	174
Seattle (U)	43	75	94
Seattle-Tacoma	89	159	145
Spokane	66	83	45
Stampede Pass (R)	273	512	511
Tatoosh Island (R)	294	594	583
Walla Walla (U)	15	15	0
Yakima	22	24	7
WEST VIRGINIA			
Charleston	7	7	0
Elkins	35	46	40
Huntington (U)	2	2	0
Parkersburg (U)	9	9	0
WISCONSIN			
Green Bay	46	92	90
La Crosse	16	20	31
Madison (U)	10	15	40
Madison	20	30	44
Milwaukee	18	45	52
WYOMING			
Casper	56	59	37
Cheyenne	69	88	72
Lander	48	57	30
Sheridan	62	69	68
ALASKA			
Anchorage	271	536	530
Annette	245	504	479
Barrow	1036	1837	1609
Bethel	308	571	707
Cold Bay	412	875	
Cordova	407	777	723
Fairbanks	278	413	445
Juneau	337	600	654
King Salmon	313	609	
Kotzebue	474	870	827
McGrath	303	490	563
Nome	462	936	970
Northway	394	646	536
St. Paul	577	1225	1119
Yakutat	367	713	759

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

AUGUST 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ILLINOIS West-central portion	1	Early morning					4	1	Electrical	Several lightning fires near Dallas City and Petersburg.
LOUISIANA Lake Charles (20 miles west of), Calcasieu Parish	1	Midmorning			0	0		1	Tornado	Funnel reported in sparsely inhabited area.
NEBRASKA Upland and vicinity, Franklin County	1	2:30-3:30 p.m.	9	*1			2	4	Hail	Hailstones 3/4 inch in diameter. Storm moved nort northeastward.
COLORADO Central City, Sedgwick, Pueblo, and Wetmore, Gilpin, Sedgwick, Pueblo, and Custer Counties	1	Early afternoon-evening					3		Rain	Heavy showers from mountains to eastern border did considerable damage. Heaviest damage at Pueblo and Wetmore, where several bridges washed away; roads closed until detours or repairs could be made.
KANSAS Marshall County	1	4:15 p.m.							Wind, hail, and electrical	Severe winds caused some tree and property damage. Local hail, some stones 1 inch in diameter, damaged crops and caused car damage. Most serious effects of storm east of Frankfort. Near Axtell 7 head of Hereford cattle killed by lightning. Lightning damage estimated at $1,900, wind and ha not estimated. Storm moved northeastward.
TEXAS Hopkins County	1	4:25-4:30 p.m.	2	200			4		Wind	Brief windstorm ripped about 5,000 feet of sheet-metal roofing from storage building at Crush, southeast of Sulphur Springs. Flying metal broke several feeder powerlines; 2 concrete-set power-line poles pulled out of ground. Storm moved southeastward.
IDAHO Eastern counties	1	Afternoon-evening					3		Hail and wind	Hail and wind damaged some grain in fields near Idaho Falls and also in Bingham County. About 11:30 p.m., lightning set fire to grain warehouse at McCammon, Bannock County, damage about $3,000.
MISSOURI Cameron, Clinton County	1	8:45 p.m.							Electrical, rain, and wind	1.66 inches of rain. Lightning set motel and barn on fire.
INDIANA Corydon (3 miles west of), Harrison County	1	10:30 p.m.					4	1	Electrical	Lightning killed 26 cattle.
MISSOURI Rolla area, Phelps County	1	Late evening							Wind, rain, and electrical	3 to 4 inches of rain 4 miles west of Rolla. Tele phone lines downed.
MISSOURI Kansas City, Jackson County	1						3		Wind	Wind gusts up to 60 m.p.h.
MISSOURI Blake, Jasper County	1						3		Hail, wind, and rain	Corn and soybeans damaged. Hailstones size of walnuts.
	1									Minor storms also reported near Red Rock, Ariz.; i Hancock, Madison, and Page Counties, Iowa; at St. Joseph and Trenton, Mo.; near Fortine and Joplin, Mont.; and in Richardson County, Nebr.
MISSOURI Grundy and Livingston Counties	1-2	P.m.-a.m.							Rain	3.50 to 7.50 inches of rain near Chillicothe. Loca flooding of lowlands. Many bridges and sections of roads flooded.
MISSOURI Nodaway County	1-2	P.m.-a.m.					3		Hail, wind, rain, and electrical	Hail size of golf balls near Barnard. Corn flattened by high winds.
NORTH CAROLINA Dare County	2	12:45-12:55 p.m.			0	0			Tornado	Observed and reported by Meteorologist in Charge, Norfolk, Va. Occurred on Roanoke Island a few miles south of Manteo over uninhabited and inaccessible land. Funnel observed moving eastward
SOUTH CAROLINA Mechanicsville community, Darlington County	2	Afternoon					4	1	Electrical	Lightning destroyed home.
NORTH CAROLINA Davidson, Guilford, Pitt, Rockingham, Sampson, and Wayne Counties	2	Afternoon-evening			1	6	4	4	Electrical, hail, and wind	15-year-old girl killed by lightning, 5 persons in jured in Wayne County. Man struck and injured in Sampson County. Crops damaged by patchy hail ove several counties. Wind damaged roofs and outbuildings.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

AUGUST 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ANSAS Oxford area, Sumner County	2	4:45 p.m.			0	0	3		Wind and tornado	A number of farm buildings, 2 to 4 miles north of Oxford damaged. Funnel aloft sighted by lineman 1 mile northeast of Oxford.
ONTANA Glacier, Toole, Pondera, Teton, and Chouteau Counties	2	5-7 p.m.	100	*40			6	6	Hail	Hail size of golf balls at Conrad resulted in $500,000 property damage. Storm moved northeastward.
OUTH DAKOTA Eastern portion	2	6:30 p.m.-midnight			0	0	4		Electrical, wind and tornadoes (suspected)	Intense lightning activity destroyed large hotel chimney at Huron, started residence fires at Doland, destroyed shed with 4,000 bales of alfalfa at Hayti. Funnel clouds sighted near Raymond and Huron. Winds tipped barn at Gregory.
	2									Minor storms also reported at Jamesport, Mo.; near Pontiac, S.C.; and in Harris County, Tex.
OLORADO Denver and Englewood, Denver and Arapahoe Counties	2-3	Evening-a.m.					6		Rain	South Denver and parts of Englewood flooded again for third time in 4 days. Heavy loss to businesses and residences. Damage includes storms of July 30 and 31.
INNESOTA Minneapolis-St. Paul-Anoka area, Hennepin, Ramsey, and Anoka Counties	3	A.m.						3	Rain, electrical, wind, and hail	Official 3.20 inches of rainfall in 24 hours. Numerous washouts and flooded basements. $5,000 lightning damage to St. Paul home. Many telephones out due to wet wires. Heavy rains general in central. Ponding in fields caused some crop loss. Many localities reported damage due to inadequate drainage. Winds at Anoka uprooted trees and demolished small building. Storm moved eastward.
OUTH DAKOTA Eastern portion	3	3-9 p.m.			0	1	4	2	Tornadoes, rain, and wind	Funnel cloud sighted north of Wessington Springs at 3 p.m. Tornado southeast of Parkston at 4:30 p.m., damaged farm outbuildings. 24-hour rain amount at Huron broke previous records, flooded basements causing 1 wall to collapse and resulted in a minor personal injury. Strong winds damaged farm buildings near Lennox and Canistota.
	3									Minor storms also reported at Savannah, Ga.; and at Bodcau Tower, La.
ICHIGAN (Lower)	3-4-5					2	5	1	Rain, wind, and electrical	Heavy rains caused flooding in Benzie County on the night of 3d, and in Flint and Detroit areas on 4th and 5th. 2 barns and 2 homes destroyed and several other buildings damaged by lightning. High winds also caused scattered damage.
OUTH DAKOTA Sioux Falls (south of), Minnehaha County	4	4:55 a.m.			0	0			Tornado	Touched ground and lifted immediately; moved eastward.
ICHIGAN New Boston (near) Wayne County	4	9:16 a.m.	Short	Narrow	0	0	3	1	Tornado and wind	Small tornado uprooted trees. Thunderstorms with high winds occurred nearby and caused considerable damage. Farmer in vicinity reported seeing funnel.
OWA Buena Vista to Clayton Counties	4	Noon-6 p.m.	200	*20		10	5	5	Hail, wind, rain, and electrical	Moved eastward during afternoon. Hail damaged crops in western third of path. Wind, rain, and lightning damaged buildings, utilities, and cars. Several persons injured by falling objects when storm struck fairgrounds.
RKANSAS Atkins and Pottsville areas, Pope County	4	Afternoon				1			Electrical and wind	Tractor shed unroofed; 1 man injured and saddle horse killed by lightning.
OUTH DAKOTA Perkins County and Black Hills	4	Afternoon-evening			0	0	3		Tornado and electrical	Funnel cloud near Hermosa at 4:40 p.m. Lightning started fires in Black Hills, killed cow and damaged powerlines in Perkins County.
ANSAS Frankfort (near), Marshall County	4	6-7 p.m.							Wind	Brief but violent wind unroofed barns and sheds, did some tree damage, and blew down a number of TV antennas. Storm moved northeastward.
ISCONSIN Madison (near), Dane County	4	9:50 p.m.					3	1	Wind	Localized winds estimated at 90 m.p.h.
	4									Minor storms also reported at Mobile, Ala.; at Viola, Ark.; in O'Brien County, Iowa; and in Robertson County, Ky.
EST VIRGINIA Weirton and vicinity, Hancock County	4-5	2 a.m. 4th-8 p.m. 5th						1	Electrical, rain, and wind	Small streams flooded, causing evacuation of 30 families and damage to a bridge; powerlines blown down.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

AUGUST 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
OREGON Scattered throughout State	4-5	Afternoon-night					3	4	Electrical, hail and rain	Thunderstorm that struck at a number of points over Oregon accompanied by fairly severe lightning and by heavy hail in a few scattered areas. Some heavy rain, but generally none or only insignificant amounts. Great many small forest and range fires started, but all extinguished with only small losses. A few power outages caused by lightning strikes, but total lightning and rain damage probably did not exceed $1,000. Heaviest losses to grain fields in Wallowa Count where a few farmers suffered nearly total losses and several other growers endured losses of lesser amounts. Storm moved eastward.
OHIO Liberty Township and Youngstown, Trumbull and Mahoning Counties	5	12:52-1:07 a.m.	2	150	2	0	5	1	Tornado, wind, and electrical	2 persons electrocuted when powerlines fell on their automobile. Tornado contained 3 parallel lines of destruction, northernmost of which was most destructive. Tore 1 home from its foundation and destroyed it; tore off several roofs; flipped over house trailer; collapsed concrete-block garage, damaging 2 autos and truck. Windows blown outward, utility poles and lines downed. Trees not uprooted along tornado path, in spite of very soft ground; they appeared to have been clipped or twisted off about half way up trunks. Lightning set 1 home on fire. Damage by tornado $50,000; other wind $95,000; lightning $5,000. Storm moved east-southeastward.
OHIO Cuyahoga, Lake, and Ashtabula Counties	5	1-4 a.m.			1		6		Wind, rain, and electrical	Rainfall of about 3 inches in 2 hours rapidly flooded streams in eastern Cleveland and suburbs 1 man drowned, 2 persons rescued from drowning, scores of motorists trapped by flood waters. Lightning struck 4 homes in Cleveland area and set fire to factory in Conneaut. Wind tore stee blades from generator windmill, tipped over seaplane at mooring, downed trees, poles, and utili lines affecting 5,000 homes for up to 21 hours. Local flooding reached armpit level on Oak Park Boulevard at peak of storm. Damage by lightning $190,000; wind $370,000; rain $340,000 included in total.
MARYLAND Keedysville, Washington County	5	A.m.						1	Electrical	Lightning struck steeple on church. No fire resulted, but considerable damage occurred to uppe section of structure.
WEST VIRGINIA Monongalia, Preston, Taylor, Marion, and Harrison Counties	5	A.m.-p.m.			1				Electrical, rain, and wind	Flash floods caused by showers of cloudburst proportions caused hundreds of persons to flee from their homes; 1 home washed away; 1 man drowned, trying to save his children, when swept away by swift current of Cheat River; roads temporarily closed by dirt slides and high water; many crops ruined from battering by heavy rain and flooding utility lines damaged by wind.
PENNSYLVANIA Western portion	5	Morning-evening			9		6		Rain, hail, electrical, and wind	Western Pennsylvania hard hit by 2 series of thunderstorms on same day, 1 which struck around daw bringing with it heavy rain which saturated much of ground. Second series came around dust bringing more heavy rain and some hail resulting in extensive flooding, causing over $1,000,000 damage in addition to taking 6 lives through drowning. Unestimated amount of crop damage resulted from pelting of rain and hail on higher elevatio and flooding of fields on lower elevations. Ligh ning severe and took its toll in houses, barns, and other buildings. In many cases buildings completely destroyed by fire. 3 persons electrocuted by lightning. 9 cows stricken in Mercer County while standing under tree hit by lightnin Wind damage to property great in Pittsburgh area.
KANSAS Norton area, Norton County	5	Afternoon							Hail	Hail caused considerable damage to crops in scattered places in area north and east of Norton.
OHIO Northeastern portion	5	Afternoon-evening					5		Wind and electrical	In Youngstown area, 3 small planes damaged at Bir Airport, 1 total loss and section of hangar blow down; store unroofed, service-station pumps damaged, school chimney knocked down, trees uproote and powerlines downed. In Cleveland, lightning struck apartment building, traveled down antenna lead, and set fire to 1 suite causing serious damage. In Akron-Canton area, trees and powerlines downed, mostly in Portage Lake and Fairmou Heights. Damage by wind $75,000 and by lightnin $5,000 included in the total.
VIRGINIA Richmond, Petersburg, and Newport News	5	Late afternoon				5			Electrical and hail	Power and telephone services crippled, roofs damaged, trees broken, several buildings struck by lightning. Storm contributed to traffic acciden in which 5 persons injured. Several hundred hom without power or telephone services for 6 to 24 hours. Some crop damage, chiefly tobacco in Dinwiddie County, where insurance claims amounte to more than $10,000. Storm moved southeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MINNESOTA Pinecreek, Roseau County	5	8:40 p.m.			0	0			Tornadoes (sus-pected)	2 funnel clouds reported, neither touched ground.
NORTH DAKOTA Stutsman County	5				0	0			Tornado	Tornado sighted by pilot.
	5									Minor storms also reported in Winneshiek County, Iowa; and in Hustisford, Lowell, and Watertown areas, Wis.
SOUTH DAKOTA Eastern portion	5-6	8 p.m.-6 a.m.				1			Electrical and wind	Lightning killed 4 cattle at Mound City, fired residence at White Lake, and basement of office building at Sioux Falls. Injury at Colman resulted from flying glass when tree fell against house.
MARYLAND Garrett and Allegany Counties	5-6	P.m.-a.m.							Wind, rain, and electrical	Intense thunderstorms and heavy rains resulted in local flash floods and damage to power- and telephone lines. Trees blown down over lines. Heavy rains caused serious erosion of roads and fields. Lightning, wind, and rain damaged telephone cables in some sections. Heavy rains in Pennsylvania and West Virginia disrupted rail traffic of Baltimore and Ohio and Western Maryland Railroads due to washouts.
MINNESOTA Airlie and Pipestone, Pipestone County	6	3 a.m.	21	*1-1/2					Hail, wind, electrical, and rain	Several corn fields stripped by 1/4 to 1/2-inch hail, others downed by high wind. Some small grain pounded, estimated 75 percent loss. Storm moved south-southeastward.
IOWA Lyon to Decatur Counties	6	4-9 a.m.	275	*40-60	1	1	6	6	Wind, hail, and rain	Destroyed crops, buildings, and utilities. Man killed when barn collapsed. Storm moved south-southeastward.
MISSOURI Princeton and Trenton, Mercer and Grundy Counties	6	9:15 a.m.							Wind, rain, and electrical	Many trees and power- and phone lines downed. Much damage to grain in fields by high winds.
MISSOURI Milan, Sullivan County	6	10-11 a.m.							Wind, rain, and electrical	.62 inch of rain in 1 hour. Many trees downed, windows broken, and farm buildings damaged.
MISSOURI Marceline, Linn County	6	11:20 a.m.							Wind and rain	Wind gusts up to 60 to 65 m.p.h. Trees downed.
MONTANA Utica, Moccasin, and Kolin areas, Judith Basin County	6	2-4 p.m.	25	*5			1	5	Hail	Hailstones up to 3/4 inch in diameter. Storm moved eastward.
IRGINIA Dinwiddie and Nottoway Counties	6	4 p.m.							Hail, electrical, and wind	Storm most severe between Jennings Ordinary and Amelia County line. Considerable hail damage to tobacco near Jennings Ordinary. Large barn burned by lightning. Roofs and awnings damaged.
OUTH CAROLINA Aynor, Horry County	6	Afternoon					4	3	Electrical, wind and rain	$24,000 wind, $1,000 rain, $1,000 electrical damage. Wind destroyed storage warehouse, damaged 2 barns and dwelling.
ORTH CAROLINA Halifax, Hertford, Johnston, Northampton, Robeson, and Wayne Counties	6	Afternoon-evening				2	4	4	Electrical, hail, and wind	2 men injured at tobacco barn near Fairmont by lightning. Mule killed in Northampton County, 2 in Wayne County. Hail damaged tobacco crop, wind damaged roofs and buildings. Barn burned by lightning.
YOMING Sundance, Crook County	6	4:30 p.m.	2	*1			5	3	Hail	Many hailstones as large as tennis balls. Storm moved southeastward.
EBRASKA Knox County (northeastern corner)	6	8:15 p.m.	1/4	70	0	0	3	1	Tornado	3 cattle killed. Boy 12 years old picked up, but not injured. Funnel observed moving northwestward.
	6									Minor storms also reported at Bono, Ark.; near Almena, Norton, and Russell, at Council Grove and Pratt, and in Marion County, Kans.; and at Newport News and Petersburg, Va.
OUTH DAKOTA Western and southern portions	6-7	3 p.m.-3 a.m.			0	0	5		Tornadoes, hail, and rain	Hailstorm formed in northern Black Hills, moved southeastward over Rapid City and Scenic. Some stones 2-1/2 inches across. Tornado developed as storms passed Kyle, reaching Martin at 7:15 p.m. Roof blown from hospital, several buildings destroyed, others damaged. Heavy rain developed after funnel dissipated. Another funnel sighted near Wasta at 2:30 a.m. Lightning caused major house fire at White Lake, minor damage at Vivian, and livestock killed at Clearfield.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	6-7									Minor storm also reported at Neodesha, Kans.
OKLAHOMA Edmond, Oklahoma County	7	3:15 p.m.			0	0	3	1	Dust devil	Business building had roof ripped off and plate-glass window broken.
OKLAHOMA Waurika, Jefferson County	7	4 p.m.	1-1/2	880	0	0	4		Tornado (suspected), wind, rain, hail, and dust	Severe winds accompanied by loud roar destroyed house, several barns, and outbuildings. Utility poles and TV antennas blown down. Hail up to 3/4 inch in diameter caused heavy damage to crops over 80-acre tract. Heavy dust obscured immediate storm area. Storm moved northeastward.
MICHIGAN Pickford (near), Chippewa County	7	Afternoon			0	0			Tornado	Funnel sighted aloft.
MISSISSIPPI Canton, Madison County	7	5-6 p.m.						2	Wind	High winds blew down trees and damaged powerlines.
MINNESOTA Rice and Staples, Benton and Todd Counties	7	6 p.m.	7	*7			3	4	Hail and rain	Hail, reported size of hens' eggs, damaged crops, dented cars, and punctured roofs. Some fields 100 percent loss. Some light hail damage also reported near Staples, Todd County. Storm moved eastward.
NEBRASKA Hamilton County	7	7:30-8:30 p.m.					1	5	Hail	Hailstones 3/8 inch in diameter, but numerous. Storm moved southeastward.
	7									Minor storms also reported in Guthrie and Monroe Counties, Iowa; at Dwight, Pleasanton, and Wichita, Kans.; at Lexington, Miss.; and in Center area, Nebr.
SOUTH DAKOTA Statewide	7-8	1 p.m.-3 a.m.			0	3			Tornadoes, hail, electrical, and wind	Funnel clouds reported southwest of Sturgis at 1:20 p.m., and east of Centerville at 11:45 p.m. At 2:45 a.m., tornado struck Sioux Falls Sioux Empire Fairgrounds, destroying 1 building and damaging others. Extensive hail in all parts of State, occasionally reaching baseball size near Hermosa, Bison, and Eagle Butte. In Perkins County, 3 persons bruised badly when caught in th open. Horses and antelope also injured. Automobiles damaged at other places. Lightning destr ed a house near Sisseton, extensively damaged 1 near Kimball, and caused minor damage to 1 at White. High winds hit Pierre and Aberdeen and damaged farm buildings near Presho and Ipswich.
MASSACHUSETTS Nantucket and coastal areas from Nantasket to New Bedford	7-8						4	1	Wind and rain	About $18,000 loss to boats damaged or sunk at Nantucket on 7th. Minor losses from washouts from heavy rains. Wind and rain damage to many summer cottages, and powerlines damaged by felle trees on Cape. Beach equipment swept into sea a Nantasket on 8th.
NEBRASKA Wilber, Saline County	8	1 a.m.					4	1	Electrical	Factory struck and set on fire.
MASSACHUSETTS Connecticut Valley area	8	2-4 p.m.			1		2	1	Electrical	Minor and spotty damage to buildings and communication lines by lightning. Worker at Westove Air Force Base killed by lightning.
KANSAS Central and eastern portions	8	2-11 p.m.			0	2	5	3	Tornadoes, electrical, wind, hail, and dust	Squall line development set off series of thunderstorms which moved eastward. Greater activity centered in Salina, McPherson, Emporia, Council Grove quadrangle, with occasional damages northward and eastward. Most storm damage resulted from wind in 6 or 7 counties in main storm area and from eastern Osage and Franklin Counties, and in Brown, Atchison, and Leavenworth Counties At 8:30 p.m., funnel cloud aloft sighted 4 miles west of Smoky Hill Air Base, Saline County; at 9:10 p.m., small funnel sighted aloft 5 miles southeast of New Cambria, Saline County; at 9:15 p.m., 1 at least, and perhaps several funnels, sighted in Morris County, where some damage by tornadic action and windows sucked out of houses at 9:12 p.m., near Elmdale house trailer and pickup truck struck by what was evidently small tornado, trailer broken loose from truck and raised into air high enough so that bottom of trailer visible, then carried approximately 200 feet and bashed against ground with complete loss Lightning quite severe over this area and numerou bolts caused varying amounts of damage, mainly to telephone and powerlines with some disastrous effect on appliances, 1 woman injured near Homewood, Franklin County. 6 fire alarms resulted from lightning strikes in McPherson. Severe win estimated at from 60 to 80 m.p.h., caused damages to many frame buildings, broke tree limbs resulting in power and telephone outages. Dust raised by wind reduced visibility greatly at a number o

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										places. In Ottawa chimney blown down and injured 1 man. Scattered hail damage resulted from heavy hail driven by high winds, especially over northern Morris County. Stones ranged in size from peas to golf balls. Hail damage to crops estimated at $5,000, to property $20,000; lightning damage to property $3,000, to livestock $500; wind damage to property $132,000.
MINNESOTA Wadena, Todd, and Otter Tail Counties	8	3:30 p.m.	6	*5			2	4	Rain, wind, and hail	Cut small grains total loss. Much corn damage. Unofficial rainfall up to 4 inches in 2-hour period. Hail damage to crops reported as $8,000; wind damage $10,000. Lightning resulted in $500 loss to property. Storm moved southeastward.
TEXAS Byers, Clay County	8	4:10 p.m.	2	50	0	0	3	1	Tornado, rain, and wind	Storm hit western section of town; rain covered entire town. Roof of school damaged, home lifted from foundation, TV antennas damaged, and windows smashed. Observer reported seeing funnel.
CONNECTICUT Andover, Tolland County	8	4:30-4:33 p.m.		50	0	0	1	1	Tornado (suspected), wind, rain, and hail	Small twister moving southwestward struck ground 1/2 mile south of Andover P.O. Large limbs of maple and oak trees split lengthwise and fell on powerlines. Lawn chairs, roof shingles, and similar objects blown up to 200 feet. Piece of wood on well-crib ripped off, although nailed in 4 places. Heavy rain, 3/4-inch hail, and winds sounding "like jet plane" within less than 5 minutes. Twister did not strike ground again. Radar showed cloud tops up to 42,000 feet in general storm area. Property diagonally across street not harmed.
ARKANSAS Romance, White County	8	Afternoon			1		1	1	Electrical	Man killed by lightning as he sought shelter under a tree.
SOUTH DAKOTA Pennington County	8	Afternoon					2		Hail	Hail from Rapid City to Wall occasionally reached golf-ball size. Locally heavy crop damage.
NEBRASKA Saline County (east-central portion)	8	5:30-7 p.m.	5	*2			2	4	Hail and wind	Corn blown down. Crop damage $5,000 by wind, $14,000 by hail. Area too wide for tornado. Storm moved southeastward.
WISCONSIN Fond du Lac area, Fond du Lac County	8	6 p.m.	5	*1		1	4	1	Wind	Railroad tower blown down. 1 person injured by falling pole when tents blown down. Storm moved eastward.
NEBRASKA Adams County (southern portion)	8	6-6:30 p.m.	24	*2			3	5	Hail	Hailstones 3/4 inch in diameter.
NEBRASKA Alliance and Hemingford, Box Butte County	8	6-7 p.m.					3	5	Hail and wind	Many fields of beans destroyed.
NEBRASKA Arcadia (near), Valley County	8	6:45 p.m.	7	*4			1	4	Hail	Hailstones up to 3/4 inch in diameter. Storm moved southeastward.
ILLINOIS Quincy to Springfield and south to Alton	8	7 p.m.					°5	C	Wind, hail, electrical, and rain	Squall line moved southeastward. Wind gusts to 70 m.p.h., and scattered hail over large area. Difficult to estimate damage. Unusually severe electrical activity at Springfield. Heavy rains of 3 to 4 inches at Springfield and Jacksonville.
MISSOURI Rockport, Atchison County	8	8-9 p.m.							Wind and rain	4 inches of rain accompanied storm. Powerlines downed.
NEBRASKA Auburn and vicinity, Nemaha County	8	8-9 p.m.					1	5	Hail and wind	Hailstones small, but numerous, and driven by strong wind. Damage to crops $50,000 by hail, $10,000 by by wind. Storm moved southeastward.
IOWA Taylor to Appanoose Counties	8	8-10 p.m.	100	*20		1	4	5	Wind	Damaged powerlines and buildings. Storm moved southeastward.
MISSOURI St. Joseph, Tarkio, Cameron, Buchanan, Atchison, and Clinton Counties	8	9-10 p.m.							Wind, rain, and electrical	Winds up to 50 m.p.h., at St. Joseph Airport. Many power- and phone lines downed.
MISSOURI Unionville, Putnam County	8	10 p.m.							Wind, rain, and electrical	Wind estimated at 75 to 100 m.p.h., in gusts. 400 insurance claims for damage to buildings. Extensive wind damage to corn and soybeans.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
NEBRASKA Clay County (north-central portion)	8	Evening					2	4	Hail	
	8									Minor storms also reported in Jefferson, Monroe, and Scott Counties, Iowa; in Framingham area, Mass.; at Kansas City and Trenton and in Nodaway County, Mo.; in Baylor and Opheim areas, Mont.; at Grand Island and in Otoe County, Nebr.; and in Henniker, Manchester, and New Boston, N. H.
MISSOURI Northern half	8-9	P.m.-a.m.			0	0		3	Tornado (suspected), wind, rain, hail, and electrical	Funnel cloud reported near Princeton. Widespread damage to trees, power- and phone lines.
NEBRASKA Gates to Arcadia, Custer and Valley Counties	9	6-6:30 a.m.	40	*2			2	3	Hail	Hailstones 3/4 inch in diameter. Irrigated corn damaged 20 to 60 percent. Storm moved eastward.
WYOMING Laramie, Albany County	9	11:30 a.m.			0	0	2		Dust devil	Broke glass out of 1 store door.
ARKANSAS Palestine, St. Francis County	9	3 p.m.			1	1	1	1	Electrical	2 boys struck by lightning as they worked in field, 1 was killed and 1 injured.
MICHIGAN (Lower) Southeastern portion	9	Afternoon			1	1	4	1	Rain, electrical, and wind	Heavy downpours caused flooding in Flint and Port Huron areas. Lightning killed man in Oakland County and destroyed barn in Ingham County.
MONTANA Russell, Loma, Big Sandy, Highwood, and Geraldine areas, Chouteau County	9	4:30-6:30 p.m.	50	*40			1	5	Hail	Hail areas spotted. Much heavy hail fell over pasture and rangeland. In 1 area, hail drifted into narrow pit so deep it remained 3 days during 75° to 85° temperatures. Storm moved southeastward.
OKLAHOMA Tulsa, Tulsa County	9	10 p.m.	10	*6		4	5	1	Wind, rain, hail, and electrical	Gale-like winds ripped through Tulsa City district, blowing down trees, TV antennas, utility lines, signs, and awnings and shattered over 200 plate-glass windows. Electric company estimated damage at $100,000 and telephone company estimated $10,000. 1 apartment building estimated damage at $10,000 to roof and awnings. 1 drive-in lost large neon sign and other fixtures valued at $5,000. 4 persons injured as result of auto accidents during height of storm. Storm moved northeastward.
NEBRASKA Arnold to Oconto, Custer County	9	Evening	25	*2			2		Hail	Considerable crop damage. Storm moved southeastward.
	9									Minor storms also reported at Boonville, Independence, Kansas City, and Kirksville, Mo.; southwest of Benedict and in Clay and Fillmore Counties, Nebr.; in Halifax County, N. C.; and at Capron, Enid, Fairview, Okeene, and Stillwater, Okla.
KANSAS Central and eastern portions	9-10	P.m.-a.m.							Electrical, hail, and wind	Lightning struck twice in Beloit; 3 times in Manhattan in 2 hours; east of Herington, killing steer 12 miles northwest of Chanute, where 7 cows killed; 1 house in Waldo struck and completely burned; power- and telephone lines and some electrical appliances damaged in Marion and McPherson Counties near Junction City and Lawrence. Greatest loss in Kansas City when store and apartment building struck and burned in resulting fire. 2 homes also reported minor lightning damage. Winds caused some minor damages near Junction City, Ottawa, and Chanute and shook remaining peaches from trees in orchard near Columbus. Hail stripped crops about 2 miles south of Leavenworth over small area about 1/2 mile wide and 1-1/2 miles long.
	9-10									Minor storm also reported near Havre and Kremlin, Mont.
MISSOURI Bootheel area	10	6-8 a.m.							Wind, electrical and rain	Many trees, houses, and farm buildings damaged.
ALABAMA Crossville, De Kalb County	10	Afternoon				1	3	1	Electrical	2 homes hit by lightning; woman injured in 1 of the homes.
MASSACHUSETTS Eastern portion	10	2-6 p.m.				3	4	1	Electrical, wind, hail, and rain	Thunderstorms, most numerous near coast, caused many small fires and minor damage by lightning. Hail in many towns, with window breakage in Hull. 2 injured by falling when startled by storm and child stunned by lightning. Heavy winds felled trees and utility lines in numerous areas. Wind

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MASSACHUSETTS (Cont'd)										gusts to 71 m.p.h., recorded at Boston. Blinding rain and flooded streets halted traffic in many areas. Washouts resulted in some places, as far inland as Sterling. Rains very spotty, with some areas left bone dry in same towns hit by flooding rains. Numerous auto accidents blamed on storm.
NORTH CAROLINA Hertford, Lincoln, Northampton, Orange, and Vance Counties	10	3-6 p.m.					4		Electrical and wind	Roofs blown off, fires set by lightning.
MONTANA Choteau to Dupuyer, Teton and Pondera Counties	10	3:30 p.m.	53	*1			2	5	Hail	Storm moved northward.
NORTH CAROLINA Durham, Warren, and Catawba Counties	10	3:30-5 p.m.						4	Hail	Damage mostly to tobacco in fields over 7 square miles.
ILLINOIS Vandalia area and Paxton, Fayette and Ford Counties	10	Late afternoon			0	0			Tornadoes	Corroborative reports from 3 witnesses of several tornado funnels aloft extending from cumulus congestus clouds. No thunderstorms in area. Single report of funnel cloud at Paxton.
SOUTH DAKOTA Central and southern portions	10	4 p.m.-midnight			0	0	2		Electrical, hail and tornadoes	Damage heaviest between Pierre and Kimball. Funnel cloud aloft north of Sioux Falls at 7:25 p.m. Locally heavy crop damage. Livestock killed by lightning at Scotland.
FLORIDA Fort Myers, Lee County	10	4:42 p.m.			0	0	2		Whirlwind	No funnel cloud sighted. Storm moved northwestward.
MINNESOTA Fairmont (2 miles west of), Martin County	10	5 p.m.						4	Hail	Storm moved southeastward.
VIRGINIA Norfolk-Hampton Roads area	10	6-7 p.m.							Wind, electrical and rain	2 ships torn from moorings. 5 houses damaged by lightning. Signs, trees, and utility lines damaged. Low-lying streets temporarily flooded.
SOUTH CAROLINA Anderson and Greenwood Counties	10	Early evening					4	3	Electrical, wind, and rain	$10,000 wind, $4,000 hail, $1,000 electrical damage. Winds accompanying local severe thunderstorms destroyed tenant house, damaged several others. Considerable minor wind damage between Iva and Greenwood. Lightning burned tenant home near Greenwood. Hail damaged crops near Iva.
COLORADO New Raymer to Yuma, Weld, Logan, Morgan, Washington, and Yuma Counties	10	11:20 p.m.	20	*2			4	4	Hail	Series of thunderstorms with damaging hail moved through northeastern corner during afternoon and evening. In New Raymer, where hailstones size of golf balls fell for 15 minutes, damage to roofs and windows $40,000. Heavy damage to sugar beets, corn, millet, hay, and beans particularly in Merino area. In Yuma area storm path 20 miles wide, but hail lighter than elsewhere. Storm moved southeastward.
NEW MEXICO Deming (10 miles east of), Luna County	10	P.m.	25	*1-1/2			1	4	Hail	Storm moved southward.
ALABAMA Camp Hill, Tallapossa County	10	Evening			1		2	1	Electrical	Girl killed when house and tree outside hit by lightning.
IOWA Carroll County	10	Night	6	*4			1	5	Hail	Destroyed crops.
IDAHO Lamont (near), Fremont County	10								Hail	Rather extensive damage to grain on several farms.
	10									Minor storms also reported at Center Point, Ala.; in Augusta area, Maine; at Holly Springs, Miss.; at Kansas City, Montevallo, and Nevada, Mo.; and south of Ainsworth, Nebr.
COLORADO San Isabel National Forest	10-17								Electrical	Several small fires started by lightning in San Isabel National Forest during week 10th to 17th. 1 fire in Sand Creek area the most serious; took crew 3 days to get fire under control.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons Killed	Number of persons Injured	Estimated damage by categories † Property (exclusive of crops)	Estimated damage by categories † Crops	Character of storm	Remarks
KANSAS Northwestern portion	11	2-3 a m.							Hail and wind	Local hail damage in varying strips, especially in northern Cheyenne and eastern Rawlins Counties and in northern Sherman and Thomas Counties. Hail in some areas as large as baseballs and was left in drifts several inches deep. Crops stripped and many windowpanes broken by wind-driven hail. Little wind damage otherwise.
LOUISIANA New Orleans, Orleans Parish	11	Noon					4	1	Electrical	Lightning struck church chimney and heavily damaged roof.
ARKANSAS McGehee, Desha County	11	Afternoon					4	1	Wind and electrical	Wind damaged roof of rice mill, resulting in water damage to stored grain. Store building struck by lightning, resulting fire caused damage to building and stock.
ARIZONA Tucson, Pima County	11	5 30 p.m.			1		1	4	Wind and rain	Most property damage by wind. 2-year-old boy drowned in arroyo.
SOUTH CAROLINA Barnwell, Bamberg, Darlington, Newberry, McCormick, Richland, and Marlboro Counties	11	Afternoon-evening					4	3	Electrical, wind, and hail	$2,500 hail, $2,500 wind, $20,000 electrical damage. Series of local severe thunderstorms caused considerable damage across central, eastern, and southern portions; either damaged or destroyed 2 feed barns near Mechanicsville, barn and residenc near Bamberg, 2 homes and 3 barns near Marlboro, residence and barn in White Town community, home near Newberry, and residence in Columbia. Storm moved southeastward.
ARIZONA Casa Grande and vicinity, Pinal County	11	7 p.m.	1			1	5	4	Wind, rain, hail, and electrical	High winds caused most damage. Damage in business district extensive. Many homes damaged, some demolished. Widespread utility and phone damage. Storm moved northward.
NORTH CAROLINA Durham, Halifax, and Union Counties	11	9 p.m.				1	5		Electrical	School, office building, and outbuildings burned by lightning fires. Man injured in house; 2 horses killed under tree.
ARIZONA Salome (near), Yuma County	11	Night			2		1	1	Rain	2 men killed when their automobile skidded off wet highway.
	11									Minor storms also reported in Cullman County, Ala. at Calhoun, Ga.; near Long Island, Lyons, and Norton, and at White City, Kans.; at Canton and Woodville, Miss.; and at Roy, Utah.
MICHIGAN (Lower) Southern portion	11-12					1	4	1	Rain and electrical	Heavy rain caused flooding in Benton Harbor area. Lightning destroyed house and barn near Niles, damaged house near Kalamazoo, and destroyed barn near Pontiac.
ARIZONA Cashion, Maricopa County	12	3 a m.					4	4	Electrical, wind, and rain	Lightning set fire to 2 barns, which destroyed with contents. Storm moved southwestward.
NORTH CAROLINA Surry County	12	Noon					4	5	Hail	Damage to tobacco and corn over 30-square miles.
OKLAHOMA Shawnee, Pottawatomie County	12	12:30 p.m.	1/4	25	0	0		1	Dust devil	Roof of new corrugated-metal barn lifted 75 feet in air and scattered over 10-acre area. Storm moved northward.
VIRGINIA Sheva and Shockoe communities, Pittsylvania County	12	1:30-2 p.m.	1-1/4	300-500			4	5	Hail, and wind	Crops chiefly tobacco, totally destroyed by hail over squall area. Lesser damage over larger area Trees uprooted and outbuildings damaged. Storm moved southeastward.
GEORGIA Linton, Hancock County	12	2 p m.	3	800	0	0	3	2	Tornado (suspected) and hail	2 residences damaged. Hail size of golf balls destroyed crops in small area.
VIRGINIA Crozet, Albemarle County	12	2-3 p.m.		*3-4				5	Hail and wind	Hail damaged crops, principally peaches. Several windows broken. Wind blew down antennas, carried away store roof, and broke many windows.
IOWA Polk to Iowa Counties	12	2:30-5 p.m.	80	*10	0	8	5	6	Tornado, wind, hail, electrical, and rain	2 miles northwest of Elkhart heavy hail damage about 2:30 p.m.; stones reported as large as baseballs. Greatest damage from hail over area of approximately 10 miles long by 3 miles wide in southeastern Jasper County. At 4 p.m., tornado touched ground in North Fork of Skunk River botto in Poweshiek County and moved northeastward 5 miles, destroying farm buildings over area. Storm moved east-southeastward. North of Colfax another area of hail with stones reported as large as golf balls.
MINNESOTA Rainy Lake Island, Koochiching County	12	3 p.m.				2			Electrical	Man hurled 16 feet when struck by lightning. Wife standing nearby slightly injured. Storm moved southeastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

able 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
HODE ISLAND Northern portion	12	3-10 p.m.				6	3		Electrical and rain	Lightning struck 4 houses and 1 barn in Greater Providence area, but damage including fire slight. Lake cottage in Coventry destroyed by lightning-caused fire, with damage estimated at $1,000. Minor injuries from 2-car collision and capsizing of boat during rain squall. Numerous power failures and setting off of fire and burglar alarms.
ASSACHUSETTS Extreme northeastern and southeastern portions	12	Afternoon				2	4	1	Electrical, wind, hail, and rain	Scattered severe thunderstorms. Local severe winds with hail about 2 p.m.; in Newbury area storm reported as "twister," but investigation did not confirm tornado. 2 trees uprooted and boats in Ipswich Bay upset. Second storm in same area caused lightning damage to home in Topsfield later in day Storm in southeastern Massachusetts caused washouts, water and lightning damage on Nantucket, while 2 injured by lightning at New Bedford. Lightning damaged homes and wind felled trees and utility lines at Taunton Other lightning damage in nearby areas
IRGINIA Bluemont-Philomont section, Loudoun County	12	Afternoon						3	Hail	Hailstones up to 1-1/2 inches in diameter. About 100 windows broken. 1 peach and apple orchard severely damaged. Several cornfields and home gardens shredded by hail. Total damage several thousands of dollars. Storm moved southeastward.
ENNSYLVANIA Temple area, Berks County	12	4:55-5:30 p.m.				1	4		Hail, wind, and rain	Freak hailstorm which hit Temple area near Reading lasted only 15 minutes, but managed to break some glass in every home in large housing development. Hailstones measured 2 inches in diameter and played havoc with automobiles, greenhouses, and shrubbery. 1 person injured slightly from piece of glass from shattered window. 1 greenhouse had every pane of glass broken, causing estimated $4,000 damage. Another $1,000 damage inflicted to church where many stained-glass windows shattered.
INNESOTA Crosby and Ironton, Crow Wing County	12	5 p.m.	2	*1			5	2	Wind and rain	Several buildings destroyed, many trees downed. Utilities disrupted for 24 hours. Storm moved south-southeastward.
ORTH CAROLINA Person County	12	5 p.m.					4	5	Hail	Damage mostly to tobacco in fields over 4-square miles.
IRGINIA Cellar Creek and Green Hill Road areas, Nottoway County, Darvills district, Dinwiddie County, Red Oak district, Brunswick County	12	5:30 p.m.	20				2	5	Hail and wind	Hail did severe damage to tobacco and corn, with losses ranging from 15 to near 100 percent. Minor damage to buildings and automobiles. Crop losses unknown, but estimated in excess of $100,000.
OWA Linn County	12	5:45 p.m.			1		3	1	Electrical	Killed 1 man and burned part of church.
OWA Clarke to Henry Counties	12	10 p.m.				1	5	5	Wind	Damaged crops and buildings.
LLINOIS Piper City, Ford County	12	10:20 p.m.	13	30	0	0	°4	C	Tornado	Tornado originated near Highway 47 moved east-southeastward ending southeast of Piper City. Discontinuous path.
NDIANA Marshall and Kosciusko Counties	12	11:30 p.m.	28	800	0	1	5	3	Tornado	Tornado struck first along State road 10 east of Argos, travelled eastward and then lifted in area just south of Warsaw. Path of damage more northeasterly from southeast of Warsaw to Barbee Lake area. Several barns destroyed and many barns and houses damaged. Many utility lines torn down.
LLINOIS Central portion	12	Evening			1	3	5		Electrical, hail, and wind	Great number of severe storms across central Illinois from as far north as Chicago to as far south as Mt. Vernon. Lightning death at Prophetstown. 2 hail injuries on boat near New Boston. 1 injury in collapse of carnival tent at Mokena. Display tents wrecked at State fair at Springfield. Scattered widespread damage by wind, lightning, and hail continued after midnight.
	12									Minor storms also reported at Dothan, Ala.; at Glendale, Ariz.; at Greenville, Ga.; at Goshen, Ind.; at Manasquan, N. J.; in Wilson County, N.C.; in Newberry and Spartanburg Counties, S.C.; at Coalville, Utah; and in Harriston community, Va.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
INDIANA Monticello and Logansport areas, White and Cass Counties	12-13	11:20 p.m.-4:10 a.m.	Several	Several			4	1	Wind	Wind of severe thunderstorms blew down trees, and damaged buildings, TV antennas, and cars. Home wrecked 1-1/2 miles north of Burnettsville. Storm moved eastward.
INDIANA Walton area, Cass County	12-13	11:40 p.m. - 1 a.m.	3	200	0	0	4	1	Tornado	Tornado followed State road 218 from 3 miles west of Walton to north edge of Walton where 31 storage bins smashed against grove of trees to east. Some lifted over grove and deposited in corn field. Some bins not moved. Buildings and utility lines damaged. Storm moved eastward.
MINNESOTA Clay, Wilkin, and Traverse Counties	12-13	P.m-a.m.					1		Hail and rain	Damage spotty with crop loss 10 to 100 percent on some farmsteads. Storm moved east-southeastward.
INDIANA New Haven area, Allen County	13	Midnight-4 a.m.					4	1	Wind	Barn located 3-1/2 miles east destroyed. Farmhouse roof damaged.
ILLINOIS Sunnyland Tazewell County	13	1:15 a.m.	5	25	0	0	4	1	Tornado	Heaviest damage to 1 building. Discontinuous path; moved east-southeastward.
ALABAMA Talladega (near), Talladega County	13	3 p.m.					4	1	Electrical	Ancient plantation mansion burned down when hit by lightning.
PENNSYLVANIA Bucks and Montgomery Counties	13	4:15 p.m.	7	30	0	0	4		Tornado and wind	Twister cut through section of Montgomery County east of Lansdale and damaged several homes, smashed 2 house trailers to splinters, and disrupted electric service in addition to knocking down trees and flattening corn in fields. Several houses and carports unroofed at Montgomeryville, while nearby, swath cut through trailer sales agenc where 2 trailers completely demolished and 6 more wrecked when they were turned over and rolled along ground. Because of fact that twister stayed over open country much of the time, damage held to minimum. Storm moved southeastward.
SOUTH CAROLINA Hope Well community, Anderson County	13	4:15 p.m.	1/4	250	0	0	3	1	Tornado	Small tornado destroyed 3 farm buildings.
ALABAMA Birmingham, Jefferson County	13	Late afternoon				3	3	1	Electrical	Lightning injured 3 men working on plane at Municipal Airport. 2 city schools also hit.
NORTH CAROLINA Durham and Johnston Counties	13	6:30-9 p.m.					3	4	Hail	Damage mostly to tobacco in fields over 4-square miles.
INDIANA Indianapolis, Marion County	13						5	1	Electrical	Lightning and resulting fire destroyed part of lumberyard and drop-forge plant.
INDIANA Wabash, Wabash County	13					1			Electrical	Man struck by lightning as he observed thunderstorm
	13									Minor storms also reported at Four Mile, Headland, Montgomery, and Selma, Ala.; at Sheridan, Ind.; in Lee County, Iowa; at Hack Point, Md.; at Waynesboro, Miss.; at McAlester, Okla.; and near Columbia, S.C.
KENTUCKY North-central portion	13-14	Before midnight-a.m.				3	4	4	Wind, hail, and electrical	Severe storm bridging premidnight and past midnight hours lasting between 3 and 4 hours caused considerable crop and property damage throughout area Greatest damage to tobacco and corn by hail and wind. Wind and lightning combined to inflict damage on homes, business buildings, farm buildings, and trees.
	13-14									Minor storm also reported in Braxton and Gilmer Counties, W. Va.
INDIANA Southern portion	14	Midnight-4 a.m.					4	4	Wind	High winds from severe thunderstorms caused scattered damage to buildings, utility lines, and crops.
OHIO Sedalia, Madison County	14	2 a.m.		*2			3		Hail and wind	Hailstones about 1 inch in diameter pockmarked new home. Wind knocked out telephone lines. Storm moved southeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KENTUCKY Hopkins County	14	3 a.m.						4	Wind and hail	Wind and hail severely damaged tobacco and corn. Greatest damage by hail.
SOUTH CAROLINA Bradley (near), Greenwood County	14	3 p.m.				1	3	1	Wind and electrical	$3,000 electrical, $1,000 wind damage. 1 home damaged, another burned.
NORTH CAROLINA Harnett and Johnston Counties	14	3:45 p.m.						4	Hail	Tobacco crop badly damaged.
OKLAHOMA Elmore City, Garvin County	14	Afternoon						1	Wind and rain	High winds blew down TV antennas and trees and damaged many roofs of homes.
TEXAS Tarrant and Ellis Counties	14	6:40 p.m.	4	25	0	0	3		Tornado, wind, and rain	Tornado occurred at Britton. Roof of cotton gin blown off, several outbuildings destroyed. Building 20x30 feet moved from block foundation. Sheet metal from gin strewn in line from gin to point 1/2 mile northeast.
TEXAS Arlington, Tarrant County	14	6:45-7:15 p.m.	2-1/2	850	0	0	4		Wind and tornado	Strong southerly winds of 60 to 70 m.p.h. Trees uprooted, roofs of houses blown off, barns blown down. Funnel-shaped cloud reported from plane over area, but did not touch ground. Storm moved northward.
	14									Minor storms also reported at Athens and Selma, and near Cullman, Ala.; at Ripley, Miss.; in Cumberland County, N.C.; and at McAlester, Okla.
OREGON Northeastern and scattered areas in central	14-15	Afternoons and evenings					4	4	Electrical, hail, and wind	Lightning started a large number of forest fires, burned some stacked hay, knocked out at least 1 power substation, and set some stubble fields afire. In several areas in Wallowa Valley hailstones of 1-1/4 to 1-1/2 inches fell in connection with storm, destroying considerable barley and wheat and damaging some windows and roofs. Winds also reached damaging speeds at scattered points in this area, lodging grain and damaging some stacked hay. Damage by lightning $10,000 to $20,000; by hail $10,000 to $20,000; by wind $3,000 to $10,000.
	14-15									Minor storm also reported in Puget Sound and western slope of northern Cascade areas, Wash.
WISCONSIN Fond du Lac and Ripon areas, Fond du Lac County	15	2 p.m.	10				4	4	Rain, hail, electrical, and wind	Hail 1-1/2 inches in diameter caused total loss of crops in some areas. Excessive rains, with 6 to 12 inches of standing water. Loss of 2,500 greenhouse plants and damage to 2,000 windowpanes among heaviest losses. Storm moved eastward.
NORTH CAROLINA Columbus, Robeson, and Wayne Counties	15	2-3 p.m.				1	4	4	Electrical and hail	Woman at telephone injured by lightning. Hail damaged tobacco in fields. Lightning burned packing house and killed livestock.
ARKANSAS Norphlet community, Union County	15	3 p.m.				3	3		Electrical, wind, and rain	3 timber cutters injured when lightning struck tree under which they had sought shelter. Building under construction destroyed by wind and several damaged slightly. Oil derrick damaged. Some hail damage. Storm moved northeastward.
MICHIGAN Calhoun, Jackson, and Hillsdale Counties	15	Afternoon				1	4	4	Wind, rain, electrical, and hail	High winds downed trees. Lightning destroyed 2 barns and damaged several other buildings. Hail damaged crops and caused minor damage to several airplanes.
SOUTH CAROLINA Charleston, Pickens, Dillon, and Clarendon Counties	15	Afternoon				5	3	4	Hail and electrical	$6,000 hail, $1,000 electrical damage. A number of scattered locally severe thunderstorms caused hail damage in Pickens and Dillon Counties; lightning damage in Charleston County.
OKLAHOMA Idabel, McCurtain County	15	4 p.m.					4	1	Wind, rain, and electrical	Lightning destroyed brooder house and 1,250 chickens. Air conditioner at business firm slightly damaged by lightning. Winds destroyed or damaged several buildings, signs, windows, roofs, TV antennas, awnings, etc.
NORTH CAROLINA Caswell and Johnston Counties	15	4:30-5 p.m.					3	4	Hail	Damage mostly to tobacco in fields over 10-square miles.
COLORADO Estes Park, Larimer County	15	Late afternoon			1	3			Electrical	Woman killed by lightning while hiking near foot of Longs Peak. 3 companions struck, but no serious injury.
WASHINGTON Douglas, Grant, and Chelan Counties	15	5 p.m.	100	*40		1	5	6	Hail, rain, and electrical	Severe thunderstorm activity along eastern slope of Cascades near Columbia River, extending from Cashmere and Wenatchee on south to beyond Lake Chelan on north and eastward into Douglas County. Hail

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
WASHINGTON (Cont'd)										1/4 to 1 inch damaged or destroyed fruit and crops in several localities. Greatest loss in fruit is not amount completely destroyed by hail but amount that will be reduced in grade due to hail damage. Preliminary estimates are that 20 percent of 7 million bushel apple crop damaged to some extent. Runoff from heavy rainfall in higher elevations washed out several sections of highway between Wenatchee and Lake Chelan. Irrigation canals damaged, 1 summer cottage washed into Lake Chelan, and 1 person injured when flood water out of small canyon near Entiat destroyed residence. Large number of forest fires started by lightning in north.
NEBRASKA Ainsworth (8 miles northwest of), Brown County	15	5:30-6 p.m.	6	*2	0	0	3	3	Hail and tornado	Tornado path narrow. Property damage $2,000 by tornado. Crop damage $5,000 by hail. Storm moved eastward.
KANSAS Neodesha area, Wilson County	15	8 p.m.							Electrical and wind	Large barn 3-1/2 miles west of Neodesha burned after being struck by lightning. Some farm implements, 1 horse, 3 calves, and considerable grain and hay lost with barn. Other bolts of lightning in vicinity caused minor damages. High winds broke trees and branches, resulting in powerline trouble and damage to 1 automobile.
MINNESOTA Mentor, Erskine, and Gonvick, Polk and Clearwater Counties	15	P.m.	20				2		Hail and rain	Heavy hail, some as large as baseballs, beat crops and halted highway traffic temporarily. Storm moved eastward.
IOWA Woodbury County	15	Late evening					4	1	Electrical	Burned barn and contents.
	15									Minor storms also reported from Avon to Chapel Hill area, Ark.; in Delta and Montrose Counties, Colo.; at Southington, Conn.; at Jacksonville, Fla.; in north-central Idaho; at Haynesville, La.; at Monett and Springfield, Mo.; in Florence County, S.C.; and near Burke and Dallas, S. Dak.
IOWA Ida County	16	3 a.m.					4	1	Electrical	Burned sales pavilion.
IOWA Howard County	16	6 p.m.			0	0			Tornado	State Highway Patrol reported funnel cloud.
NORTH DAKOTA Towner, Bottineau, Rolette, Cavalier, and Ramsey Counties	16	7:40-8:40 p.m.					5	6	Wind and hail	Many barns and machine sheds either completely demolished or badly damaged and many farm dwellings lost all or parts of their roofs and chimneys. Some of the most severe and costly damage occurred in newly-cut grain fields, with grain scattered and piled into fences, ditches, roads, and adjacent fields. Some fields blown nearly clean of grain. Damage covered about 6,000-square miles. Storm moved southward.
NORTH DAKOTA Cavalier County	16	7:45 p.m.					5	7	Hail and wind	Devastating hailstorm swept estimated 600-square miles of farmland. Accompanied by high winds that ripped roofs from farm buildings and reduced fields to bare stubble, Storm affected an estimated 800 farms. Estimated 25 percent of area hit by storm suffered total destruction while remainder had 50 percent damage. Storm extended from northwestern to southeastern part of State. Wind damage estimated $500,000; hail $8,000,000.
MICHIGAN (Lower)	16						5	4	Rain, electrical and wind	Heaviest damage occurred from flooding in Harbor Beach area where over 3 inches of rain fell, most of it in 1 hour. Harbor Beach streets, homes, and business places flooded from rain which began about 4 p.m. Flooding also occurred in Cadillac area and lightning damage occurred in Cadillac and also in southeastern Lower Michigan.
	16									Minor storms also reported near Cornville, Ariz.; in Cass and Guthrie Counties, Iowa; and at Chillicothe, Mo.
	16-17									Minor storm reported at Garden City, Utah.
MINNESOTA Red Lake Falls and Bemidji, Red Lake and Beltrami Counties	17	1 a.m.					3	5	Hail, rain, and electrical	Crops damaged in Red Lake County. At and near Bemidji hail as large as golf balls damaged gardens, punctured several roofs, and chipped paint on automobiles. Storm moved east-southeastward.
KANSAS Leavenworth and Wyandotte Counties	17	4:15-5 a.m.					5		Electrical and wind	The storm apparently began near Leavenworth and increased in intensity as it moved eastward. 2 houses, 1 in Leavenworth and 1 in Kansas City, struck by lightning. Severe wind in limited area in Fairfax industrial area unroofed several business buildings, demolished 2 airplanes and

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										damaged 4 others. Gust of wind of 115 m.p.h., recorded at Fairfax CAA airport tower. Damaged area in Kansas City about 1,000 yards wide and 1-1/2 miles long. Storm hit Leavenworth at 4:15 a.m., and Kansas City from 4:40 to 5 a.m.
MISSOURI Boonville, Cooper County	17	5 a.m.							Electrical, wind, and rain	Lightning set 3 buildings on fire and damaged police and fire radio transmitters.
MISSOURI Kansas City area, Platte and Jackson Counties	17	5 a.m.							Wind, electrical, and rain	Wind hit 115 m.p.h., at Fairfax Airport, 4 airplanes damaged and powerlines downed.
IOWA Story County	17	7:30 a.m.					4	1	Electrical	Destroyed barn and contents.
MONTANA Martinsdale (north and east of), Meagher and Wheatland Counties	17	1-2 p.m.	15	*1/4-1			1	4	Hail	Storm moved eastward along Musselshell River.
ARIZONA Prescott (near), Yavapai County	17	2:30 p.m.					4	1	Electrical, wind, and rain	Flames destroyed home following lightning strike.
OKLAHOMA Edmond, Oklahoma County	17	Afternoon			0	0	2	1	Dust devil	Strong dust devil blew gravel against large plate-glass window, causing it to shatter.
MASSACHUSETTS Winchendon, Worcester County	17	3 p.m.			0	0	1	1	Dust devil	Minor damage to home. Column about 200 feet high filled by hay and sand. Suction almost pulled woman from her chair. Same house struck by another dust devil on last May 25. Storm moved northeastward.
NEBRASKA Broken Bow, Custer County	17	3:18-3:35 p.m.	9	*2-1/2			4	4	Hail and wind	Hailstones size of marbles. $20,000 property damage by wind, $30,000 crop damage by hail. Damage too widespread for tornado. Storm moved east-southeastward.
NEBRASKA Arcadia (8 miles southeast of), Valley County	17	4-4:30 p.m.					3		Hail	Considerable crop damage. Storm moved east-southeastward.
CONNECTICUT Hartford County	17	Late afternoon							Electrical and rain	Heavy rains washed out 200 feet of new sidewalk and caused flooding of numerous streets in New Britain. Minor power failures by trees falling on lines. Car damaged after skidding on wet pavement.
KANSAS Rawlins, Thomas, Sheridan, Decatur, and Norton Counties	17	6-7:30 p.m.			0	0			Tornadoes, wind, hail, rain, and dust	6 funnels mostly aloft did little damage. Damaging winds left wreckage of farm buildings, trees, power- and transmission lines, and TV aerials across northern portions of Thomas and Sheridan Counties and in southern Rawlins, Decatur, and Norton Counties. Hail in local strips did considerable damage to crops, livestock, and buildings especially windows. Some stones as large as tennis balls. Hail remained in drifts 18 inches deep for 14 hours after storm ended. Heavy rains estimated up to 6 inches washed fields badly and took out bridge and some culverts. Worst of storm lasted only 15 to 30 minutes. 1 funnel observed northwest of Colby about 18 miles, and 5 reported near Dresden. Winds estimated to have reached 75 m.p.h., in some cases. Dust raised by wind in advance of rain reduced visibility considerably.
SOUTH DAKOTA Eastern portion	17	Afternoon-evening						2	Wind and electrical	Windstorm blew roof from airport hangar at Miller and damaged 2 airplanes. Lightning damaged residences at Waubay.
INDIANA Marshall County	17	Evening					4	1	Wind	Severe thunderstorms across middle of County damaged buildings, broke windows, and tore down trees which damaged utility lines and cars. Skating-rink tent destroyed.
INDIANA Granger, St. Joseph County	17	Evening					4	1	Electrical	Lightning-set fire burned barn.
INDIANA New Haven, Allen County	17	Evening					4	1	Electrical	Lightning-set fire burned barn.
	17									Minor storms also reported at Chana, Ill.; near Clifton and at Hunter, Kans.; at Kirksville, Mo.; near Duncan, Nebr.; in Merrimack County, N.H.; and in Bermuda area, S.C.
	17-19									Minor storm reported in Bent County, Colo.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IOWA Clarke, Marion, and Mahaska Counties	18	3-4 a.m.					4	1	Wind and electrical	Lightning burned barn and damaged house, damage $9,000. Wind damage to farm buildings estimated at $4,000.
MICHIGAN (Lower) Southwestern portion	18	Early morning					4	1	Electrical and rain	Barn destroyed by lightning in Barry County. 7 cows killed and several buildings damaged by lightning in St. Joseph County.
IOWA Mahaska County	18	5:30 a.m.	12	880	0	0	5	4	Wind and tornado (suspected)	Destroyed or damaged numerous farm buildings. 1 witness reported seeing funnel cloud. Storm moved east-northeastward.
ILLINOIS Richland and Crawford Counties	18	8 a.m.	30		0	0	4	1	Tornado and wind	Tornado cloud aloft observed over Olney. Wind damage there and at 3 farms near Heathsville may have been partly caused by tornado. Storm moved east-northeastward.
INDIANA Huntingburg, Dubois County	18	9 a.m.					4	1	Wind	Trees uprooted, utility lines and over 100 TV antennas torn down. Roofs damaged and 2 large tents blown down.
INDIANA Carlisle area, Sullivan County	18	9 a.m.					4	1	Wind and electrical	Buildings damaged by high winds. Lightning and fire destroyed barn east of Carlisle, with loss of $10,000.
INDIANA Kendallville, Noble County	18	2 p.m.					4	1	Wind	High winds blew down outdoor theater screen. Falling trees broke utility lines and caused other minor damage.
IOWA Cedar and Clinton Counties	18	2:30-4p.m.	40	*10			6	5	Wind, rain, and electrical	Damaged buildings, utilities, cars, and trees. Storm moved east-southeastward.
OHIO Northern portion	18	3:30-6 p.m.	125	*40	5	8	6		Wind, electrical and hail	Line squall passed through northeastern Ohio; damage reported from Bellevue, Huron County, eastward to Youngstown area. Man and his wife died when tree and powerlines fell on their car in Trumbull County. Woman and her 2 children drowned in Sandusky Bay when high winds overturned their speed boat. Storm winds blew down trees and powerlines, and damaged roofs; lightning started numerous small fires. Hardest hit were Norwalk, Huron County; Elyria, Lorain County; Berea and North Royalton, Cuyahoga County; Garrettsville, Portage County; and Warren, Trumbull County. Storm moved eastward.
TEXAS Perryton, Ochiltree County	18	3:45-4 p.m.	5	750		1	6		Hail, wind, and rain	Cool front moving from northwest entered Panhandle. Shortly after 3 p.m., hail starting as small, round stones soon turned into large, jagged chunks from golf-ball to turkey-egg size. Strong wind from north caused stones to strike with particular force on north sides of buildings. All windows on north sides of elementary school, hospital, courthouse, and churches in town broken. Several hundred automobiles damaged by hail. TV antennas broken. Heavy rains followed hail. Water filled streets from curb to curb; most damage on 1 farm, with loss of 55 head of sheep, some with broken legs and ribs. Sheep also reported killed on 2 other farms.
INDIANA Auburn, De Kalb County	18	Afternoon					4	1	Wind	Minor damage occurred to homes and other buildings. Large tent blown down. Utility services cut.
TENNESSEE Chattanooga and southern suburbs, Hamilton County	18	5:22 p.m.				3	4	1	Wind, electrical, hail, and rain	Wind at the airport reached 46 m.p.h., from northwest. 3 firemen injured fighting fire in house struck by lightning. Hailstones ranged in size from marble to bantam-egg size.
OKLAHOMA Arnett area, Ellis County	18	6 p.m.	3	*4				4	Wind, rain, hail, and electrical	Severe hailstorm, with stones ranging up to 3 and 4 inches in diameter caused extensive destruction 5 miles west-southwest of Arnett. Crops destroyed, animals killed or injured, roofs and buildings had large holes knocked in as if hit by cannon balls, trees stripped of branches and tree trunks badly chopped, and autos had windows broken and bodies dented. Strong winds intensified hail destruction. Storm moved southeastward.
PENNSYLVANIA Western portion	18	6-10 p.m.			1	12	6		Wind, rain, hail, and electrical	Thunderstorms which caused considerable damage in Ohio roared into western Pennsylvania through Mercer County, bringing with it 65-m.p.h., winds, rains, hail, and lightning. In Sharon tree blown over onto shelter house at municipal park, killing 1 woman and injuring 12 other persons. Storm cut through Cook Forest in Clarion and Jefferson Counties where 300 high trees felled. In Centre County barn struck by lightning and burned to ground. Throughout area storm caused havoc generally, mostly to powerlines, transformers, trees, etc. Storm moved eastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TEXAS Wichita Falls, Wichita County	18	8:10-10 p.m.	3	600			3	1	Rain and wind	Rain covered very small area; 1 inch fell in 20 minutes at WBAS, total of 2.38 inches in 100 minutes. Winds of 40 m.p.h., with strong gusts to 58 m.p.h., from south-southwest. Peak gusts 67 m.p.h. Storm moved southeastward.
NORTH CAROLINA Mecklenburg and Moore Counties	18	9 p.m.				4	4		Electrical	Warehouse burned by lightning; dance hall struck, injuring 4 persons.
OKLAHOMA Vici and Leedey, Dewey County	18	P.m.					3	5	Wind, rain, and hail	Severe wind, rain, and hail caused considerable damage to crops, roofs, windows, etc., at Vici and broke plate-glass window, unroofed garage, damaged TV antennas and trees at Leedey.
UTAH Tropic and Bryce Canyon National Park, Garfield County	18								Hail	Cooperative observers reported heavy hailstorms.
	18									Minor storms also reported at Modena, Ill.; at Tefft, Ind.; near Anthony, Dexter, and Savonburg, Kans.; in Knoxville area, Tenn.; and at New Harmony, Utah.
VIRGINIA Clintwood, Dickenson County	19	7:30 a.m.-noon					4	3	Rain	Holley Creek overflowed from cloudburst and flooded part of Clintwood, causing extensive damage to homes, streets, stores, and public buildings. Some families evacuated from their homes for several hours.
ALABAMA Birmingham, Jefferson County	19	Noon					3	1	Wind, rain, and electrical	Wind gusts at airport 76 m.p.h. A few trees and powerlines downed. 5 small airplanes damaged.
NORTH CAROLINA Forsyth and Yadkin Counties	19	12:30-1 p.m.					3	4	Hail	Damage mostly to tobacco in fields over 10-square miles.
VIRGINIA Ridgeway and Christ communities, Henry County	19	12:30-1 p.m.	10	*10					Hail and wind	More than 20 tobacco farms severely damaged by hail and wind.
ARKANSAS Hatchie Coon area, Poinsett County	19	1:30 p.m.	6	*1				4	Rain, hail, and electrical	Extensive hail damage to crops, some fields 10 to 30 percent destroyed. 1 house destroyed and church damaged by fires set by lightning. Storm moved eastward.
VIRGINIA Mt. Laurel community, Halifax County	19	1:30-2:30 p.m.	14	*1			2	4	Hail	Tobacco on approximately 20 farms damaged slightly to nearly 100 percent. Storm moved southeastward.
VIRGINIA Powhatan Court House area, Powhatan County	19	3 p.m.	6	*3-4			4	3	Wind	A few buildings blown down. Many trees uprooted and some automobiles damaged by falling trees. Storm moved eastward.
VIRGINIA Spring Garden, Pickaway, Java, and Riceville communities, Pittsylvania County	19	Afternoon	10	*4					Hail, wind, and electrical	Many acres of tobacco and corn destroyed or damaged by hail. 8 large hogs killed by lightning. 1 barn burned. Homes and barns damaged by wind. Trees blown down. Slight damage to utility lines. About 500 telephones out of service.
WYOMING Rock Springs, Sweetwater County	19	Afternoon					4		Rain and hail	Damage primarily from flooding in new section of Rock Springs.
VIRGINIA Richmond, Petersburg, and Hopewell	19	4-6 p.m.							Wind	Considerable damage to power- and telephone lines and minor damage to several buildings. Trees blown down in many localities. Storm moved eastward.
TENNESSEE Jasper, Marion County	19	4:30 p.m.	1	300			4	4	Hail, wind, electrical, and rain	Hail damaged houses and about 300 parked automobiles. Some houses partially unroofed by wind and many windows shattered by hail. Car windows, wind shields, headlights, and taillights also broken. Storm moved southward.
NORTH CAROLINA Catawba, Stokes, and Surry Counties	19	Afternoon-evening				1	4	4	Electrical, hail, and wind	Man on porch struck by lightning. Poultry house with stock burned. Crops damaged by hail and wind.
TENNESSEE Orlinda and Portland areas, Robertson and Sumner Counties	19	6 p.m.	10	880			4	5	Wind, hail, electrical, and rain	Roaring wind accompanied by hail and severe thunder. Crops blown down, limbs and tree tops broken, and great damage done to tobacco. Storm moved eastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MARYLAND Pocomoke City, Worcester County	19	6:30 p.m.						1	Wind, electrical, and rain	Lightning struck about 5 homes, an office building, TV antennas, and a transformer. Hard downpour of rain lasted about 1/2 hour and flooded many streets. Storm reached its peak about 7 p.m., and resulted in many broken branches and tree limbs.
	19									Minor storms also reported at Cullman, Ala.; at Tyro, Ark.; at Preston, Idaho; at El Dorado, Kans.; at La Plata, Md.; in Richland and Williamsburg Counties, S.C.; and at Appomattox, Va.
	19-20									Minor storms reported at Summerville, Louisville, and Augusta, Ga.
OREGON Western and central portions	19-21	Afternoons and evenings				1	5	2	Electrical	Very severe lightning struck a number of western and central Oregon forests, and knocked out power and telephone installations over considerable areas. Many scores of forest fires started, and while most of them brought under control immediately a scattered few continued for several days and burned over extensive areas. $100,000 damage mostly due to lightning-started forest fires. Storm moved northeastward.
NEW MEXICO Cedar Grove, Santa Fe County	20	12:30 p.m.	1/2	30	0	0	3	1	Tornado	Small tornado moving northeastward tore roof from 1 home and damaged windmill and car.
ALABAMA Russellville, Franklin County	20	2:30 p.m.					4	1	Electrical, wind, and rain	Lightning hit church, damage $3,000; also concrete construction in new hospital, damage $500. Heavy rain greatly eroded city streets and driveways and flooded low-level homes and stores, damage $30,000.
NORTH CAROLINA Caswell, Forsyth, Harnett, Guilford, Lee, Pitt, and Rockingham Counties	20	2-4 p.m.			1		4	5	Electrical and hail	Man at tobacco barn killed by lightning. Home and barn burned. Widespread hail damage to crops.
TEXAS Aransas, Refugio, and San Patricio Counties	20	3 p.m.	5	1,500			3		Wind and rain	2 to 3 inches of rain fell in short time and winds estimated at 80 m.p.h., damaged barns, blew tin roofing 1/4 mile. Some cotton trailers damaged. Storm moved southeastward. Occurred at Rockport, Bayside, and Gregory.
NEW MEXICO Glencoe, Lincoln County	20	4 p.m.	10	*3			1	5	Hail	Fruit damaged. Storm moved southwestward.
VIRGINIA Hopewell, Prince George County	20	4 p.m.							Wind and hail	Strong winds blew down a few outbuildings and a large storage shed. Falling trees crushed several other buildings. More than one-fourth of city of Hopewell without electric power for 6 to 8 hours and telephone service interrupted in a few areas. Hail damage of little consequence.
OREGON Jackson and Josephine Counties	20	Afternoon-evening	30-40	*15-25			3	6	Wind	Very high winds with gusts of 70 to 80 m.p.h., caused heavy damage to Jackson County pears, particularly D' Anjou and Comice varieties with others damaged to lesser extent. Also damaged in this area considerable alfalfa, sweet corn, and other crops. Some damage, though not extensive, to timber, buildings, and power- and telephone lines. Storm moved northeastward.
TEXAS Agua Dulce, Nueces County	20	5-6 p.m.	4	200	0	0			Wind and rain	Rains of 3 inches and winds of 70 m.p.h., occurred, with cold frontal passage. Storm moved southeastward.
	20									Minor storms also reported at Safford, Ariz.; at Twin Falls, Idaho; at Van Buren, Maine; at Hatch and La Union, N. Mex.; and at Spartanburg, S.C.
RHODE ISLAND Providence County	21	Morning							Electrical	Power failure for 2 hours and several hundred telephones out of order for 8 hours in Pascoag-Bridgeton areas.
ARIZONA Willcox (near), Cochise County	21	Afternoon			1		1	1	Electrical	Rancher on horseback killed by lightning.
COLORADO Vallecito Lake, La Plata County	21				1				Electrical	Man killed by lightning while fishing from boat on Vallecito Lake, 35 miles northeast of Durango.
FLORIDA West Palm Beach, Palm Beach County	22	3 p.m.			0	0			Tornado (suspected)	Storm very localized, covering only about 4-square blocks. Trees uprooted, TV antennas bent. No funnel cloud sighted or roar heard -- probably whirlwind that was well developed.
IDAHO Boise, Ada County	23	9 a.m.			0	0	3		Tornado (suspected)	Storm occurred just west of Boise. Witnesses reported twisting or whirling action of wind, accompanying dark cloud, but none described it as

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IDAHO (Cont'd)										a funnel cloud. Some structural damage, several trees blown down, and house trailer turned 180 degrees.
ILLINOIS Elgin to Tinley Park, Kane and Cook Counties	23	2 p.m.	45	40	0	3	5	1	Tornadoes	Probable tornadoes at Elgin and St. Charles. Confirmed tornado at Tinley Park. Moved southeastward at rate of 42 m.p.h.
NEW JERSEY Ewing Township, Mercer County	23	2:30 p.m.	**25-30	Several	0	0	2	1	Dust devil	Sudden local wind whirl twisted fully-loaded, umbrella-type clothesdryer across street and deposited it on roof of nearby house. No accompanying rain, lightning, or unusual cloud formation. Storm moved northwestward.
MICHIGAN Monroe County	23	4 p.m.	15	*1			1	4	Hail and rain	Hail damaged crops, especially fruits and vegetables, eastward from vicinity of Ida to near Monroe.
MICHIGAN Northville (northwest of), Oakland County	23	Afternoon	1/2	880			3	4	Hail, wind, rain, and electrical	Hail and high winds ruined corn and fruit crops and downed many trees.
WASHINGTON Cascade Mountains (eastern slope)	23-24	P.m.-a.m.	200	*75					Electrical	Severe electrical storm during evening of 23d and early morning of 24th. More than 70 fires started by lightning in Wenatchee National Forest, several in Snoqualmie National Forest and other areas. Most fires brought under control without serious loss of timber.
MICHIGAN Lake Michigan	24	7:50 a.m.			0	0			Waterspouts	Several waterspouts reported off shore of Lake Michigan between New Buffalo and South Haven, moving eastward. Last spout reported about 9:30 a.m.
NEW MEXICO Las Vegas (10 miles northwest of), San Miguel County	24	10 a.m.			0	0			Tornado	Funnel cloud moving northeastward observed; did not touch ground.
OKLAHOMA McAlester, Pittsburg County	24	Afternoon			0	0	2	1	Dust devil	2 TV antennas and windows broken.
ARIZONA Between Ft. Thomas and Safford, Graham County	24								Hail	Hail damage to crops.
KANSAS Wichita, Sedgwick County	25	Early a.m.				2			Electrical	Lightning struck pole near house; woman and her daughter in house received light shocks.
OREGON Multnomah and Clackamas Counties	25	Afternoon-evening	30	*10-20			3	3	Rain	Very heavy rains that produced from 1 to 2 inches in about 1 hour at peak of storm flooded numerous basements, caused some damage to power installations, and small amount of damage to hops and grain in Portland area and north Clackamas County. Storm moved eastward.
UTAH Manti, Sanpete County	25	6:30 p.m.			1				Electrical	Farmer baling straw in field struck by lightning.
NORTH CAROLINA Gates County	25	7 p.m.						4	Hail	Tobacco and cotton damaged. Damage estimates for this storm and the one on 28th in same county.
SOUTH CAROLINA Lake View, Dillon County	25	Evening					4	1	Electrical	Lightning destroyed barn and stables and contents.
WASHINGTON Wenatchee area, Chelan County	25	Evening					5	5	Rain	Heavy rain associated with thunderstorm activity caused flash floods in several canyons and in lower areas in city. Several residences damaged, 300 feet of railroad track covered with several feet of mud and rock, orchards damaged by erosion, highways washed out, and irrigation canals filled with silt.
	25									Minor storm also reported near Lisco, Nebr.
MINNESOTA St. Paul, Ramsey County	26	8 a.m.				2	2	1	Electrical and rain	2 girls knocked unconscious by lightning. Storm moved eastward.
NORTH CAROLINA Bertie County	26	2:30 p.m.				2			Electrical	2 fisherman injured and their dog killed by lightning.
NORTH CAROLINA Granville County	26	Midafternoon			1				Electrical	Farmer killed by lightning at his home.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ARIZONA Douglas (20 miles northwest of), Cochise County	26								Hail	Hail damage to crops.
ARIZONA Tucson (near), Pima County	26								Hail	Hail damage to crops.
	26									Minor storms also reported near Weiser, Idaho; at Woollam, Mo.; and near Chester and Stanford, Mont.
MICHIGAN (Lower) Southern portion	27	Early morning					5	1	Electrical and rain	Lightning-set fires destroyed 6 barns, 1home, and damaged several other buildings. Most damage occurred in southeastern counties.
DELAWARE Laurel, Sussex County	27	A.m.						1	Electrical	Warehouse completely destroyed by fire caused by lightning during severe electrical storm. Warehouse contained farm machinery, a number of barrels of lubricating greases and oils, and a quantity of olive oil.
FLORIDA Stuart, Martin County	27	2 p.m.			0	0			Tornado	Funnel cloud sighted that touched ground over uninhabited area, no damage reported.
WYOMING Johnson and Sheridan Counties	27	Afternoon	50					4	Hail and wind	Storm moved northeastward.
FLORIDA Escambia County	27				1				Electrical	Death caused by lightning.
	27									Minor storms also reported at Lafayette, Ala.; at Easton, Md.; in Washington County, Pa.; and at Faith, S. Dak.
OKLAHOMA Tecumseh, Pottawatomie County	28	2:15 p.m.	**50	7	0	0	2	1	Dust devil and wind	Portion of roof of outbuilding blown off and slammed into house. Utility lines broken. Storm moved northward.
FLORIDA Orlando, Orange County	28	3:40 p.m.					4		Wind and hail	High winds felled trees, some falling on buildings and parked cars, broke glass in business district and disrupted power service. 1/2-inch hailstones observed .
OKLAHOMA Frederick, Tillman County	28	3:45 p.m.	9	500	1	8	5	1	Wind, rain, and hail	Severe cyclonic wind passed quickly over Frederick, causing destruction and damage to many structures, signs, windows, 400 TV antennas, trees, utility lines, etc. Witnesses believe destruction would have been much worse had full force of wind struck ground. Worst of wind remained about 100 feet above ground and seemed to have vacuum or suction action. 4 persons in 1 family injured when house trailer blown over. 2 other house trailers blown over. 1 person received concussion when struck on head while trying to close garage door. Details concerning person killed and others injured not available. 1/2-inch hail nearly covered ground during storm. Storm moved northeastward.
MINNESOTA Fertile area and Perham, Polk and Otter Tail Counties	28	4:40 p.m.	18	*3		3	5	5	Hail and wind	Hailstones as large as golf balls accompanied by high wind did extensive crop and property damage. Hail damage to crops estimated at $75,000. Hail and wind damage to property reported at $201,000. Some hail damage also occurred near Perham. Storm moved eastward.
MASSACHUSETTS Berkshire County (central and southern portions)	28	Afternoon and evening					5	1	Electrical, wind, hail, and rain	Severe thunderstorms in midafternoon and again in evening set many fires by lightning, including fire with total loss of historic church at West Stockbridge. Large plate-glass window broken in Pittsfield by wind, and trees felled and branches toppled over wide areas with heavy losses to utility lines. Hail fell at Kopec.
KANSAS Extreme southeastern counties	28	5-10 p.m.							Electrical, wind, hail, rain, and dust	Damages from severe thunderstorm began near Wellington about 5 p.m., and progressed eastward ending near Chanute about 10 p.m. Lightning struck 4 times in and near Wellington, northeast of Arkansas City, 4 miles north of Wauneta, at Coffeyville, and at Altoona, and caused minor damage at Chanute. Farm house north of Wauneta and barn near Coffeyville entire losses from resulting fires. High winds caused damages to trees and power- and telephone lines near Winfield and Arkansas City, and at Altoona and Chanute where at latter place winds reached speeds of 62 m.p.h. Shed near Winfield destroyed. Hail 1 inch in diameter fell at Derby. High winds at Neodesha and Chanute caused blinding duststorm for a few minutes. Electrical service interrupted for several hours to surrounding towns.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA Kingfisher, Garfield, and Kay Counties	28	6-11 p.m.				2			Wind, rain, hail, electrical, and dust	Severe winds, stifling dust, and heavy hail caused widespread scattered damage over 3-county area to buildings, utilities, trees, etc. Heavy hail reported near Garber, Garfield County. Poor visibility due to dust resulted in automobile accident near Ponca City, Kay County, in which 2 persons injured. East of Hennessey, Kingfisher County, lightning burned out TV set. Heavy wind damage also resulted; 1 barn unroofed and roof smashed against house, and 2 other barns destroyed. At Loyal, Kingfisher County, locker plant valued at $10,000 destroyed by fire resulting from lightning. Heavy hail broke 200 windowpanes at school. Other damage also indicated in area. Estimated loss in Hennessey-Loyal area $50,000 to property, and $2,500 to crops. Storm moved northeastward.
OKLAHOMA Geary, Blaine County	28	6:15 p.m.	15	1,000			5	5	Wind, rain, and hail	Severe hailstorm, with stones over 1 inch in diameter, gale-like wind, and heavy rain caused widespread and intensive damage to crops, buildings, livestock, utilities, TV antennas, etc. 343 turkeys killed out of flock of 1,500. Water blew into business buildings, causing damage to floors and stock. Storm moved northeastward.
MINNESOTA Le Sueur, Sibley, Redwood, Brown, and Nicollett Counties	28	6:30 p.m.	12	*2	0	0			Wind, rain, hail, and tornadoes	Wind estimated at 70 m.p.h. Neon signs and hundreds of trees blown down. Several plate-glass windows blown in. Utilities disrupted. Official rain of 2.90 inches in 1 hour caused some washouts and plugged storm sewers. Just north of Le Sueur several funnel clouds observed. Hail 3/8 to 1/2 inch observed. Many corn fields shattered and badly twisted, soybeans matted. Crop loss also reported at Redwood Falls, Winthrop, New Ulm, St. Peter, and Le Center and vicinities. Storm moved northeastward.
MARYLAND Cumberland-Frostburg area, Allegany County	28	7 p.m.							Wind, electrical, and rain	Severe electrical and rainstorm hit narrow section of western Maryland. Trees reported downed in all parts of Cumberland. Sewers flooded and filled with debris, and viaducts filled. Hundreds of telephones out of order. Lightning caused trouble in wiring and in many TV sets, and many individual power failures. In downtown Frostburg, lightning struck transformer and threw business section into darkness for about an hour. At Cumberland, winds reported up to 48 m.p.h. Property damage reported as considerable.
NORTH CAROLINA Gates County	28	8 p.m.							Hail	Tobacco and corn damaged. Damage included in storm of 25th in same county.
PENNSYLVANIA Luzerne, Schuylkill, Berks, and Dauphin Counties	28	8-12 p.m.					5	4	Electrical, hail, and wind	Severe local thunderstorms accompanied by hail and strong winds set fire to a number of barns and dwellings.
NEBRASKA Fremont to north of Nickerson, Dodge County	28	9-9:30 p.m.	12	880+			2		Hail	Hailstones about 3/4 inch in diameter. Crops had already been severely damaged by drought or damage would have been heavier. Storm moved northward.
MINNESOTA Thief River Falls, Pennington County	28	9:30 p.m.	9	*2			3	4	Wind, hail, and rain	Egg-sized hailstones broke considerable glass in homes and 3 greenhouses and stripped ripe grain. Strong wind lodged some crops, also blew down several telephone lines. Unofficial airport wind speed 60 m.p.h. Storm moved northwestward.
NEW YORK Most of State	28	P.m.			2	2	5		Wind, rain, hail, and electrical	Violent thunderstorms crossed State, bringing damaging winds, rains, and some hail to many localities. Lightning caused many fires. At Syracuse, Onondaga County, ice-crean plant burned at loss of $250,000; 1 man died from smoke poisoning and 2 injured. Wind of 51 m.p.h., reported. 25,000 electric services broken and 3,500 telephones out of order. At Plainville, barn with contents burned by lightning at estimated loss of $50,000, and at Pompey another barn burned with undetermined monetary loss. In Auburn, Cayuga County, wind reported at 72 m.p.h., and 200 trees felled or damaged in city, tangling uncounted utility services. Man drowned in Cayuga Lake during storm. At Bluff Point near Penn Yan, Yates County, barn and contents burned by lightning at estimated loss of $35,000. In Rochester, Monroe County, trees downed and streets flooded, 4,000 electric services broken, and 1,500 telephones disrupted. At nearby Webster, 2 barns burned by lightning with loss estimated at $5,000. In Rensselaer, Albany, and Schoharie Counties hail fell in some localities, but caused little damage. At Claverack, more than 200 automobiles stopped in line by fallen trees and tangled utility wires. At Albany Airport, wind gusts of 51 m.p.h., recorded. Trees and wires downed in western portion of

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path yards	Number of persons Killed	Number of persons Injured	Estimated damage by categories † Property (exclusive of crops)	Estimated damage by categories † Crops	Character of storm	Remarks
NEW YORK (Cont'd)										Albany and streets flooded. Some buildings damaged by falling trees. Others in area struck by lightning. In New York City metropolitan area severe lightning, heavy rain, and gusty winds that reached 61 m.p.h. Utility services disrupted, some local flooding, Long Island Railroad trains delayed, and planes behind schedule at Idlewild Airport. Damage in area estimated from $25,000 to $50,000. At Bridgehampton, Suffolk County, wind attained speeds of 50 to 70 m.p.h. Large trees blown down and highways blocked. Most fruit blown from trees.
	28									Minor storms also reported at Bridgeport and Redding, Conn.; in Black Hawk, Boone, Cerro Gordo, Dallas, Franklin, Story, and Union Counties, Iowa; at Barnes and near Richmond, Kans.; at Ardmore, Okla.; in Erie County, Pa.; and at Decatur, Tex.
NEW JERSEY Essex, Union, Morris, Passaic, and Bergen Counties	28-29	P.m. a.m.				10-15	°5	C	Electrical, rain, and wind	Principal damage resulted from lightning and heavy rain. Innumerable buildings, trees, and wires struck by lightning, injuring and burning several persons including firemen. Overhead wires of Lackawanna Railroad downed, thus interrupting train service for about 7 hours. Some minor flooding and road washouts. Some wind damage sustained such as broken windows, plate glass, and torn shingles and TV antennas. Storm moved eastward.
	28-29									Minor storm also reported at Pinebend, Minn.
MINNESOTA Waseca, Waseca County	29	3:15 a.m.					5	1	Electrical and rain	Bolt of lightning started fire that destroyed lumbermill and 2 adjacent warehouses. Storm moved southeastward.
OKLAHOMA Vinita to Afton, Craig and Ottawa Counties	29	10:30 a.m. - p.m.						1	Wind, rain, and electrical	Strong winds and lightning caused damage to trees, utility lines, buildings, and TV antennas. Storm moved northeastward.
OKLAHOMA Oklahoma City, Oklahoma County	29	4:30 p.m.					2	1	Rain and hail	Hail to 3/4 inch in diameter nearly covered ground over northern portion of City. Storm moved northeastward.
MISSOURI St. Louis	29	5-6 p.m.	1/4	200			5		Wind, rain, and electrical	Damage to several exhibits at Mid-American Jubilee and to several aircraft at Weiss Airport. Storm moved southeastward.
KANSAS Pawnee to Rice Counties	29	6-8 p.m.							Wind and hail	Severe storm conditions prevailed during evening, with various small strips of hail over northern and eastern Pawnee County and in northern Rice County. Hailstones size of golf balls reported, and driven by high wind were quite damaging to windows, roofs, and crops. Damage appears to have occurred in Rice County about 6 p.m., and near Larned about 8 p.m. Storm moved northeastward.
TEXAS Boyd (near), Wise County	29	6:30-7 p.m.	9		0	0	3		Tornado, rain, and hail	Tornado funnel reported 1 mile north of Boyd. Chickenhouses, barns, and other buildings destroyed. Funnel followed by heavy rain and hail. Storm moved northeastward.
CONNECTICUT Winsted, Litchfield County	29	8-8:45 p.m.							Electrical and rain	Flash flooding of streets in Winsted. Sidewalks washed out, basements flooded, and exposed soils in new housing project badly eroded. Large stone dislodged by rains hit and severed large water main. 1 street blocked by tons of stone and gravel.
ILLINOIS Pontiac, Livingston County	29	9 p.m.			1		4	1	Electrical and wind	Man died in lightning fire. 4 barns burned. Scattered wind damage in northeast.
FLORIDA West Palm Beach (near), Palm Beach County	29	P.m.			0	0			Tornado	Funnel cloud sighted 8 miles south-southeast of Weather Bureau Office, but did not touch ground.
PENNSYLVANIA Lackawanna, Bucks, and Montgomery Counties	29	Evening					4		Electrical	Local damage, mostly burned barns.
TEXAS Garland and Richardson, Dallas County	29	Night	7		0	0			Tornadoes	Garland police reported seeing 3 funnel-shaped clouds which later became one. Funnel sighted near Richardson broke up without causing damage.
	29									Minor storms also reported in Clay County, Iowa; near Mineral, Kans.; and at Jackson, Miss.
MICHIGAN (Lower) Southeastern portion	29-30						4	1	Electrical and rain	Lightning damaged many buildings. Heavy rains caused flooding in several areas.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	29-30									Minor storm also reported at Urbana, Ind.
IOWA Osceola and Dickinson Counties	30	Noon	20	*2			3	4	Wind and hail	Damaged crops and farm buildings. Storm moved eastward.
OHIO Mentor-on-the-Lake, Lake County	30	Noon-2p.m.					4	1	Rain	Heavy rain caused rapid overflowing of small streams. Almost every home in village affected by flooding; basements flooded, lawns gutted, roads crumbled, automobiles flooded, and shrubbery uprooted. Flood attained depth of 6 feet in some spots.
MICHIGAN Niles (near), Berrien County	30	2:40 p.m.			0	0			Tornado	Funnel aloft sighted near Niles. Apparently did not touch ground.
MISSOURI Alexandria, Clark County	30	Late afternoon-evening			0	0			Tornado (suspected), wind, hail, rain, and electrical	Many trees and houses damaged. Wind and hail damaged corn and soybeans.
NORTH DAKOTA De Lamere area, Sargent County	30	3:19 p.m.			0	0			Tornadoes	3 funnels sighted within 5 miles of De Lamere.
MINNESOTA Hendrum and Ada, Norman County	30	3:20 p.m.			0	0	2	2	Tornado, rain, and hail	Farm family observed tornado funnel as it touched ground near their home 3 miles east-northeast of Hendrum. Roof of small building picked up and destroyed, hayrack destroyed, shingles from granary picked off. Same funnel again touched ground 7 miles west of Ada, destroying machine shed. Storm moved northeastward.
NORTH DAKOTA Fargo, Cass County	30	3:25 p.m.	6	60	0	8	5	4	Tornado	Power, telephone, and telegraph poles toppled in snarl of wires and splinters. Southwestern Fargo and western Fargo without electric power for about 3 hours. 10 dwellings, several trailers, several farm buildings, and 10 business places seriously damaged or destroyed in 10-block area. 2 box cars rolled off Northern Pacific tracks, and at trailer court 1 trailer tossed over another and demolished. Storm moved northward.
TEXAS Dallas, Dallas County	30	4-6:30 p.m.	25	*10		1	5		Wind and electrical	Damage due to straight, gusty thunderstorm winds. Heaviest damage was an estimated $200,000 by unroofing of 450x110-foot warehouse. Other buildings damaged were frame or frame and corrugated iron construction; power and phone services interrupted due to lightning strikes and wind damage to utility poles and lines. All damage widely scattered over city and county with no indication of storm path such as results from tornado. Storm moved east-northeastward.
IOWA Polk and Marshall Counties	30	Afternoon			1		4	1	Wind, rain, and electrical	Lightning killed man at doorway of home, and destroyed barn and damaged utilities. Wind damaged other farm buildings.
NORTH CAROLINA Rockingham County	30	5:15 p.m.				2			Electrical	2 golfers struck by lightning.
TEXAS Sulphur Springs, Hopkins County	30	6 p.m.	30	*25			5		Wind and rain	Roofs torn off 4 houses and 6 barns. Boats damaged, 2 destroyed, on nearby Century Lake. Electric and phone services disrupted by wind. Storm moved southeastward.
OKLAHOMA Sallisaw, Sequoyah County	30	5:15 p.m.	3	880			4		Wind, rain, and hail	Strong winds and heavy hail with stones up to 2 inches in diameter caused extensive damage to buildings, glass fixtures, etc. 1 motel had $500 damage to neon lights. Strong winds blew down some trees. Storm moved northeastward.
MISSOURI Grundy, Sullivan, and Adair Counties	30	Late afternoon					5		Wind, electrical, and rain	Green Castle, Milan, Novinger, and Fegley hardest hit. At Milan drive-in theatre demolished. Many houses and barns had roofs blown off. Powerlines and phone lines downed, many trees uprooted, and windows broken.
ILLINOIS Hamilton, Hancock County	30	6 p.m.	2	300			4	1	Thunderstorm	Storm moved east-northeastward.
MISSOURI Warsaw and Lincoln, Benton County	30	7 p.m.			0	0	3		Tornado (suspected), rain, and hail	.65 inch of rain in 30 minutes. Hail 1 to 1-1/2 inches in diameter. Storm moved east-southeastward.
ILLINOIS Northwestern portion	30	7-11 p.m.			1		4		Wind and electrical	Scattered wind and electrical damage from Galesburg and La Salle northward to Savanna and Rockford. Woman killed at Oregon by contact with wind-damaged electric wire. Storm moved northeastward.
MISSOURI Florissant, St. Louis County	30	10:17 p.m.	Short	50	0	0	4		Tornado	$5,000 damage to 2 houses, $10,000 damage to Mid-America Jubilee structures. Storm moved eastward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ILLINOIS Dixon, Lee County	30	11 p.m.		15	0	0	3	1	Tornado (suspected)	Barn destroyed. Storm moved northeastward.
TEXAS Greenville, and San Saba, Hunt and San Saba Counties	30	Evening	40	*20			5	5	Wind and hail	Winds, recorded at 65 m.p.h., ripped roofs off homes, smashed plate-glass windows, snapped tree limbs, and broke TV antennas. A number of fires started around cotton gins. Hail damaged pecan trees near San Saba and broke windows. Storm moved southeastward.
TEXAS Hillsboro, Hill County	30	Evening	5	100			4		Wind	Drive-in theater screen blown down. Storm moved southeastward.
OKLAHOMA Hugo-Idabel, Choctaw and McCurtain Counties	30	Night							Wind, rain, and hail	Hail up to golf-ball size covered ground at Hugo. Strong winds buffeted McCurtain County, with heaviest damage around Idabel. Heavy damage resulted to buildings, roofs, trees, utilities, TV antennas, etc.
IOWA Fayette and Allamakee Counties	30					1	4	1	Electrical	Injured telephone lineman and destroyed 3 barns.
IOWA Jackson County	30						4	1	Wind, rain, and electrical	Barn destroyed and homes and utilities damaged.
	30									Minor storms also reported at Huntsville, Ala.; in Decatur, Des Moines, and Pottawattamie Counties, Iowa; near Lyndon, Kans.; at Lafayette, La.; at Carthage, Clinton, Deepwater, Macon, and Sikeston, and near Versailles, Mo.; and at Deport, Tex.
ARKANSAS Most of State	30-31	P.m.-a.m.				2	5	4	Wind, hail, rain, and electrical	Widespread thunderstorm activity over State during southeastward passage of squall line. Principal wind damage in Washington, Johnson, and Pope Counties; scattered hail damage, with severe loss of grapes in Tontitown area, Washington County. Storm moved southeastward.
TEXAS Johnson and McLennan Counties	31	2 p.m.	1/2	100	0	0	3		Tornado, wind, rain, hail, and electrical	In Concord community trees uprooted, telephone poles and buildings blown down. At Waco TV antennas damaged by wind. Storm moved southeastward.
OKLAHOMA Sallisaw, Sequoyah County	31	3 p.m.			0	0			Tornado	Funnel dipped down about 7 miles east of Sallisaw, but caused no damage. Storm moved northeastward.
ARKANSAS Most of State	31	Afternoon-evening				1			Electrical, wind hail, and rain	Widespread thunderstorm activity over State. Principal damage in west-central from Mena and Ft. Smith eastward to Morrilton, and severe electrical storm as far east as Little Rock. Scattered hail, but stones generally under 1/2 inch. 1 man injured by lightning in North Little Rock. Storm moved southeastward.
FLORIDA West Palm Beach, Palm Beach County	31	P.m.			0	0			Waterspout	
GEORGIA Dexter, Laurens County	31	P.m.	Short	Narrow	0	0	3	1	Tornadoes (suspected)	2 local windstorms described as small tornadoes struck about 4 hours apart. First hit 3 miles southwest of Dexter at about 4 p.m., moved residence several feet from it's foundation and overturned chickenhouse. Second at about 8 p.m., severely damaged residence just east of Dexter.
NEW YORK Central and eastern portions	31	P.m.			1				Wind and rain	Thunderstorms passed over State, but most severe in central and eastern counties. At Binghamton, Ithaca, Albany, and Syracuse wind brought down trees, tangled utility lines, and flooded streets. Heaviest rain fell in Syracuse area where many cellars filled with flood water and some streets and highways washed out. In this City man killed when attempting to turn off electric current.
MISSOURI Laredo, Grundy County	31	Afternoon			0	0			Tornado (suspected), hail, wind, and rain	Several farm buildings damaged. Hail damaged corn and soybeans. Storm moved eastward.
MISSOURI Neosho (15 miles southeast of), Newton County	31	8:10 p.m.			0	0			Tornado (suspected)	Sheriff's office at Neosho reported funnel cloud. Unable to get any verification.
PENNSYLVANIA Erie and Crawford Counties	31	Evening					4	4	Electrical and rain	Barns burned by lightning strikes, and local flooding due to heavy rains.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
PENNSYLVANIA Northumberland, Lackawanna, and Schuylkill Counties	31	Evening					4		Electrical and rain	Some barns burned by lightning and local flooding in cities of Scranton and Pottsville.
OKLAHOMA Roberta, Bryan County	31								Wind, rain, and hail	Hail up to size of golf balls damaged crops and property.

° Includes crop damage.
C Crop damage included with property damage.
* Miles instead of yards.
** Yards instead of miles.
† Storms are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

AUGUST 1956

A number of flash floods occurred during August in scattered areas. The most significant of these were the flash floods in the extreme upper Ohio Basin on August 5 with the loss of 14 lives and excessive property damage.

MISSISSIPPI SYSTEM

Missouri Basin.--All-day rains on the 26th in the Little Belt Mountains resulted in flash floods in the Belt Creek drainage 6 miles south of Monarch, Mont. A portion of U. S. Highway No. 89 was washed out and debris piled over the roadway.

Heavy rains (3 to 6 inches) in eastern South Dakota during the first 3 days of August caused some flooding on small creeks. Only minor rises occurred along the main rivers since the rains occurred over portions of several drainage basins. The highest stage reported on the James River was 8.0 feet at Huron, S. Dak., on the 4th and 5th (3 feet below flood stage).

Flash floods resulted from the rains during the period from July 30 to August 3 over Cherry Creek, Plum Creek, and little Dry Creek in Denver and Englewood, Colo. Thousands of private residences and businesses were flooded.

There were minor overflows on the North Fork of the Republican River at Benkelman, Nebr., on the 11th and 17th and on Sappa Creek at Oberlin, Kans., on the 17th and 20th and Beaver City, Nebr., on the 11th. There was also some minor flooding on the Smoky Hill River at Arnold, Kans., on the 4th. Damage from overflows was negligible. A record low stage occurred on the Republican River at Concordia, Kans., with a reading of 0.55 foot on August 30-31. The previous low stage was 0.56 foot on August 3, 1955.

The flooding along the Grand River in Missouri, between the 2d and 5th, caused considerable damage in Livingston County to growing crops. The beans which were inundated were almost a total loss. There was considerable damage to corn where the water remained on fields for more than a day or two.

Ohio Basin.--Severe thunderstorms and heavy rains on the 5th caused severe flash floods on Chartiers Creek at Canonsburg, Pa., where 1,200 persons were evacuated and at Carnegie, Pa., where hundreds more were evacuated. Water was reported 8 feet deep over key highways, bridges, and residential streets in the two communities. Heavy flood damage was also reported along the Youghiogheny River in Pennsylvania and on the West Fork and Cheat Rivers in West Virginia. Flood stage along the Monongahela River was exceeded by 2 to 7.5 feet. At least 14 lives were lost in these floods.

Heavy rainfall on the 20th caused a flash flood on Holly Creek which flows through the town of Clintwood, Va., in the headwaters of the Big Sandy River, Levisa Fork. Damage was light.

The Ohio River reached within 0.1 foot of flood stage at Pittsburgh, Pa., on the 6th. In the reach from Midland to McMechen, W. Va., flood stage was exceeded by 0.3 to 0.9 foot. Normal pool conditions in the upper Ohio were exceeded for a period of 105½ hours.

Arkansas Basin.--A flash flood on Pecks Creek, about 10 miles west of Pueblo, Colo., washed out a three-span bridge on State Highway 96 on August 2, disrupting travel between Pueblo and Wetmore. A pronounced rise occurred on the Arkansas at Pueblo, but flood stage was not reached. Heavy rains (scattered) in southeastern Colorado on the 18th and 19th resulted in another situation of flash-flood potentialities and some minor flooding of streets and roadways in and near Lamar, Colo., but with no significant damage. Most damage was from surface runoff rather than actual overflow from rivers or streams. Highest reading on the Purgatoire at "Nine Mile Station" was 4.1 feet, and at Highland Station, 7.9 feet. John Martin Reservoir gates were closed on the 19th. The Arkansas River reached a stage of 7.04 feet at Syracuse, Kans., (flood stage 7 feet) on the 20th.

WEST GULF OF MEXICO DRAINAGE

The Guadalupe River reached a low stage of 1.25 feet at Victoria, Tex., on August 19 and 20, the lowest stage since October 1928.

Locally heavy rains of 2 to 6 inches occurred on the 19th on the upper Nueces and Frio, with the heaviest amounts occurring on the Frio near Knippa, Tex. Flooding was limited to the area of heaviest rainfall.

Locally heavy rainfall of 4 to 7 inches over the middle Nueces and lower Frio Rivers in Texas, on the 25-26th, caused moderate flooding on those streams. The San Miguel Creek was the highest since 1946. The flooding on La Parita Creek resulted in flooding of low places on Atascosa River from the 27th to the 29th. Most of the damages were confined to bridges and road structures.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--A short, violent downpour flooded much of Lindsay Creek near Lewiston, Idaho, during the evening of the 25th. Part of Main Street, in the eastern portion of Lewiston, was flooded when a shed, about 12 x 14 feet was washed against the Lindsay Creek Bridge. Damage was not extensive.

FLOOD STAGE DATA

Table 5 (All dates in August unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM Missouri Basin					
North Fork Republican: Benkelman, Nebr.	5	11 17	11 17	6.0 6.4	11 17
Sappa Creek: Beaver City, Nebr.	-	11	11	8.9	11
Oberlin, Kans.	11	7 20	7 20	12.5 12.7	7 20
Smoky Hill: Arnold, Kans.	7	4	4	8.35	4
Grand: Chillicothe, Mo.	24	2	3	26.7	2
Sumner, Mo.	26	2	5	29.9	3
Ohio Basin					
Youghiogheny: Sutersville, Pa.	20	6	6	21.3	6
Monongahela: Lock 7, Greensboro, Pa.	23	5	6	25.0	6
Lock 5, Brownsville, Pa.	23	5	7	29.0	6
Lock 4, Charleroi, Pa.	24	6	7	31.6	6
Lock 3. Elizabeth, Pa.	23	6	7	29.1	6
MISSISSIPPI SYSTEM (Cont'd.) Ohio Basin (Cont'd.)					
Monongahela (Cont'd.): National Tube, McKeesport, Pa.	12	6	7	18.6	6
Lock 2, Braddock, Pa.	26	6	7	31.4	6
Ohio Dam 7, Midland, Pa.	30	6	7	32.7	6
Dam 8, Newell, W. Va.	32	6	7	32.6	7
Dam 11, Wellsburg, W. Va.	32	7	7	32.9	7
Dam 13, McMechen, W. Va.	37	7	7	37.3	7
Arkansas Basin					
Arkansas: Syracuse, Kans.	7	20	20	7.0	20
WEST GULF OF MEXICO DRAINAGE					
Frio: Calliham, Tex.	12	27	28	25.8	28
Atascosa: Whitsett, Tex.	20	28	28	21.0	28
Nueces: Tilden Crossing, Tex.	11	27	31	16.9	29

* Provisional

RAWINSONDE DATA

Average monthly values

Table 20

AUGUST 1956

ALBANY, N. Y. (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	86	17.6	79	224	2.5
1,000	31	116	18.3	73	229	3.1
950	31	564	18.3	64	270	7.8
900	31	1,020	15.4	65	277	10.5
850	31	1,502	11.9	67	283	12.2
800	31	2,007	8.7	64	284	12.0
750	31	2,545	5.7	59	286	12.4
700	31	3,100	2.7	50	285	15.0
650	31	3,696	- .3	40	285	18.5
600	31	4,331	- 3.6	37	285	22.0
550	31	5,015	- 7.3		280	25.3
500	31	5,754	-11.7	34	278	28.7
450	31	6,559	-17.0		278	32.2
400	31	7,427	-23.1	36	281	36.1
350	31	8,390	-30.4		276	41.6
300	30	9,468	-38.6		277	44.7
250	29	10,693	-47.8		282	53.6
200	27	12,142	-55.1		280	59.4
175	27	12,990	-57.2		280	57.3
150	27	13,957	-59.7		278	49.5
125	25	15,090	-61.0		282	36.5
100	25	16,476	-60.4		276	24.9
80	23	17,874	-57.8		275	13.8
60	22	19,698	-54.4		284	2.5
50	22	20,867	-53.4		104	4.3
40	22	22,306	-52.3		91	10.9
30	17	24,183	-50.6		95	15.3
20	9	26,800	-48.1			

ALBUQUERQUE, N. MEX. (839 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,619	24.6	35	135	3.5
1,000	31	43				
950	31	512				
900	31	996				
850	31	1,505				
800	31	2,038	22.6	34	199	5.2
750	31	2,598	18.2	37	231	7.4
700	31	3,181	13.2	42	237	5.8
650	31	3,803	7.8	51	261	4.9
600	31	4,453	2.3	59	275	5.6
550	31	5,150	- 3.5	64	286	6.4
500	31	5,895	- 9.0	62	293	6.2
450	31	6,715	-14.0	52	272	7.0
400	31	7,588	-19.7	43	266	7.6
350	31	8,564	-27.1	39	252	8.7
300	31	9,654	-35.8	39	245	11.7
250	30	10,895	-45.2		238	17.7
200	29	12,353	-55.7		245	20.2
175	29	13,192	-60.5		247	18.6
150	29	14,142	-64.3		258	17.5
125	28	15,248	-66.9		267	12.2
100	27	16,590	-67.3		276	4.1
80	25	17,945	-64.2		90	3.1
60	23	19,734	-58.9		74	10.7
50	22	20,861	-57.3		76	17.7
40	22	22,297	-55.1		87	22.9
30	21	24,142	-52.3		83	25.1
20						

ANCHORAGE, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	30	16.4	60	211	2.9
1,000	31	70			200	2.7
950	31	508	12.1	64	161	2.5
900	31	953	8.8	67	155	4.7
850	31	1,424	5.4	72	139	5.2
800	31	1,916	2.1	75	148	5.8
750	31	2,441	- .7	74	158	5.2
700	31	2,984	- 3.3	69	173	2.7
650	31	3,573	- 6.4	65	220	2.9
600	31	4,188	-10.0	58	240	2.1
550	31	4,858	-14.2	54	257	2.7
500	31	5,570	-19.0	50	258	2.7
450	31	6,356	-24.5	51	270	2.5
400	31	7,194	-30.5	50	215	1.2
350	31	8,128	-37.6		181	2.1
300	31	9,173	-44.9		227	6.0
250	30	10,378	-49.2		236	8.2
200	30	11,841	-48.6		265	13.0
175	30	12,718	-48.6		263	9.9
150	30	13,729	-49.1		252	11.3
125	30	14,924	-49.3		255	9.7
100	30	16,386	-49.0		256	9.5
80	29	17,845	-48.2		242	8.4
60	28	19,741	-47.5		232	7.0
50	27	20,942	-47.6		213	4.9
40	22	22,420	-47.8		207	4.1
30	22	24,318	-47.3		90	1.4
20	8	26,992	-43.5			

ANNETTE, ALASKA (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	37	14.9	82	184	4.5
1,000	31	156	14.1	81	181	5.2
950	31	591	11.9	81	192	7.4
900	31	1,039	9.7	80	199	8.7
850	31	1,512	7.7	75	210	9.9
800	31	2,010	5.2	73	215	10.5
750	31	2,540	2.9	64	220	11.8
700	31	3,091	.0	62	240	12.8
650	31	3,686	- 3.0	56	248	14.4
600	31	4,312	- 6.0	50	254	16.5
550	31	4,989	- 9.9	47	256	17.1
500	31	5,717	-14.3	42	263	18.1
450	31	6,516	-19.6	39	275	18.3
400	31	7,373	-25.4	40	275	18.6
350	31	8,327	-32.6	39	290	15.3
300	31	9,394	-40.8		297	16.9
250	31	10,609	-49.8		299	11.3
200	28	12,047	-55.2		294	17.3
175	27	12,903	-54.4		286	15.3
150	27	13,890	-54.1		280	15.0
125	27	15,060	-53.5		298	11.3
100	25	16,495	-53.1		296	10.9
80	24	17,935	-52.0			
60	20	19,808	-50.6			
50	19	20,997	-50.0			
40	18	22,463	-49.0			
30	12	24,369	-47.1			
20						

ATHENS, GA. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	246	24.0	79	290	1.0
1,000	31	141				
950	31	596	24.8	61	268	2.7
900	31	1,066	21.9	61	314	2.7
850	31	1,560	18.4	64	303	3.7
800	31	2,077	14.7	65	323	3.3
750	31	2,623	11.2	64	327	3.9
700	31	3,194	7.9	59	333	5.2
650	31	3,807	4.2	58	324	6.4
600	30	4,449	.6	48	325	7.4
550	30	5,144	- 3.3	41	330	7.2
500	30	5,891	- 7.6	35	319	7.8
450	30	6,716	-12.7		301	8.9
400	30	7,593	-18.7		290	10.5
350	30	8,574	-25.5		282	13.4
300	28	9,669	-34.2		282	15.3
250	28	10,919	-43.9		274	19.0
200	28	12,381	-55.1		271	23.5
175	28	13,222	-60.9		277	21.6
150	27	14,164	-66.3		280	20.4
125	27	15,256	-69.9		283	13.4
100	26	16,585	-68.3		284	6.4
80	25	17,937	-64.5		119	1.2
60	24	19,719	-60.0		84	7.2
50	24	20,862	-57.9		88	14.0
40	22	22,283	-55.0		88	24.1
30	18	24,124	-52.5		91	29.1
20						

BETHEL ALASKA (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	14.9	78	246	2.7
1,000	31	57			244	4.5
950	31	492	11.3	80	269	4.5
900	31	937	8.4	83	208	3.7
850	31	1,408	6.0	78	200	5.1
800	31	1,903	3.6	77	209	5.6
750	31	2,430	1.0	75	211	5.8
700	31	2,976	- 1.8	69	203	4.1
650	31	3,567	- 4.9	65	202	2.9
600	31	4,188	- 8.6	57	216	3.5
550	31	4,860	-12.8	53	218	5.1
500	31	5,578	-17.4	47	239	5.6
450	31	6,365	-22.6	43	262	7.4
400	31	7,213	-28.8	43	266	7.4
350	31	8,155	-35.5	43	263	5.2
300	31	9,210	-43.1		258	5.2
250	31	10,419	-48.9		259	6.2
200	31	11,885	-47.8		277	9.3
175	31	12,764	-48.0		281	10.3
150	31	13,778	-48.7		269	9.9
125	31	14,973	-49.0		265	8.7
100	31	16,437	-48.5		261	7.0
80	31	17,906	-47.8		253	7.4
60	31	19,806	-46.9		225	3.1
50	31	21,013	-46.5		245	3.5
40	31	22,493	-46.3		223	1.0
30	29	24,409	-45.8		98	2.3
20	14	27,148	-42.8			

BISMARCK, N. DAK. (954 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	505	19.7	68	72	1.6
1,000	31	96				
950	31	550			71	1.7
900	31	1,012	19.9	52	148	.8
850	31	1,502	16.5	53	287	4.3
800	31	2,015	12.8	55	292	8.2
750	31	2,559	8.9	57	285	11.3
700	31	3,122	4.9	56	293	13.2
650	31	3,727	1.0	51	293	15.9
600	30	4,367	- 3.2	49	292	18.6
550	30	5,053	- 7.6	44	284	20.8
500	30	5,786	-12.2	40	282	22.0
450	30	6,592	-17.8	37	280	24.9
400	30	7,454	-24.0	39	276	29.5
350	30	8,414	-31.3	39	274	36.5
300	30	9,487	39.6		271	38.1
250	30	10,707	-48.9		263	42.5
200	30	12,147	-55.6		260	43.1
175	30	12,994	-56.3		260	36.3
150	30	13,970	-57.3		267	28.6
125	30	15,119	-58.7		271	25.4
100	29	16,513	-59.3		289	18.8
80	28	17,914	-58.3		285	7.4
60	27	19,740	-54.8		58	4.9
50	25	20,907	-53.4			
40	22	22,341	-51.7			
30	15	24,193	-49.7			
20						

BOISE, IDAHO (914 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	868	23.6	37	325	4.1
1,000	31	71				
950	31	533				
900	31	1,002	24.9	30	332	6.0
850	31	1,502	22.1	28	342	10.3
800	31	2,024	17.6	31	339	10.3
750	31	2,577	13.0	34	317	10.7
700	31	3,146	8.2	38	293	11.5
650	31	3,754	3.4	38	274	13.0
600	31	4,396	- 1.6	40	257	15.0
550	31	5,082	- 6.9	40	250	17.9
500	31	5,818	-12.3	38	251	17.7
450	31	6,623	-18.4	39	241	18.5
400	31	7,482	-24.8	37	243	19.8
350	31	8,438	-32.5		245	18.3
300	31	9,505	-40.9		239	19.8
250	31	10,720	-49.3		233	23.1
200	30	12,163	-54.3		234	23.5
175	30	13,018	-54.5		238	24.7
150	30	14,002	-55.4		248	27.2
125	27	15,162	-57.5			
100	25	16,559	-59.8			
80	19	17,947	-59.3			
60	15	19,768	-56.4			
50	12	20,930	-54.5			
40	12	22,365	-52.6			
30	10	24,229	-50.2			
20	6	26,897	-46.9			

BROWNSVILLE, TEX. (1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	26.7	84	137	10.5
1,000	31	126	26.3	83	136	13.0
950	31	581	24.0	76	145	18.5
900	31	1,051	22.0	64	148	15.5
850	31	1,546	19.6	53	146	10.5
800	31	2,066	16.7	48	147	6.8
750	31	2,614	13.6	46	136	4.9
700	31	3,190	9.9	45	150	4.7
650	31	3,805	6.2	41	144	4.1
600	31	4,454	2.3	39	142	4.7
550	30	5,155	- 1.9	38	153	3.7
500	30	5,903	- 6.7	39	129	3.3
450	30	6,729	-11.8	37	112	5.4
400	30	7,610	-17.9	38	136	2.7
350	30	8,594	-25.0	35	164	3.5
300	29	9,695	-33.4		187	5.2
250	29	10,948	-43.4		182	5.1
200	28	12,411	-54.9		140	6.2
175	28	13,253	-60.7		156	6.0
150	28	14,199	-65.9		119	4.7
125	28	15,293	-70.1		115	4.3
100	28	16,614	-70.9		80	9.5
80	24	17,939	-68.8		86	14.8
60	22	19,690	-62.4		89	26.6
50	22	20,825	-58.7		86	31.1
40	21	22,232	-56.1		85	38.9
30	18	24,077	-53.2		91	47.0
20	14	26,713	-49.4			

BUFFALO, N. Y. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	182	18.8	80	274	2.7
1,000	31	115				
950	31	561	18.8	69	267	8.9
900	31	1,020	16.0	70	271	12.2
850	31	1,504	12.5	71	268	12.0
800	31	2,010	9.3	68	268	13.0
750	31	2,550	6.2	62	276	14.4
700	31	3,106	3.2	59	276	17.3
650	31	3,705	.0	51	282	19.8
600	31	4,341	- 3.2	42	283	24.1
550	31	5,025	- 6.9	38	284	26.2
500	31	5,763	-11.3		282	30.1
450	31	6,568	-16.8		280	32.8
400	31	7,438	-22.8	40	278	37.5
350	31	8,403	-29.9	39	280	44.7
300	31	9,482	-38.1		277	49.1
250	31	10,710	-47.8		276	60.2
200	31	12,154	-55.7		279	61.2
175	31	12,999	-58.2		280	54.0
150	31	13,965	-59.8		281	44.3
125	31	15,098	-61.2		283	34.0
100	30	16,483	-61.1		280	21.6
80	30	17,874	-58.4		284	13.2
60	28	19,699	-54.5		266	2.7
50	26	20,871	-53.2		81	2.7
40	23	22,312	-52.1		93	8.9
30	21	24,179	-49.7		97	14.8
20	16	26,852	-46.3		91	17.3

BURRWOOD, LA. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	27.2	84	209	1.9
1000	31	147	26.7	78	180	1.9
950	31	601	23.9	73	163	2.5
900	31	1,071	21.1	64	136	.6
850	31	1,563	18.1	61	109	1.2
800	31	2,081	15.0	56	112	1.0
750	31	2,624	12.2	48	99	1.7
700	31	3,199	9.0	43	229	.6
650	31	3,815	5.5	42	267	2.1
600	31	4,459	1.8	42	263	2.5
550	30	5,161	- 2.4	42	265	1.9
500	30	5,907	7.0	40	263	2.7
450	30	6,733	-12.4	38	268	2.7
400	27	7,610	-18.9	38	247	1.9
350	27	8,591	-26.0	37	155	1.6
300	27	9,688	-34.4		118	3.1
250	25	10,939	-44.1		124	6.0
200	25	12,399	-55.3		123	4.9
175	25	13,239	-61.3		120	8.9
150	25	14,182	-66.8		126	10.3
125	21	15,273	-70.8		122	7.6
100	20	16,596	-69.5		72	8.4
80	18	17,940	-65.6		86	19.4
60	13	19,694	-61.3			
50	12	20,830	-58.6			
40	12	22,240	-55.8			
30	10	24,086	-52.5			
20	6	26,731	-47.0			
15						

CARIBOU, ME. (990 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	191	13.5	83	256	3.1
1000	31	105				
950	31	546	14.6	67	260	10.5
900	31	996	11.8	66	277	11.5
850	31	1,472	8.6	65	284	11.5
800	31	1,970	5.2	66	285	14.8
750	31	2,503	2.2	62	284	15.7
700	31	3,049	- .8	58	280	17.3
650	31	3,645	- 3.9	51	276	22.5
600	31	4,265	- 7.4	43	278	24.7
550	31	4,944	-11.7	41	277	25.3
500	31	5,660	-16.4	40	276	31.3
450	30	6,458	-21.6	40	280	34.4
400	30	7,306	-27.6	41	278	38.7
350	30	8,250	-35.2		278	47.4
300	30	9,306	-43.3		277	50.9
250	29	10,519	-50.4		278	56.9
200	28	11,958	-53.0		270	55.4
175	27	12,817	-53.0		276	47.4
150	27	13,807	-54.2		280	37.7
125	27	14,973	-54.9		274	33.0
100	27	16,396	-55.3		271	27.2
80	26	17,822	-53.5		262	18.6
60	25	19,681	-51.3		240	4.5
50	25	20,867	-50.7		111	1.7
40	25	22,321	-50.3		102	8.0
30	21	24,206	48.7		96	13.8
20	17	26,895	-45.4		102	13.8
15	11	28,837	-42.9			

CHARLESTON, S. C. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	13	24.1	90	156	2.9
1000	31	150	25.3	81	177	5.1
950	31	606	24.1	69	202	5.4
900	31	1,076	21.6	69	248	3.1
850	31	1,570	18.2	70	312	3.9
800	31	2,087	14.7	70	337	5.4
750	31	2,640	11.4	68	338	6.0
700	31	3,205	8.1	62	320	6.4
650	31	3,825	4.6	55	314	6.4
600	31	4,463	1.3	48	313	6.8
550	31	5,170	- 2.3		295	7.0
500	31	5,911	- 6.5		301	9.7
450	31	6,740	-11.9		293	9.7
400	31	7,619	-18.0		292	8.9
350	31	8,602	-25.3		296	9.7
300	30	9,704	-33.6		289	11.8
250	30	10,958	-43.2		294	16.7
200	30	12,425	-54.6		291	24.7
175	30	13,267	-60.7		292	24.5
150	30	14,213	-66.4		306	16.7
125	29	15,306	-70.4		302	11.7
100	28	16,632	-68.4		318	3.3
80	25	17,985	-64.6		97	4.9
60	24	19,766	-59.5		88	16.3
50	23	20,914	-57.5		95	21.4
40	21	22,327	-55.6		92	26.0
30	20	24,171	-52.6		93	32.1
20	9	26,818	-49.1			
15						

COLD BAY, ALASKA (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	29	11.8	89	256	5.8
1000	31	67			276	6.8
950	31	499	9.3	88	280	7.2
900	31	942	8.0	85	292	5.1
850	31	1,412	6.1	80	293	4.3
800	31	1,908	4.5	71	291	5.2
750	31	2,437	2.4	62	304	5.8
700	31	2,987	- .2	57	299	6.8
650	31	3,579	- 3.3	49	300	6.2
600	31	4,206	- 6.8	42	311	6.8
550	31	4,878	-10.9	39	307	7.0
500	31	5,605	-15.7	36	328	9.7
450	31	6,398	-21.2	41	324	10.7
400	31	7,250	-27.5	42	325	15.2
350	31	8,196	-34.3		323	17.9
300	31	9,256	-41.7		333	16.3
250	31	10,470	-48.0		336	26.6
200	31	11,931	-50.0		322	18.1
175	30	12,811	-50.0		321	15.5
150	30	13,815	-50.7		311	15.9
125	30	15,000	-51.4		298	16.9
100	29	16,450	-50.8		307	11.3
80	29	17,902	-50.3		319	5.4
60	28	19,793	-48.9		128	2.5
50	27	20,968	-48.1		149	3.9
40	24	22,436	-47.8		89	5.6
30	14	24,339	-46.8			
20						
15						

COLUMBIA, MO. (986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	238	24.7	68	141	4.1
1000	31	115				
950	31	572	25.6	56	162	8.9
900	31	1,043	22.8	55	201	9.3
850	31	1,539	19.7	54	237	9.3
800	31	2,059	16.4	52	261	11.5
750	31	2,607	12.8	53	279	13.4
700	31	3,181	8.8	54	288	15.5
650	31	3,792	4.5	51	293	17.5
600	31	4,437	.1	50	300	20.4
550	31	5,127	- 4.5	46	300	20.0
500	31	5,873	- 8.8	40	295	19.8
450	31	6,688	-13.7		289	22.1
400	31	7,567	-19.8		288	25.3
350	31	8,544	-26.9		276	29.1
300	31	9,635	-35.4		273	30.9
250	31	10,878	-45.2		270	31.5
200	30	12,333	-55.7		268	35.0
175	30	13,174	-60.1		265	34.6
150	30	14,124	-64.2		270	30.9
125	29	15,231	-66.6		273	20.8
100	26	16,576	-66.0		286	10.5
80	25	17,940	-62.6		336	3.7
60	24	19,738	-57.5		77	5.4
50	24	20,894	-55.4		86	9.9
40	23	22,324	-53.1		88	16.5
30	17	24,184	-50.8		92	21.4
20						
15						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20–Continued

AUGUST 1956

DAYTON, OHIO (981 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	297	22.0	68	237	1.9
1,000	31	127				
950	31	573	21.4	66	240	5.1
900	31	1,041	18.5	68	263	9.3
850	31	1,529	15.4	67	280	10.3
800	31	2,041	12.6	63	293	12.4
750	31	2,581	9.5	57	294	15.2
700	31	3,150	6.4	51	298	17.3
650	31	3,757	3.0	50	297	20.4
600	30	4,402	- .7	48	295	25.1
550	29	5,094	- 4.7	45	293	25.8
500	29	5,837	- 8.9	38	292	28.4
450	29	6,653	-13.8		285	29.3
400	29	7,531	-19.8		287	32.4
350	29	8,507	-27.1		287	35.2
300	29	9,597	-35.8		287	37.9
250	28	10,836	-45.6		282	41.0
200	28	12,289	-55.3		284	45.5
175	28	13,131	-59.8		280	43.1
150	26	14,087	-63.3		279	40.2
125	24	15,203	-65.1		280	30.7
100	23	16,563	-63.9		289	15.3
80	23	17,938	-61.2		298	7.0
60	22	19,747	-56.3		67	4.1
50	22	20,909	-54.5		78	8.5
40	22	22,342	-52.9		88	14.0
30	17	24,206	-50.9		90	22.7
20	9	26,877	-47.4			

***DENVER, COLO. (840 MB.)**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	17	1,608	18.9	52	225	2.3
1,000	17	73				
950	17	534				
900	17	1,011				
850	17	1,506				
800	17	2,029	18.5		272	2.7
750	17	2,584	14.7	47	252	1.2
700	17	3,158	10.3	50	266	3.1
650	17	3,773	5.4	56	290	4.9
600	17	4,418	.3	62	272	6.8
550	17	5,109	- 5.0	67	293	9.7
500	17	5,851	-10.3	65	279	11.7
450	17	6,662	-15.8	60	274	11.8
400	17	7,533	-21.8		268	14.0
350	16	8,498	-29.4		258	16.9
300	16	9,578	-38.1		251	18.6
250	15	10,800	-47.9		261	20.0
200	15	12,240	-56.4		261	23.7
175	15	13,082	-59.2		257	25.8
150	15	14,042	-61.0		260	22.5
125	13	15,171	-63.0		263	16.5
100	11	16,525	-63.4		276	10.7
80	10	17,897	-62.1			
60	8	19,691	-58.3			
50	8	20,844	-55.9			
40	7	22,274	-54.5			
30						
20						

DODGE CITY, KANS. (923 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	792	26.7	39	151	7.4
1,000	31	76				
950	31	537				
900	31	1,018	27.7	36	160	12.8
850	31	1,522	24.7	37	179	15.9
800	31	2,050	20.7	39	196	15.3
750	31	2,606	16.3	43	208	14.6
700	31	3,186	11.4	49	224	13.2
650	31	3,805	6.3	55	237	12.0
600	31	4,451	1.1	57	257	9.9
550	31	5,145	- 3.9	50	279	9.5
500	31	5,890	- 8.7	43	281	10.1
450	31	6,706	-13.9		276	13.4
400	31	7,584	-19.9		274	15.0
350	31	8,558	-27.4		270	16.5
300	31	9,647	-36.0		265	20.4
250	31	10,886	-45.7		264	20.8
200	31	12,335	-56.0		254	22.5
175	31	13,174	-60.6		258	21.6
150	31	14,124	-64.0		261	19.2
125	29	15,226	-67.2		260	14.8
100	28	16,568	-66.6		257	6.0
80	27	17,928	-62.9		348	1.6
60	25	19,719	-58.2		98	8.0
50	23	20,868	-56.4		90	8.4
40	20	22,295	-53.8		87	16.1
30	14	24,147	-51.6		89	25.6
20						

EL PASO, TEX. (882 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,195	27.4	[illegible]	165	1.9
1,000	31	62				
950	31	533				
900	31	1,015				
850	31	1,522	26.0	32	175	2.5
800	31	2,052	21.9	36	189	2.5
750	31	2,609	17.1	[illegible]	209	3.5
700	31	3,192	12.1	50	235	2.3
650	31	3,812	6.9	56	235	2.1
600	31	4,460	1.7	60	262	1.7
550	31	5,157	3.3	59	[illegible]	1.6
500	31	5,904	- 8.1	52	356	.6
450	31	6,725	-13.1	36	275	2.7
400	31	7,603	-19.2		263	4.7
350	31	8,582	-26.1		279	5.1
300	31	9,678	-34.4		276	8.5
250	31	10,925	-44.3		280	10.3
200	31	12,383	-55.2		275	13.2
175	31	13,223	-61.0		274	14.6
150	31	14,167	-66.1		272	13.6
125	27	15,268	-69.4		254	6.6
100	26	16,594	-69.5		92	3.3
80	25	17,929	-66.0		88	8.0
60	24	19,693	-61.0		83	18.5
50	24	20,831	-58.5		86	24.5
40	23	22,239	-55.8		84	30.5
30	19	24,083	-53.4		89	33.0
20	14	26,711	-49.3		86	42.0

ELY, NEV. (810 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,908	[illegible]	19	[illegible]	3.3
1,000	31	30				
950	31	497				
900	31	[illegible]				
850	31	1,484				
800	31	2,015	23.3		214	4.9
750	31	2,579	19.1		[illegible]	[illegible]
700	31	3,160	13.7	[illegible]	237	9.7
650	[illegible]	[illegible]	8.0	[illegible]	[illegible]	9.1
600	31	4,431	1.8	34	[illegible]	10.5
550	31	5,125	- 4.6	43	[illegible]	10.1
500	31	5,866	-11.6	45	244	[illegible]
450	31	6,680	-16.8	[illegible]	247	16.5
400	31	7,541	-22.8		244	21.4
350	31	8,505	-30.2		245	22.0
300	31	9,582	-38.5		247	[illegible]
250	31	10,809	-47.7		[illegible]	[illegible]
200	31	12,254	55.1		233	28.7
175	29	13,105	56.2		234	24.9
150	29	14,079	-58.3		[illegible]	20.2
125	29	15,219	-61.0		[illegible]	13.0
100	29	16,598	-62.8		257	4.1
80	28	17,975	-60.8		39	4.3
60	28	19,782	-56.7		75	10.1
50	28	20,940	-55.2		76	14.2
40	26	22,370	-52.9		81	16.3
30	16	24,236	-50.8			
20						

FAIRBANKS, ALASKA (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	135	16.5	70	280	2.1
1,000	31	61				
950	31	497	13.9	64	252	4.1
900	31	950	10.3	68	251	4.1
850	31	1,423	6.8	71	246	7.4
800	31	1,918	3.4	73	237	8.0
750	31	2,442	.0	73	225	7.8
700	31	2,989	- 3.1	70	234	8.4
650	31	3,572	- 6.3	64	237	9.3
600	31	4,194	- 9.9	58	233	8.5
550	31	4,860	-14.1	53	234	8.0
500	31	5,577	-18.7	50	225	6.4
450	31	6,360	-24.2	48	209	7.0
400	31	7,202	-30.3	47	218	7.2
350	31	8,137	-37.3	43	226	7.2
300	31	9,183	-45.4		244	6.0
250	31	10,377	-52.0		208	4.3
200	31	11,827	-49.0		234	8.9
175	31	12,704	-48.1		205	8.4
150	31	13,718	-48.4		220	8.9
125	31	14,916	-48.6		221	11.1
100	31	16,383	-48.1		237	9.1
80	30	17,849	-47.2		227	10.3
60	29	19,755	-46.6		233	6.4
50	29	20,962	-46.8		243	4.3
40	25	22,445	-46.8		215	2.3
30	15	24,361	-46.1			
20						

FORT WORTH, TEX. (992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	178	30.5	43	160	4.9
1,000	31	110				
950	31	571	29.3	39	160	16.9
900	31	1,048	25.5	43	164	15.9
850	31	1,547	21.5	49	169	12.0
800	31	2,069	17.0	55	173	8.4
750	31	2,621	12.9	53	179	4.7
700	31	3,192	9.3	45	144	1.9
650	31	3,809	5.4	39	76	2.1
600	31	4,451	1.3	37	31	2.1
550	31	5,147	- 3.1	35	360	2.5
500	31	5,893	- 8.0	33	317	2.7
450	31	6,714	-13.5		276	4.3
400	30	7,589	-19.9	31	263	5.1
350	30	8,564	-27.1		247	7.4
300	30	9,655	-35.6		230	10.3
250	30	10,896	-45.0		226	16.7
200	30	12,351	-55.4		230	20.4
175	30	13,191	-60.9		228	19.6
150	27	14,139	-66.0		230	14.2
125	25	15,231	-69.5		235	8.5
100	20	16,559	-69.5		343	1.6
80	17	17,902	-64.9		94	6.0
60	16	19,677	-60.8		82	12.0
50	15	20,817	-58.3		79	18.5
40	13	22,225	-56.0		84	25.8
30	11	24,070	-52.8		86	31.7
20	10	26,719	-48.6			

GLASGOW, MONT. (933 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	695	20.8	50	25	2.3
1,000	31	88				
950	31	540				
900	31	1,009	21.2	42	5	3.3
850	31	1,501	17.7	43	315	4.7
800	31	2,016	13.6	47	283	7.2
750	31	2,562	9.3	52	282	9.1
700	31	3,124	4.9	54	281	11.1
650	31	3,727	.4	53	281	15.5
600	31	4,361	- 3.5	47	289	18.1
550	31	5,042	- 7.9	40	290	18.1
500	31	5,777	-13.0		287	18.8
450	31	6,577	-18.7		285	20.6
400	31	7,438	-25.0		279	23.5
350	31	8,394	-32.5		273	23.9
300	31	9,461	-41.0		271	26.8
250	31	10,674	-50.0		268	27.8
200	29	12,118	-54.5		263	28.2
175	28	12,972	-54.6		276	27.8
150	28	13,956	-55.5		289	23.9
125	28	15,114	-57.4		280	19.0
100	25	16,524	-58.3		310	12.6
80	24	17,932	-56.9		335	5.2
60	24	19,765	-54.4		59	7.6
50	24	20,936	-53.3		54	6.8
40	20	22,377	-51.3		70	10.1
30	13	24,258	-49.1			
20						

GRAND JUNCTION, COLO. (852 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	24.2	24	46	1.9
1,000	31	42				
950	31	505				
900	31	986				
850	31	1,494			27	2.1
800	31	2,024	22.6	27	234	3.7
750	31	2,584	18.0	30	241	6.2
700	31	3,165	12.9	35	254	7.6
650	31	3,785	7.4	40	254	8.2
600	31	4,434	1.8	48	263	9.3
550	31	5,128	- 4.0	54	259	10.5
500	31	5,872	- 9.8	52	258	14.0
450	31	6,686	-15.3	45	259	17.5
400	31	7,556	-21.6	40	253	19.8
350	31	8,526	-28.7	37	248	24.1
300	30	9,610	-37.3	36	244	27.4
250	30	10,842	-47.0		242	31.1
200	30	12,286	-56.0		247	26.0
175	30	13,128	-58.9		242	30.3
150	30	14,090	-60.8		248	27.2
125	30	15,215	-63.2		248	24.3
100	26	16,582	-64.5		281	10.1
80	26	17,954	-61.5		355	1.7
60	25	19,755	-57.6			
50	25	20,911	-55.5			
40	25	22,338	-53.4			
30	11	24,196	-51.5			
20						

GREAT FALLS, MONT. (888 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	19.3	47	333	4.5
1,000	31	87				
950	31	540				
900	31	1,010				
850	31	1,502	17.6	45	335	6.4
800	31	2,017	13.9	48	308	4.1
750	31	2,562	10.0	51	281	5.6
700	31	3,127	5.5	56	263	8.7
650	31	3,731	.9	59	261	13.2
600	31	4,366	- 3.5	54	261	15.3
550	31	5,047	8.0	49	267	16.3
500	31	5,782	-12.9	40	272	16.5
450	30	6,581	-18.7	38	267	17.7
400	29	7,440	-24.9	36	268	18.6
350	29	8,396	-32.4		258	19.8
300	28	9,460	-40.8		256	22.0
250	28	10,675	-50.0		254	21.2
200	28	12,113	-53.7		255	26.8
175	27	12,977	-52.9		256	23.7
150	26	13,968	-54.5		263	19.8
125	26	15,130	-56.7		266	18.8
100	24	16,537	-57.2		277	8.4
80	24	17,949	-56.7		319	3.5
60	22	19,776	-54.7		30	3.9
50	22	20,947	-53.3		71	5.2
40	21	22,391	-51.3		77	8.9
30	18	24,277	-49.4		98	8.9
20	5	26,961	-46.4			

GREEN BAY, WIS. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	210	18.0	90	251	1.0
1,000	31	111				
950	31	559	19.3	72	276	4.7
900	31	1,017	16.7	68	279	8.2
850	31	1,502	13.4	68	287	12.4
800	31	2,010	10.3	59	290	13.6
750	31	2,552	7.3	55	291	16.3
700	31	3,109	3.8	52	293	18.1
650	31	3,711	.2	49	294	21.8
600	31	4,345	3.4	44	293	24.7
550	31	5,025	- 7.7	42	290	27.2
500	31	5,763	-12.3	40	292	29.5
450	30	6,573	-17.5		291	32.8
400	30	7,435	-23.5		290	37.7
350	30	8,396	-31.0	32	289	45.6
300	30	9,470	-39.2		295	44.9
250	30	10,695	-48.2		283	48.2
200	30	12,139	-55.2		276	51.9
175	30	12,988	-56.9		284	46.8
150	30	13,958	-58.8			
125	29	15,094	-60.7			
100	28	16,486	-60.6			
80	28	17,880	-58.9			
60	28	19,702	-54.9		55	6.6
50	26	20,872	-52.9		14	4.7
40	24	22,318	-51.2			
30	19	24,193	-49.6			
20						

GREENSBORO, N. C. (986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	273	22.7	82	208	1.4
1,000	31	145				
950	31	598	23.9	64	216	4.5
900	31	1,067	21.1	63	265	3.7
850	31	1,560	17.6	67	291	5.2
800	31	2,076	14.1	68	296	7.2
750	31	2,623	11.0	60	307	8.2
700	31	3,191	7.3	58	305	9.9
650	31	3,810	4.0	53	305	11.7
600	31	4,446	.8	44	306	14.0
550	31	5,147	3.0	38	304	14.8
500	31	5,890	- 7.6	34	303	16.5
450	31	6,715	-12.7		299	18.3
400	31	7,592	-18.8		287	20.0
350	31	8,573	-25.8		284	20.6
300	31	9,672	-34.1		272	23.5
250	31	10,922	-43.8		271	24.9
200	31	12,385	-54.8		272	28.2
175	31	13,229	-60.2		273	27.8
150	31	14,178	-65.2		280	24.1
125	31	15,281	-68.1		283	22.3
100	30	16,628	-66.2		281	12.4
80	28	17,988	-62.8		275	4.5
60	27	19,779	-57.9		76	1.9
50	27	20,934	-56.0		76	9.5
40	27	22,358	-54.5		86	16.1
30	20	24,204	-51.7		91	27.4
20	11	26,863	-48.4		92	27.8

HATTERAS, N. C. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	24.6	85	207	2.5
1,000	31	141	24.0	81	211	4.5
950	31	591	22.0	72	251	6.6
900	31	1,058	19.4	68	275	6.0
850	31	1,548	16.6	66	281	7.2
800	31	2,062	13.7	63	286	7.6
750	31	2,606	10.3	61	294	8.7
700	31	3,175	7.1	57	294	9.3
650	31	3,786	3.8	48	287	10.5
600	31	4,428	.5	42	284	11.7
550	31	5,124	- 3.2		290	13.4
500	31	5,869	- 7.6	34	294	15.9
450	31	6,690	-12.7		297	17.9
400	31	7,571	-18.6		288	21.6
350	31	8,552	-25.8		290	23.1
300	31	9,650	-33.9		284	21.0
250	31	10,901	-43.5		283	22.9
200	31	12,363	-54.7		275	26.8
175	30	13,207	-60.1		277	25.8
150	30	14,156	-64.8		282	26.2
125	29	15,258	-67.4		285	19.6
100	27	16,603	-66.2		295	5.6
80	26	17,962	-63.2		234	2.1
60	23	19,756	-58.3		79	9.5
50	22	20,912	-56.2		87	15.9
40	22	22,334	-54.6		89	21.8
30	18	24,180	-52.3		86	28.4
20	8	26,832	-48.0			

HILO, T. H. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	25.8	73	64	5.8
1,000	31	140	24.2	75	65	6.8
950	31	591	20.8	81	73	8.4
900	31	1,055	17.6	87	73	6.6
850	31	1,542	14.5	89	75	5.6
800	31	2,054	12.8	74	82	8.5
750	31	2,601	11.0	50	89	8.4
700	31	3,169	8.8	39	94	8.4
650	31	3,785	5.3	36	90	7.6
600	31	4,429	1.9	33	101	6.0
550	31	5,126	- 2.0		106	4.7
500	31	5,877	- 6.4		140	2.5
450	31	6,702	-11.7		203	3.3
400	31	7,586	-17.9		253	7.0
350	31	8,569	-25.3		255	11.8
300	30	9,668	-34.0		267	18.3
250	30	10,917	-44.1		271	25.1
200	30	12,374	-56.0		271	26.8
175	30	13,211	-62.1		275	25.1
150	30	14,150	-67.5		263	23.9
125	29	15,238	-71.2		259	12.2
100	29	16,550	-72.3		160	5.6
80	26	17,872	-68.8		96	15.5
60	24	19,617	-63.2		94	34.2
50	24	20,746	-59.7		92	36.5
40	22	22,147	-56.9		91	41.8
30	18	23,979	-53.6		93	48.2
20	9	26,613	-47.9			

INTERNAT. FALLS, MINN. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	360	15.9	80	173	1.2
1,000	31	102				
950	31	545	18.0	64	237	2.1
900	31	1,003	15.3	65	287	6.4
850	31	1,486	12.1	65	295	9.9
800	31	1,991	9.0	63	297	12.2
750	31	2,528	5.7	56	296	14.6
700	31	3,084	2.5	52	301	17.7
650	31	3,685	- .9	45	302	19.4
600	31	4,315	- 4.5	43	299	22.7
550	31	4,992	- 8.6	42	295	24.7
500	31	5,728	-13.4	39	297	26.2
450	31	6,527	-18.8	37	289	30.5
400	30	7,383	-25.4	35	296	35.0
350	30	8,337	-32.5		294	42.2
300	30	9,404	-40.9		291	46.8
250	30	10,618	-49.5		286	53.2
200	28	12,058	-54.3		289	55.6
175	25	12,906	-54.1		289	50.3
150	24	13,894	-55.0		289	44.1
125	21	15,053	-56.3		292	33.6
100	21	16,469	-55.9		296	22.3
80	19	17,879	-55.6		308	14.4
60	19	19,722	-53.0		344	6.8
50	18	20,904	-51.6		23	3.7
40	17	22,358	-50.2		77	5.4
30						
20						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

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* Observations began August 15.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

JACKSON, MISS. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	101	24.7	80	192	1.6
1,000	31	142	25.3	73	196	1.6
950	31	597	25.1	66	182	4.5
900	31	1,068	22.2	56	153	2.7
850	31	1,563	19.1	57	104	2.3
800	31	2,081	15.9	53	85	4.7
750	31	2,629	12.5	51	77	5.8
700	31	3,202	8.9	49	74	6.0
650	31	3,815	5.0	48	54	5.4
600	31	4,460	1.2	46	32	5.1
550	31	5,157	2.8	43	7	3.7
500	31	5,904	- 7.2	37	330	3.7
450	30	6,727	-12.3		316	3.9
400	30	7,607	-18.2	38	295	4.9
350	30	8,590	-25.2		283	8.2
300	30	9,691	-33.6		274	10.9
250	30	10,944	-43.3		267	16.9
200	30	12,408	-54.9		252	18.1
175	30	13,249	-61.0		255	18.6
150	29	14,196	-66.8		254	14.8
125	28	15,287	-70.7		239	7.6
100	26	16,611	-69.8		249	.4
80	23	17,948	-65.8		82	10.3
60	23	19,721	-59.9		92	16.3
50	19	20,857	-57.9		86	21.8
40	17	22,271	-55.7		83	27.4
30	13	24,113	-52.1		94	33.0
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JACKSONVILLE, FLA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	25.0	89	184	4.1
1,000	31	155	25.0	82	173	5.8
950	31	608	23.7	70	193	5.4
900	31	1,077	21.0	69	251	2.7
850	31	1,570	17.7	71	317	3.1
800	31	2,086	14.3	71	344	3.3
750	31	2,631	11.1	63	328	2.7
700	31	3,203	8.0	54	305	2.1
650	31	3,815	4.7	50	294	3.7
600	31	4,460	1.2	46	309	4.3
550	31	5,155	2.8	47	301	4.3
500	30	5,905	- 7.2	45	294	3.1
450	30	6,724	-12.4	44	283	3.1
400	30	7,608	-18.3	44	274	2.7
350	29	8,589	-25.4	41	276	3.9
300	29	9,688	-33.7	41	278	5.4
250	29	10,940	-43.6		283	7.6
200	29	12,402	-55.1		276	8.7
175	29	13,242	-61.3		294	9.7
150	29	14,184	-67.3		296	10.3
125	29	15,269	-71.4		306	5.2
100	29	16,586	-70.8		56	2.5
80	29	17,920	-66.5		101	9.5
60	29	19,682	-61.4		86	15.3
50	27	20,816	-59.1		85	21.4
40	26	22,224	-56.4		84	28.9
30	25	24,063	-53.7		88	36.7
20	17	26,683	-49.8		93	39.6
15	9	28,574	-46.8			

KING SALMON, ALASKA (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	15.7	68	186	1.6
1,000	31	67			253	4.9
950	31	498	11.3	74	228	2.9
900	31	949	8.2	76	197	3.3
850	31	1,418	5.7	76	162	3.7
800	31	1,912	3.1	75	192	2.9
750	31	2,441	.5	74	212	1.7
700	31	2,985	- 2.2	67	229	1.7
650	31	3,577	5.1	59	263	1.7
600	31	4,195	8.8	51	304	2.3
550	31	4,866	-13.1	49	300	3.5
500	30	5,589	-17.7	47	302	4.5
450	30	6,377	-23.5	44	285	6.2
400	30	7,219	-29.9	44	301	8.2
350	30	8,155	-37.1		298	10.1
300	30	9,201	-44.9		297	12.2
250	30	10,402	-49.7		294	15.5
200	30	11,859	-49.3		287	13.0
175	30	12,733	-49.7		288	11.8
150	30	13,740	-50.1		280	10.5
125	29	14,928	-50.5		264	8.7
100	29	16,379	-51.0		260	7.0
80	29	17,832	-50.2		258	5.8
60	28	19,717	-49.0		253	2.7
50	26	20,919	-48.5		276	1.4
40	24	22,386	-48.3		102	1.4
30	22	24,281	-47.2		61	2.3
20	14	27,009	-44.2		43	2.5
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KOTZEBUE, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	11.8	80	267	2.9
1,000	31	65			278	3.9
950	31	496	8.5	76	249	.8
900	31	936	6.1	74	250	1.6
850	31	1,403	4.0	67	216	3.5
800	31	1,894	1.8	67	229	6.8
750	31	2,418	- 1.1	64	234	8.4
700	31	2,959	- 3.7	63	240	6.6
650	30	3,548	- 7.0	59	255	8.5
600	30	4,163	-10.2	52	256	9.3
550	30	4,832	-14.4	51	249	11.5
500	30	5,544	-19.3	49	247	13.0
450	30	6,324	-24.7	45	241	9.5
400	30	7,166	-30.6	44	248	11.8
350	29	8,103	-37.5	43	230	7.4
300	29	9,148	-45.3		212	11.5
250	29	10,342	-52.5		248	10.9
200	29	11,792	-48.2		251	7.0
175	29	12,673	-47.2		247	9.5
150	28	13,697	-47.5		265	8.0
125	28	14,899	-47.9		250	7.8
100	28	16,371	-47.3		237	6.4
80	28	17,847	-46.8		263	5.2
60	28	19,754	-46.6		242	1.4
50	26	20,968	-46.7		198	3.9
40	26	22,447	-46.5		193	5.1
30	22	24,372	-46.0		199	5.2
20	14	27,112	-42.8			
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LAKE CHARLES, LA. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	26.2	82	191	3.7
1,000	31	139	26.6	76	182	6.8
950	31	593	24.6	71	166	8.2
900	31	1,065	21.9	66	139	7.2
850	31	1,560	19.0	61	111	7.4
800	31	2,079	16.0	55	98	7.0
750	31	2,625	12.8	51	92	7.8
700	31	3,202	9.4	48	83	4.5
650	30	3,814	5.7	46	92	3.3
600	30	4,463	1.8	44	88	1.9
550	30	5,161	- 2.2	41	31	1.4
500	30	5,910	- 6.7	40	345	3.3
450	30	6,735	-12.1		292	2.9
400	30	7,617	-18.2	36	251	3.5
350	29	8,601	-25.3		233	5.1
300	29	9,700	-33.7		225	6.2
250	28	10,954	-43.5		203	7.4
200	28	12,417	-54.9		186	11.1
175	27	13,258	-60.9		171	9.5
150	27	14,202	-66.4		180	7.2
125	25	15,294	-70.1		180	5.4
100	21	16,622	-69.7		84	7.6
80	20	17,958	-66.1		96	13.0
60	20	19,726	-60.7		95	18.8
50	19	20,862	-58.9		87	25.6
40	18	22,269	-55.9		90	33.8
30	18	24,111	-53.2		94	36.3
20	11	26,748	-49.1			
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LANDER, WYO. (830 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,696	20.4	38	248	3.9
1,000	31	49				
950	31	508				
900	31	986				
850	31	1,489				
800	31	2,015	20.1	30	319	4.1
750	31	2,569	15.8	33	315	3.9
700	31	3,148	11.0	37	293	5.6
650	31	3,763	5.6	42	272	6.8
600	31	4,409	.0	47	281	11.3
550	31	5,097	- 6.0	52	273	14.6
500	31	5,837	-12.0	54	264	17.5
450	31	6,642	-17.8	45	261	18.8
400	31	7,505	-24.2		254	24.3
350	31	8,463	-31.5		249	29.7
300	31	9,536	-39.4		249	32.8
250	31	10,760	-48.1		247	35.2
200	31	12,204	-54.9		246	38.1
175	31	13,056	-55.8		248	36.7
150	31	14,033	-57.3		254	32.2
125	31	15,180	-59.7		256	19.6
100	31	16,567	-61.7		263	9.5
80	30	17,952	-59.6		345	2.9
60	28	19,774	-55.9		54	8.0
50	28	20,939	-54.1		85	10.3
40	23	22,378	-52.3		84	9.9
30	15	24,236	-50.7			
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LAS VEGAS, NEV. (934 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	660	32.7	11	222	9.9
1,000	31	36				
950	31	504				
900	31	993	31.7		224	14.2
850	31	1,502	27.5		226	13.2
800	31	2,033	22.7		221	11.8
750	31	2,591	17.7		212	10.7
700	31	3,173	12.4	25	210	8.7
650	31	3,791	7.0	30	224	7.2
600	31	4,440	1.9	31	244	7.2
550	31	5,135	- 3.1		245	9.1
500	31	5,883	- 8.3		249	12.4
450	31	6,697	-14.3		254	15.0
400	31	7,574	-21.2		250	17.3
350	31	8,544	-29.0		248	21.8
300	31	9,627	-37.5		245	23.9
250	31	10,860	-46.8		246	27.0
200	31	12,308	-55.6		243	31.9
175	30	13,155	-58.5		244	31.1
150	28	14,117	-61.4		247	26.0
125	26	15,241	-64.5		239	19.0
100	23	16,600	-65.6		234	7.4
80	20	17,964	-63.2		96	3.7
60	20	19,754	-58.4		80	10.5
50	20	20,907	-56.4		82	17.1
40	19	22,327	-54.2		86	21.6
30	16	24,189	-51.3		92	20.2
20	6	26,828	-49.0			

LITTLE ROCK, ARK. (1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	27.2	66	172	4.9
1,000	31	125	27.7	62	162	5.2
950	31	586	27.5	52	177	11.3
900	31	1,058	24.1	57	191	9.5
850	31	1,556	20.2	62	206	5.4
800	31	2,077	16.8	60	227	2.3
750	31	2,630	13.3	56	259	1.0
700	31	3,201	9.3	53	9	2.3
650	31	3,819	5.0	52	4	3.9
600	30	4,462	.9	51	355	6.8
550	30	5,156	- 3.4	44	344	7.4
500	30	5,904	- 7.7	35	331	7.6
450	30	6,728	-12.5		320	8.2
400	30	7,606	-18.5		298	9.1
350	30	8,587	-25.7		280	10.9
300	30	9,686	-34.1		272	14.2
250	30	10,937	-43.7		257	20.4
200	30	12,401	-54.5		246	22.3
175	30	13,245	-60.0		251	21.2
150	30	14,195	-64.9		253	15.7
125	28	15,291	-68.7		265	13.2
100	25	16,625	-67.8		302	3.9
80	24	17,977	-63.9		73	4.7
60	24	19,764	-58.4		83	10.9
50	24	20,915	-56.4		84	15.5
40	22	22,333	-53.9		87	22.1
30	19	24,183	-51.4		91	27.6
20	6	26,790	-47.7			

MC GRATH, ALASKA (995 MB)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	103	16.5	62	210	2.7
1,000	31	62				
950	31	497	13.2	66	205	4.5
900	31	949	9.6	71	217	6.6
850	31	1,421	6.1	75	195	5.6
800	31	1,914	2.8	78	167	3.1
750	31	2,441	.0	75	172	3.7
700	31	2,984	- 3.1	69		
650	31	3,572	- 6.3	65		
600	31	4,189	- 9.7	60		
550	31	4,860	-13.8	55		
500	31	5,573	-18.6	55		
450	31	6,359	-24.1	51		
400	31	7,199	-29.9	51		
350	30	8,138	-37.2	45		
300	30	9,185	-44.9			
250	30	10,385	-49.9			
200	29	11,831	-48.2			
175	29	12,711	-47.8			
150	28	13,728	-48.2			
125	27	14,915	-48.5			
100	27	16,382	-48.1			
80	27	17,853	-47.6			
60	27	19,754	-46.9			
50	27	20,960	-46.8			
40	26	22,438	-46.6			
30	22	24,340	-46.0			
20	6	26,999	-43.7			

MEDFORD, ORE. (969 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	24.2	41	337	8.5
1,000	31	120				
950	31	576	23.4	42	331	9.3
900	31	1,039	20.0	46	321	8.9
850	31	1,529	16.1	53	316	7.2
800	31	2,041	12.6	55	301	3.9
750	31	2,586	9.0	54	270	2.7
700	31	3,148	5.6	44	207	2.5
650	31	3,755	1.6	43	222	3.5
600	31	4,391	- 2.5	36	227	5.6
550	31	5,075	- 7.2	32	248	7.6
500	31	5,811	-12.6		245	9.5
450	31	6,615	-18.4		246	12.2
400	31	7,475	-24.8		237	14.2
350	31	8,431	-32.3		236	16.9
300	31	9,500	-40.7		247	17.9
250	31	10,717	-49.5		245	15.7
200	31	12,159	-53.7		252	15.3
175	30	13,015	-53.3		238	19.4
150	30	14,005	-54.8		252	17.1
125	30	15,165	-57.0		251	11.5
100	30	16,570	-58.9		259	6.2
80	29	17,969	-59.1		27	5.8
60	27	19,781	-56.4		88	7.8
50	27	20,943	-54.6		73	12.4
40	26	22,379	-52.5		83	17.5
30	24	24,252	-50.5		91	16.9
20	11	26,915	-47.9			

MIAMI, FLA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	26.8	81	50	1.4
1,000	31	151	26.2	76	122	1.2
950	31	603	23.4	76	138	2.9
900	31	1,075	20.4	73	99	2.3
850	31	1,567	17.3	70	90	3.1
800	31	2,083	14.1	67	65	2.5
750	31	2,628	10.8	64	68	2.9
700	31	3,198	7.5	63	67	1.7
650	31	3,808	4.1	59	58	1.7
600	31	4,453	.5	54	79	2.3
550	31	5,145	- 3.5	53	102	2.3
500	31	5,895	- 7.9	46	116	2.1
450	31	6,712	-13.0	38	100	2.3
400	30	7,595	-19.0	35	113	2.9
350	30	8,575	-26.1	37	112	3.7
300	30	9,671	-34.5	39	106	4.1
250	30	10,918	-44.5		98	5.2
200	30	12,373	-56.1		68	7.8
175	30	13,210	-62.1		56	9.1
150	30	14,149	-67.7		74	10.7
125	26	15,236	-72.2		86	8.2
100	25	16,547	-71.6		85	14.0
80	25	17,875	-67.8		100	19.8
60	25	19,630	-62.0		90	23.5
50	23	20,761	-60.3		84	30.5
40	20	22,165	-56.8		88	35.5
30	18	24,002	-52.8		88	43.3
20	13	26,618	-49.8		93	45.5
15	6	28,500	-46.5			

MIDLAND, TEX. (916 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	871	28.0	37	132	4.3
1,000	31	79				
950	31	545				
900	31	1,025	28.7	34	143	8.0
850	31	1,530	24.9	36	163	12.4
800	31	2,058	20.3	42	165	10.5
750	31	2,610	15.5	48	173	7.2
700	31	3,192	10.9	49	176	4.5
650	31	3,806	6.1	48	230	1.4
600	31	4,456	1.5	45	329	1.4
550	31	5,151	- 3.1	42	305	2.9
500	31	5,899	- 7.7	35	298	2.5
450	31	6,719	-13.4	33	299	2.7
400	31	7,595	-19.5		245	2.1
350	31	8,573	-26.8		268	4.9
300	31	9,666	-34.9		255	9.1
250	31	10,913	-44.3		255	9.1
200	31	12,373	-54.8		245	6.0
175	31	13,217	-59.8		263	10.3
150	27	14,173	-65.0		262	6.2
125	19	15,268	-68.7		250	2.5
100	15	16,604	-68.6		34	2.3
80	14	17,949	-65.2		87	8.5
60	14	19,723	-60.1		89	17.5
50	15	20,864	-57.9		88	22.0
40	15	22,278	-55.6		83	28.0
30	11	24,123	-52.2		88	32.1
20	10	26,761	-48.6			
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MONTGOMERY, ALA. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	25.8	84	195	0.8
1,000	31	145	26.9	74	208	1.2
950	31	601	25.7	64	246	2.5
900	31	1,074	22.2	66	303	1.9
850	31	1,569	18.4	70	312	.8
800	31	2,086	14.9	70	8	1.7
750	31	2,636	11.7	64	29	2.9
700	31	3,205	8.2	62	27	2.9
650	30	3,825	5.0	54	24	3.7
600	29	4,465	1.1	51	4	4.1
550	29	5,162	2.8	46	355	3.7
500	29	5,910	7.1	38	342	3.7
450	29	6,734	-12.7	37	313	4.1
400	29	7,612	-18.6	37	297	5.4
350	29	8,594	-25.6	38	282	8.0
300	28	9,688	-34.3		276	10.5
250	26	10,940	-43.7		278	11.7
200	26	12,401	-54.9		270	15.7
175	25	13,241	-60.7		275	18.5
150	24	14,184	-66.2		267	13.8
125	22	15,273	-70.2		277	10.1
100	19	16,600	-68.4		302	6.8
80	17	17,948	-64.4		61	2.5
60	16	19,722	-60.0		95	11.8
50	15	20,869	-58.0		83	14.6
40	14	22,280	-56.0		87	24.5
30	12	24,119	-52.1		93	34.6
20	9	26,782	-48.4			
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NANTUCKET, MASS. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	17.8	92	243	2.5
1,000	31	126	19.2	85	238	7.4
950	31	569	18.6	66	253	9.9
900	31	1,030	15.7	70	276	11.1
850	31	1,513	12.5	71	281	12.6
800	31	2,019	9.4	65	281	12.2
750	31	2,560	6.6	55	273	15.7
700	31	3,116	4.0	48	268	19.6
650	31	3,718	.7	44	268	22.3
600	31	4,354	- 2.3	37	274	25.1
550	31	5,043	- 6.2	37	274	28.7
500	31	5,780	-10.8	32	272	31.3
450	31	6,591	-16.2		274	29.3
400	31	7,458	-22.6		269	32.6
350	31	8,424	-29.6		281	38.5
300	31	9,505	-37.7		268	41.6
250	31	10,737	-46.5			
200	31	12,188	-54.8			
175	30	13,033	-58.1			
150	29	13,999	-60.6			
125	27	15,126	-61.7			
100	25	16,506	-60.9			
80	25	17,898	-58.6			
60	25	19,722	-54.9			
50	25	20,889	-54.0			
40	23	22,329	-52.8			
30	21	24,186	-51.3			
20	14	26,833	-48.5			
15	7	28,728	-46.5			

NASHVILLE, TENN. (996 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	24.7	74	183	0.4
1,000	31	141				
950	31	597	24.7	58	227	2.1
900	31	1,066	21.6	59	243	4.1
850	31	1,560	18.4	58	266	5.1
800	31	2,078	15.5	53	287	5.6
750	31	2,628	12.1	50	298	8.7
700	31	3,197	8.5	49	301	11.7
650	31	3,811	4.6	49	305	13.4
600	31	4,454	.8	46	309	15.2
550	31	5,148	- 3.5	44	311	13.4
500	30	5,896	- 7.9	39	305	14.8
450	30	6,721	-13.0	33	303	15.0
400	30	7,596	-18.8		301	15.7
350	30	8,576	-26.0		290	16.9
300	30	9,672	-34.4		282	19.8
250	30	10,920	-43.9		272	27.8
200	30	12,382	-54.6		272	31.1
175	30	13,226	-59.7		273	32.1
150	29	14,182	-64.6		275	23.5
125	29	15,284	-68.2		289	15.5
100	28	16,621	-67.3		294	6.6
80	28	17,977	-63.1		48	2.3
60	28	19,770	-57.8		89	8.4
50	28	20,925	-55.7		83	14.4
40	27	22,353	-53.9		90	19.8
30	19	24,214	-51.2		92	26.6
20	5	26,920	-47.0			
15						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

NOME, ALASKA (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	11.4	82	242	4.5
1,000	31	61			242	5.4
950	31	489	8.5	83	243	2.3
900	31	933	6.4	86	225	1.7
850	31	1,401	4.9	82	235	4.1
800	31	1,894	2.9	76	233	6.2
750	31	2,421	.5	72	236	7.4
700	31	2,966	- 2.1	66	239	6.4
650	31	3,558	- 5.2	61	232	6.2
600	31	4,177	- 8.6	55	242	6.0
550	31	4,850	-12.6	52	242	7.6
500	30	5,573	-17.2	48	245	7.2
450	30	6,362	-22.7	49	256	6.8
400	30	7,208	-28.8	44	260	8.0
350	30	8,149	-35.7	43	245	5.1
300	30	9,202	-43.7		227	5.8
250	30	10,403	-51.5		264	3.5
200	30	11,857	-48.1		239	10.5
175	30	12,738	-47.3		244	10.1
150	29	13,745	-47.3		253	10.1
125	29	14,949	-47.5		236	8.9
100	29	16,424	-47.0		227	9.7
80	29	17,901	-46.7		219	9.9
60	29	19,810	-46.1		196	7.6
50	29	21,021	-45.8		201	6.4
40	29	22,505	-45.8		222	6.4
30	28	24,425	-45.1		197	5.1
20	20	27,148	-41.9		211	2.3
15	9	29,136	-39.5			
10						

NORFOLK, VA. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	22.9	83	158	1.6
1,000	31	143	23.2	74	213	4.5
950	31	593	21.2	65	240	6.8
900	31	1,057	18.5	65	275	6.8
850	31	1,545	15.5	63	283	8.7
800	31	2,057	12.9	56	291	9.9
750	31	2,598	10.0	51	295	11.7
700	31	3,167	6.5	50	297	12.4
650	31	3,778	3.2	47	296	14.4
600	31	4,417	.0	43	292	15.7
550	30	5,108	- 4.1		293	18.3
500	30	5,853	- 8.6		292	21.6
450	30	6,669	-13.5		293	25.3
400	30	7,549	-19.4		294	28.6
350	28	8,530	-26.5		291	29.7
300	28	9,624	-34.8		289	29.9
250	28	10,871	-44.6		283	33.0
200	28	12,328	-55.5		277	38.7
175	27	13,171	-60.7		281	36.9
150	26	14,118	-65.2		285	36.5
125	24	15,225	-67.1		295	25.8
100	19	16,566	-65.9		301	12.4
80	19	17,931	-62.3		312	4.7
60	18	19,725	-57.5		90	7.8
50	16	20,885	-55.5		92	12.8
40	12	22,308	-53.9		83	17.9
30	10	24,167	-51.9		88	26.6

NORTH PLATTE, NEBR. (917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	848	21.2	68	78	1.7
1,000	31	81				
950	31	537				
900	31	1,007	23.5	53	91	3.9
850	31	1,506	21.6	49	139	6.6
800	31	2,030	18.3	49	185	6.8
750	31	2,584	14.4	51	231	7.0
700	31	3,159	10.3	49	253	8.0
650	31	3,774	5.5	53	273	10.9
600	31	4,420	.7	52	277	13.2
550	31	5,114	- 4.3	52	271	14.2
500	30	5,857	- 9.3	49	272	17.9
450	30	6,671	-14.6	44	271	19.6
400	30	7,546	-21.0	40	275	22.3
350	30	8,518	-28.0	37	272	27.4
300	30	9,605	-36.5		274	29.1
250	29	10,842	-46.2		272	32.1
200	29	12,292	-55.5		266	26.8
175	29	13,134	-59.2		255	24.7
150	29	14,091	-62.1		266	21.6
125	28	15,211	-64.1		274	18.5
100	25	16,572	-64.0		271	8.9
80	24	17,950	-61.2		334	2.7
60	22	19,756	-56.8		78	6.8
50	22	20,917	-54.7		76	8.9
40	19	22,350	-52.8		85	12.4
30	16	24,213	-50.3		84	16.1

OAKLAND, CALIF. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	15.5	77	282	9.3
1,000	31	[illegible]	14.9	79	278	8.7
950	31	577	16.9	67	273	8.7
900	31	1,029	19.9	53	274	9.1
850	31	1,519	18.1	24	279	6.2
800	31	2,035	15.3	21	281	3.5
750	31	2,584	12.1		[illegible]	3.5
700	31	3,153	9.0		[illegible]	4.7
650	31	3,767	4.9		[illegible]	5.8
600	31	4,409	.6		237	7.4
550	31	5,106	- 4.3		245	10.1
500	31	5,845	- 9.8		251	12.2
450	31	6,656	-16.0		251	15.7
400	30	7,523	-22.8		251	18.1
350	29	8,485	-30.9		257	22.1
300	29	9,559	-39.7		257	25.6
250	29	10,779	-49.2		260	31.1
200	27	12,221	-56.5		256	32.6
175	27	13,064	-57.4		255	30.7
150	27	14,034	-59.1		251	23.1
125	26	15,174	-61.2		246	15.0
100	23	16,552	-63.1		252	5.2
80	23	17,927	-61.9		105	3.5
60	22	19,720	-58.4		81	10.3
50	22	20,873	-56.1		84	14.2
40	22	22,297	-53.8		92	16.7
30	20	24,158	51.1		90	23.1
20	18	26,827	-47.0		92	29.1
15	11	28,741	-44.6		88	28.9
10	5	31,446	-42.5			

OKLAHOMA CITY, OKLA. (968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	391	28.3	41	[illegible]	[illegible]
1,000	31	95				
950	31	[illegible]	30.4	35	167	12.2
900	31	1,037	27.5	[illegible]	[illegible]	16.7
850	31	1,540	23.6	41	187	15.7
800	31	2,066	19.3	47	[illegible]	13.6
750	31	2,619	14.9	[illegible]	[illegible]	10.1
700	31	3,196	10.3	54	219	6.6
650	31	3,812	[illegible]	[illegible]	244	4.1
600	31	4,458	1.3	50	276	3.5
550	31	5,155	[illegible]	42	279	[illegible]
500	31	5,901	- 7.7	35	[illegible]	[illegible]
450	31	6,727	-12.9		270	7.8
400	31	7,600	-19.3		266	9.9
350	31	8,579	-26.5		268	[illegible]
300	31	9,673	-34.8		256	11.7
250	31	10,919	-44.4		234	13.6
200	31	12,378	-54.9		[illegible]	17.3
175	31	13,221	-59.7		[illegible]	18.8
150	30	14,176	-64.3		238	17.3
125	27	15,284	-67.7		244	10.1
100	24	16,622	-66.9		218	3.5
80	23	17,980	-62.7		82	6.2
60	21	19,771	-58.3		88	9.9
50	20	20,920	-56.2		84	18.8
40	20	22,343	-53.7		83	24.3
30	15	24,218	-50.8		95	27.0
20	5	26,866	-48.2			

OMAHA, NEBR. (966 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	403	23.3	68	128	3.3
1,000	31	95				
950	31	548	24.7	56	132	4.7
900	31	1,021	22.8	51	186	8.2
850	31	1,516	19.5	52	221	7.4
800	31	2,035	16.0	53	246	9.3
750	31	2,585	12.1	53	266	13.0
700	31	3,155	8.4	50	273	14.4
650	31	3,770	4.2	48	279	15.9
600	31	4,410	- .1	47	283	18.5
550	31	5,102	- 4.9	47	282	20.4
500	31	5,844	- 9.7	45	281	22.3
450	30	6,662	-14.9	40	285	24.7
400	30	7,533	-21.1	36	282	26.2
350	29	8,502	-28.4		284	29.7
300	29	9,588	-36.7		277	30.7
250	28	10,821	-46.3		276	35.2
200	28	12,271	-55.0		269	37.7
175	28	13,116	-58.7		264	33.4
150	28	14,077	-61.4		265	30.3
125	27	15,198	-63.7		273	24.7
100	25	16,561	-63.5		285	12.8
80	25	17,938	-60.5		316	3.7
60	23	19,743	-56.5		52	4.9
50	23	20,906	-53.9		82	7.4
40	20	22,335	-52.0		76	11.8
30	18	24,204	-50.2		82	15.5
20	5	26 898	-47.0			

PHOENIX, ARIZ. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	341	32.8	29	97	0.8
1,000	31	67				
950	31	530	33.4	25	298	2.5
900	31	1,017	30.0	28	287	5.1
850	31	1,524	25.9	29	281	5.4
800	31	2,053	21.4	34	282	4.7
750	31	2,609	16.4	40	272	4.1
700	31	3,190	11.4	46	278	5.1
650	31	3,805	6.5	45	244	3.9
600	31	4,456	2.2	41	237	4.9
550	31	5,155	- 2.6		255	4.7
500	31	5,903	- 7.6		253	7.0
450	31	6,727	-13.1		258	7.6
400	31	7,603	-19.6		258	9.1
350	31	8,579	-27.2		256	12.2
300	31	9,671	-35.6		247	17.1
250	31	10,913	-44.9		243	21.0
200	31	12,372	-54.8		237	22.5
175	31	13,216	-59.5		240	23.7
150	31	14,170	-64.0		242	19.2
125	31	15,276	-67.1		242	11.5
100	30	16,621	-67.5		208	4.1
80	30	17,974	-64.2		92	7.4
60	27	19,757	-59.2		79	13.6
50	26	20,905	-56.9		80	20.4
40	26	22,326	-54.6		93	26.8
30	23	24,180	-52.0		92	28.0

PITTSBURGH, PA. (975 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	353	20.3	77	246	3.5
1,000	31	133				
950	31	581	20.4	71	247	5.6
900	31	1,044	17.4	74	263	11.7
850	31	1,530	14.2	73	275	13.8
800	31	2,040	11.3	63	282	13.6
750	31	2,587	8.3	60	286	16.9
700	31	3,144	5.1	56	286	20.2
650	30	3,752	1.7	55	292	22.9
600	29	4,391	- 1.3	44	289	25.3
550	29	5,081	- 5.1	44	287	26.8
500	29	5,822	- 9.6	42	288	29.7
450	29	6,637	-15.0	39	286	34.2
400	29	7,509	-20.8	38	283	37.9
350	29	8,480	-28.2	35	282	40.2
300	29	9,566	-36.9		284	43.9
250	28	10,799	-46.8		282	46.4
200	28	12,245	-56.0		279	49.3
175	28	13,084	-60.3		278	49.7
150	28	14,037	-63.2		279	44.5
125	24	15,138	-63.9		279	37.1
100	11	16,499	-62.5			
80	6	17,865	-59.7			

PORTLAND, ME. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	20	16.6	82	266	1.9
1,000	31	121	18.5	70	269	3.5
950	31	566	17.7	60	269	6.8
900	31	1,022	14.5	62	271	8.4
850	31	1,503	11.4	62	281	10.3
800	31	2,006	8.1	63	278	12.2
750	31	2,539	5.1	58	280	13.0
700	31	3,097	2.1	54	278	14.6
650	31	3,691	- 1.0	48	280	17.3
600	31	4,327	- 4.3	40	280	20.6
550	31	5,011	- 7.6		278	25.3
500	31	5,745	-12.2		275	29.9
450	31	6,548	-17.7		276	32.8
400	31	7,414	-23.8		276	38.9
350	31	8,375	-31.0		275	43.7
300	31	9,450	-39.2		275	48.6
250	31	10,675	-48.0		274	55.4
200	31	12,124	-53.5		273	59.4
175	31	12,978	-55.6		273	56.9
150	31	13,956	-56.8		276	48.6
125	31	15,106	-58.5		272	39.2
100	31	16,507	-58.3		268	26.8
80	30	17,914	-56.2		268	14.8
60	28	19,756	-53.0		234	4.5
50	26	20,936	-52.1		120	5.6
40	24	22,380	-51.2		92	11.5
30	23	24,256	-49.6		91	15.9
20	5	26,935	-46.8			

RAPID CITY, S. DAK. (905 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	966	19.4	64	8	1.9
1,000	30	86				
950	30	538				
900	30	1,010	20.0	60	15	1.6
850	30	1,504	19.3	49	77	2.7
800	30	2,022	15.5	52	349	1.0
750	30	2,571	11.5	54	298	4.3
700	30	3,139	7.7	53	283	9.5
650	30	3,750	3.6	53	276	16.7
600	30	4,390	- 1.3	53	278	20.0
550	30	5,080	- 6.3	51	282	22.1
500	30	5,815	-11.7	49	281	24.1
450	30	6,627	-17.1	41	275	26.6
400	30	7,487	-23.4	38	274	26.8
350	29	8,449	-30.7		261	28.7
300	29	9,524	-39.2		259	31.5
250	28	10,750	-48.1		258	34.6
200	28	12,191	-56.0		257	31.3
175	27	13,030	-58.4		258	28.9
150	25	14,002	-59.3		267	26.4
125	16	15,129	-61.6		278	21.8
100	10	16,512	-61.1			

ST. CLOUD, MINN. (976 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	316	18.5	86	102	0.6
1,000	31	103				
950	31	554	20.4	73	228	1.7
900	31	1,014	17.9	70	236	6.2
850	31	1,502	15.0	66	269	9.1
800	31	2,012	11.7	60	283	10.5
750	31	2,555	8.7	51	292	11.5
700	31	3,117	5.3	45	290	13.6
650	31	3,724	1.6	42	294	17.3
600	31	4,360	- 2.3	42	292	20.6
550	31	5,046	- 6.4	42	289	23.3
500	31	5,785	-11.3	40	287	25.3
450	31	6,589	-17.0	38	285	28.0
400	31	7,459	-23.3	38	282	28.4
350	31	8,421	-30.7		279	33.4
300	31	9,497	-39.1		271	38.1
250	31	10,722	-47.9		268	43.9
200	31	12,166	-55.4		273	49.1
175	31	13,015	-56.6		276	40.2
150	31	13,989	-57.7		271	32.8
125	30	15,125	-59.3		276	23.7
100	30	16,522	-59.7		291	17.3
80	29	17,923	-57.6		322	6.4
60	29	19,755	-54.0		48	3.1
50	26	20,935	-52.9		75	5.2
40	23	22,381	-51.0		78	8.2
30	20	24,264	-49.2		91	12.8
20	10	26,934	-46.9			

ST. PAUL IS., ALASKA (1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	9.1	92	296	4.1
1,000	31	78			256	6.8
950	31	508	8.3	92	270	6.4
900	31	949	7.0	88	280	5.2
850	31	1,419	6.1	80	283	5.4
800	31	1,915	4.5	75	274	7.4
750	31	2,446	2.2	71	286	8.0
700	31	2,994	- .2	63	288	7.6
650	31	3,589	- 3.3	61	288	8.5
600	31	4,214	- 6.8	55	296	11.8
550	31	4,891	-10.7	52	294	13.0
500	31	5,615	-15.2	45	294	14.8
450	31	6,409	-20.4	43	295	15.7
400	31	7,266	-26.5	42	290	17.7
350	31	8,216	-33.6	37	282	17.5
300	31	9,280	-41.2		285	15.7
250	31	10,496	-48.5		284	19.2
200	31	11,953	-50.4		286	19.0
175	31	12,823	-50.6		278	20.2
150	31	13,827	-50.6		274	17.1
125	31	15,015	-50.6		279	16.3
100	31	16,469	-50.3		272	14.0
80	31	17,927	-49.5		250	6.6
60	30	19,819	-48.3		238	2.5
50	29	21,020	-47.5		275	3.1
40	25	22,500	-47.1		220	1.0
30	19	24,437	-46.2		85	4.3

SALEM, OREG. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	20.9	58	312	5.8
1,000	31	144	20.4	59	309	6.2
950	31	589	18.0	60	329	7.4
900	31	1,046	14.8	65	342	6.8
850	31	1,527	12.4	60	348	4.7
800	31	2,034	10.0	50	314	1.7
750	31	2,576	7.5	45	267	3.7
700	31	3,133	3.7	46	249	4.3
650	31	3,737	- .2	43	244	5.6
600	31	4,367	- 4.6	41	255	7.6
550	31	5,050	- 9.3	37	249	8.5
500	31	5,777	-14.3	34	252	9.3
450	31	6,578	-20.1	35	253	9.9
400	31	7,430	-26.5	37	251	8.4
350	31	8,380	-34.1		260	9.5
300	31	9,440	-42.2		267	10.3
250	30	10,648	-50.2		268	9.1
200	30	12,087	-54.0		274	8.4
175	30	12,945	-53.9		264	10.5
150	29	13,930	-54.8		253	12.8
125	29	15,091	-56.6		254	10.7
100	24	16,499	-58.3		238	6.2
80	16	17,906	-57.9		229	1.2
60	12	19,730	-55.6		72	7.6
50	10	20,888	-54.3		83	8.2
40	5	22,298	-52.3			

****SALT LAKE CITY, UTAH (871 MB.)**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	24	1,288	23.2	33	63	1.6
1,000	24	58				
950	24	518				
900	24	999				
850	24	1,503	25.1	25	64	1.9
800	24	2,031	21.0	26	58	2.1
750	24	2,588	16.4	29	301	2.1
700	24	3,168	11.5	33	269	5.1
650	24	3,789	6.2	38	276	9.3
600	24	4,433	.7	45	261	11.8
550	24	5,127	- 5.0	49	268	14.4
500	24	5,867	-10.6	47	262	16.3
450	24	6,681	-16.8	44	258	17.7
400	24	7,543	-23.1	40	253	20.4
350	24	8,507	-30.3		252	23.7
300	24	9,585	-38.7		249	28.9
250	24	10,811	-48.4		245	36.1
200	24	12,250	-56.0		250	37.3
175	23	13,100	-56.7		252	34.2
150	22	14,073	-58.4		253	25.1
125	22	15,211	-61.4		264	16.5
100	22	16,587	-63.3		282	7.8
80	21	17,963	-61.1		20	3.9
60	21	19,766	-57.0		66	7.8
50	20	20,927	-55.4		75	9.7
40	19	22,357	-52.9		78	12.4
30	17	24,213	-50.5		83	15.5
20	7	26,858	-47.2			

SAN ANTONIO, TEX. (986 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	243	29.9	48	150	10.9
1,000	31	115				
950	31	582	27.5	52	144	17.5
900	31	1,050	24.0	57	150	17.3
850	31	1,547	20.5	60	154	10.9
800	31	2,068	16.8	61	159	5.6
750	31	2,617	13.2	56	128	3.7
700	31	3,192	9.7	45	83	4.5
650	31	3,809	6.4	37	71	4.1
600	31	4,456	2.3	33	80	3.3
550	31	5,155	- 1.9	28	78	2.9
500	31	5,904	- 6.8		99	2.5
450	31	6,732	-12.4		159	.6
400	31	7,607	-18.7		208	3.9
350	31	8,586	-26.2		222	6.8
300	31	9,681	-34.9		230	9.3
250	30	10,927	-44.5		217	10.9
200	30	12,386	-54.9		207	14.8
175	30	13,229	-60.2		204	15.3
150	30	14,176	-66.0		206	10.5
125	29	15,269	-69.9		167	3.5
100	29	16,591	-70.4		96	4.9
80	28	17,923	-67.0		92	11.3
60	26	19,677	-61.8		86	18.6
50	24	20,809	-59.2		80	25.8
40	22	22,215	-56.5		84	30.9
30	19	24,050	-53.3		91	36.1
20	11	26,687	-48.5			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

** Observations began August 7.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

AUGUST 1956

Standard pressure surface (mb.)	SAN DIEGO, CALIF. (999 MB.)						SAN JUAN, P. R. (1017 MB.)						SANTA MARIA, CALIF. (1007 MB.)						SANTA MONICA, CALIF. (1009 MB.)						S. STE. MARIE, MICH. (989 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	18.6	81	289	5.4	31	6	25.4	81	107	6.0	31	74	13.6	81	300	7.2	29	38	18.5	85	247	5.8	31	221	14.6	90	314	1.9
1,000	31	116			296	6.2	31	154	25.5	77	99	11.3	31	130	13.4	81	300	6.6	29	116	17.5	85	247	6.2	31	122				
950	31	562	19.1	51	318	2.1	31	605	22.4	81	93	17.7	31	577	16.4	70	325	6.8	29	563	20.6	53	259	5.8	31	564	15.4	74	309	4.3
900	31	1,024	21.6		293	2.3	31	1,074	19.5	80	93	16.7	31	1,029	21.5	34	339	8.2	29	1,025	20.6	39	251	1.6	31	1,016	13.1	73	292	6.8
850	31	1,518	20.8		275	4.9	31	1,565	16.7	74	92	17.5	31	1,523	20.1	28	23	5.4	29	1,518	20.2	20	232	4.3	31	1,494	10.1	73	296	9.5
800	31	2,039	18.2		272	6.2	31	2,081	14.6	61	88	16.9	31	2,043	16.8	27	65	3.7	29	2,039	17.9		255	5.1	31	1,996	7.4	66	294	12.2
750	31	2,589	15.0		253	7.0	31	2,620	11.8	53	89	17.3	31	2,595	13.5		321	1.6	29	2,588	14.2		260	5.6	31	2,531	4.8	56	293	15.5
700	31	3,168	11.1		238	8.0	31	3,199	8.3	53	86	17.5	31	3,166	10.3		276	6.2	29	3,165	10.5		250	7.8	31	3,086	1.7	58	297	18.6
650	31	3,783	6.9		242	9.7	31	3,808	4.6	52	86	16.5	31	3,785	6.4		262	8.7	29	3,779	6.5		241	9.7	31	3,684	- 1.8	59	293	20.4
600	30	4,434	2.5		246	10.5	31	4,456	1.2	38	86	15.7	31	4,429	2.1		256	10.5	29	4,428	2.0		246	10.9	31	4,313	- 5.4	52	290	23.5
550	30	5,133	- 2.3		254	9.7	31	5,152	- 2.2	29	89	15.3	31	5,126	- 2.6		255	12.4	28	5,125	- 2.8		252	11.3	30	4,996	- 9.1	43	294	25.4
500	30	5,881	- 7.8		257	9.9	31	5,903	- 6.5		92	13.4	31	5,873	- 8.1		257	15.7	28	5,872	- 8.3		255	13.2	29	5,723	-13.9	43	296	28.6
450	30	6,698	-14.0		255	13.0	31	6,725	-11.9		98	11.3	31	6,693	-14.2		257	16.3	28	6,686	-14.6		260	14.6	29	6,527	-19.4	43	290	31.7
400	30	7,573	-21.1		256	14.6	31	7,609	-18.3		101	9.3	31	7,564	-21.4		260	18.5	28	7,561	-21.9		256	16.9	29	7,381	-25.5	42	293	34.4
350	30	8,511	-28.8		254	16.9	30	8,587	-26.1		124	5.2	31	8,533	-29.2		257	20.6	28	8,528	-29.6		256	20.2	28	8,335	-32.7		290	41.6
300	30	9,628	-37.1		249	21.2	30	9,681	-35.0		151	5.2	31	9,614	-37.8		254	23.3	27	9,608	-38.3		251	22.3	26	9,398	-40.8		286	48.4
250	30	10,863	-46.3		246	23.9	29	10,926	-45.0		99	3.1	31	10,845	-47.1		256	23.7	27	10,836	-47.4		252	25.8	26	10,617	-48.1		282	55.0
200	30	12,314	-55.6		248	29.5	28	12,379	-56.4		152	2.5	31	12,292	-55.5		253	28.6	27	12,279	-56.3		253	32.8	26	12,066	-53.4		276	56.5
175	30	13,157	-59.1		250	28.4	28	13,215	-62.2		92	2.9	30	13,138	-58.3		256	28.0	27	13,120	-59.5		253	33.4	25	12,933	-54.9		275	52.8
150	30	14,115	-62.5		250	22.9	27	14,153	-67.5		103	4.9	30	14,103	-60.4		255	22.3	27	14,077	-62.4		253	24.5	25	13,914	-56.6		280	44.9
125	26	15,229	-66.8		234	12.2	25	15,237	-71.5		108	10.1	30	15,230	-63.6		245	13.2	24	15,187	-65.5		240	14.0	24	15,063	-58.4		283	34.2
100	24	16,571	-67.9		207	5.1	23	16,545	-74.1		104	14.4	29	16,593	-64.9		232	5.1	21	16,542	-66.7		227	7.4	20	16,475	-58.1		287	23.3
80	23	17,921	-64.8		79	5.6	18	17,857	-70.0		93	20.2	29	17,957	-63.1		83	5.1	13	17,900	-63.9		108	5.6	19	17,886	-56.5		284	15.0
60	23	19,695	-60.3		85	15.9	18	19,595	-63.8		84	28.9	28	19,744	-58.9		84	12.0	7	19,689	-59.4				16	19,729	-53.7		341	5.6
50	22	20,837	-57.8		83	21.8	18	20,720	-60.5		87	34.6	28	20,894	-56.8		83	18.6							16	20,905	-51.9		63	4.3
40	21	22,253	-55.1		93	28.0	18	22,120	-56.9		85	44.3	26	22,316	-54.4		89	23.9							15	22,354	-50.4		80	5.4
30	20	24,098	-52.4		86	29.7	11	23,950	-53.7				25	21,170	-51.8		91	26.0							13	24,233	-48.4		86	10.1
20	12	26,740	-48.6		87	35.0							7	26,771	-49.6										11	26,925	-45.2		81	12.2
15	5	28,638	-46.2																											
	SEATTLE, WASH. (1003 MB.)						SHREVEPORT, LA. (1006 MB.)						SPOKANE, WASH. (931 MB.)						SWAN ISLAND, W. I. (1014 MB.)						TAMPA, FLA. (1017 MB.)					
SURFACE	31	121	20.0	61	341	6.2	31	76	27.1	63	130	4.3	31	722	22.7	37	203	0.6	30	10	27.5	81	76	7.4	31	7	25.9	81	50	1.0
1,000	31	153	19.3	61	311	2.9	31	128	27.7	59	130	5.1	31	97					30	134	26.6	82	73	10.9	31	154	26.4	76	42	1.2
950	31	594	16.7	62	287	2.7	31	589	25.9	51	157	10.5	31	551					30	587	23.3	87	86	13.8	31	608	24.0	75	289	1.0
900	31	1,051	14.1	62	309	3.7	31	1,057	22.8	53	169	8.7	31	1,020	21.0	37	256	1.9	30	1,057	20.3	83	92	15.3	31	1,079	21.1	74	186	1.7
850	31	1,531	11.7	59	322	3.3	31	1,552	19.2	56	169	6.2	31	1,511	16.8	41	262	3.1	30	1,549	17.5	75	95	15.7	31	1,573	17.9	73	195	1.9
800	31	2,036	9.1	58	306	4.1	31	2,070	15.6	55	147	4.5	31	2,023	12.3	47	262	4.3	30	2,065	14.4	66	94	15.9	31	2,090	14.8	68	213	2.7
750	31	2,575	6.3	53	297	5.4	31	2,616	12.2	52	124	4.7	31	2,568	7.7	54	265	5.2	30	2,606	11.5	56	95	16.1	31	2,640	11.7	62	235	1.4
700	31	3,131	2.9	49	286	6.2	31	3,189	8.5	45	97	7.2	31	3,124	3.5	56	283	6.8	30	3,182	8.2	47	99	15.5	31	3,209	8.3	58	248	.2
650	31	3,731	.9	45	279	7.4	30	3,803	4.6	43	95	5.4	31	3,728	- .2	47	283	8.0	29	3,795	4.4	51	96	15.5	31	3,827	4.7	56	338	1.4
600	30	4,362	- 5.1	45	277	8.2	29	4,444	.8	41	58	4.9	31	4,357	- 4.3	42	272	9.7	29	4,438	1.0	42	99	15.3	31	4,466	1.0	55	342	1.9
550	29	5,046	- 9.1	40	272	8.5	29	5,139	- 3.2	39	45	4.1	31	5,039	- 8.8	38	261	11.1	29	5,133	- 2.8	36	95	14.2	31	5,165	- 3.0	51	310	2.3
500	29	5,776	-14.1	38	264	8.5	29	5,886	- 7.6		3	2.1	31	5,768	-13.8	37	263	12.4	29	5,881	- 7.4	33	101	13.4	31	5,910	- 7.3	45	282	3.3
450	29	6,573	-19.8	37	269	8.5	28	6,711	-12.8		290	2.5	31	6,567	-19.6	37	262	11.3	29	6,700	-12.7		106	12.2	31	6,734	-12.5	40	288	1.9
400	29	7,429	-26.4	41	266	8.0	28	7,588	-18.9		255	6.2	31	7,424	-26.1	41	262	11.8	29	7,597	-18.6		105	11.7	31	7,614	-18.5	42	250	1.6
350	28	8,389	-33.7	40	260	8.4	28	8,568	-25.9		241	9.3	31	8,375	-33.4	44	260	12.8	29	8,565	-25.8		103	9.7	31	8,596	-25.6	38	208	1.7
300	27	9,455	-41.9		245	5.4	28	9,664	-34.2		235	12.4	31	9,438	-41.8		253	12.0	29	9,661	-34.5		67	4.5	31	9,695	-34.1		152	3.1
250	26	10,663	-50.1		263	5.8	28	10,912	-44.0		236	17.5	30	10,653	-50.5		277	11.5	29	10,907	-44.6		3	2.1	31	10,945	-44.1		146	3.5
200	26	12,099	-54.8		293	7.0	26	12,373	-55.2		229	17.5	30	12,089	-54.3		280	10.1	26	12,369	-56.7		300	2.5	31	12,404	-56.0		96	3.3
175	26	12,952	-54.8		286	9.3	26	13,213	-61.0		224	18.5	30	12,946	-53.9		279	12.0	25	13,193	-62.9		40	2.1	31	13,241	-62.4		66	2.5
150	26	13,936	-55.3		267	10.3	25	14,159	-66.5		241	13.4	29	13,931	-54.8		277	13.0	24	14,127	-69.0		65	6.4	31	14,179	-68.7		13	2.1
125	25	15,097	-56.6		267	11.8	23	15,245	-70.1		259	10.3	29	15,091	-56.4		274	11.3	22	15,202	-73.7		82	12.4	31	15,258	-72.5		46	2.1
100	24	16,513	-57.0		270	8.4	22	16,565	-69.9		255	1.6	29	16,503	-57.5		274	7.4	18	16,495	-75.2		90	18.1	30	16,569	-71.2		77	7.2
80	20	17,925	-57.3		279	3.9	22	17,905	-65.6		86	6.8	29	17,912	-57.1		306	4.5	15	17,795	-71.9		96	24.5	28	17,897	-67.6		98	14.8
60	16	19,752	-55.5		42	5.4	21	19,674	-60.7		87	15.2	29	19,740	-55.1		54	5.2	12	19,531	-64.5		91	27.4	25	19,651	-62.1		88	18.8
50	14	20,928	-54.3		70	5.2	19	20,813	-58.3		84	20.6	29	20,907	-53.8		63	6.0	11	20,647	-61.4		87	35.2	23	20,781	-59.6		85	25.8
40	11	22,364	-52.6		77	7.2	19	22,226	-55.5		82	27.0	29	22,347	-51.6		74	9.5	11	22,041	-58.3		94	35.4	23	22,184	-57.2		86	31.1
30	8	24,241	-48.9				11	24,074	-52.7		87	31.5	28	24,225	-48.5		84	9.9	10	23,858	-54.5				20	24,022	-53.5		88	37.9
20													26	26,907	-45.3		89	12.8	6	26,465	-50.7				14	26,660	-49.2			
15													10	28,820	-43.7															
	TATOOSH ISLAND, WASH. (1015 MB.)						TOPEKA, KANS. (981 MB.)						TUCSON, ARIZ. (924 MB.)						WASHINGTON, D. C. (1006 MB.)						WINNEMUCCA, NEV. (867 MB.)					
SURFACE	31	31	12.9	95	209	7.4	31	270	26.3	61	137	3.5	31	781	29.5	36	263	1.2	31	88	21.6	79	206	2.5	31	1,310	25.0	18	303	6.2
1,000	31	154	13.0	89	244	7.8	31	101					31	69					31	137	22.5	73	207	3.7	31	34				
950	31	594	14.1	72	285	8.9	31	560	27.7	46	160	10.9	31	531					31	585	21.2	65	242	7.2	31	495				
900	31	1,043	13.4	61	279	5.6	31	1,035	25.1	43	186	13.2	31	1,018	28.9	31	280	2.9	31	1,050	18.1	67	265	7.0	31	974				
850	31	1,522	11.3	58	279	3.7	31	1,534	21.8	44	211	12.6	31	1,524	25.1	33	283	4.9	31	1,538	14.8	68	288	8.7	31	1,481	24.6	18	300	9.5
800	31	2,027	9.0	50	280	4.1	31	2,056	18.1	47	231	14.8	31	2,052	20.6	37	287	5.4	31	2,048	11.8	61	290	11.8	31	2,008	20.3	21	306	10.9
750	31	2,563	6.6	43	273	4.9	31	2,606	14.2	48	248	15.3	31	2,605	15.8	45	287	5.1	31	2,592	8.9	55	292	12.4	31	2,565	15.3	25	295	8.2
700	31	3,122	3.5	42	279	7.6	31	3,184	9.8	51	263	15.2	31	3,187	10.8	53	306	3.9	31	3,154	6.0	47	294	14.4	31	3,139	10.0	31	265	5.4
650	31	3,720	- .4	42	276	6.8	31	3,796	4.9	54	274	14.4	31	3,801	5.8	56	317	2.1	31	3,765	2.9	45	293	16.9	31	3,753	4.5	35	236	6.8
600	31	4,354	4.1	35	275	7.8	31	4,442	.0	55	287	14.4	31	4,450	1.5	51	158	.6	31	4,403	- .5	42	295	20.6	31	4,395	- .9	39	220	9.5
550	31	5,032	8.6	36	277	8.9	30	5,134	- 4.3	17	292	14.2	31	5,145	- 3.0	45	138	.4	31	5,094	- 4.4	40	293	22.0	31	5,082	- 6.4	39	215	13.6
500	31	5,767	-13.5	34	286	8.1	30	5,879	8.9	38	290	16.5	31	5,894	- 7.9	41	315	2.3	30	5,838	- 9.0	35	295	24.1	31	5,820	-12.0	33	226	14.0
450	31	6,562	-18.9	35	295	10.3	30	6,698	-14.2		289	18.8	31	6,715	-13.1		289	4.7	30	6,654	-14.0		294	27.0	30	6,630	-18.2		233	16.1
400	30	7,423	-25.4	35	294	10.7	30	7,570	-20.0		288	21.6	30	7,593	-19.2		266	5.4	30	7,531	-20.0		290	30.3	30	7,489	-24.8		241	16.9
350	30	8,376	-33.0	33	275	8.9	28	8,546	-27.5		280	23.5	30	8,571	-26.4		259	8.7	30	8,505	-27.4		284	32.8	30	8,446	-32.2		246	20.8
300	30	9,441	11.1		307	9.3	27	9,634	-35.8		276	28.9	30	9,666	-34.7		251	13.6	30	9,594	-35.9		283	37.9	29	9,518	-40.9		243	21.8
250	30	10,658	-48.4		330	13.8	27	10,873	-45.4		273	31.5	30	10,913	-44.0		246	17.7	30	10,835	-45.2		276	39.4	29	10,733	-49.7		238	29.7
200	30	12,104	-53.4		305	7.2	26	12,323	-55.6		260	34.8	29	12,374	-54.7		241	20.4	30	12,287	-55.6		277	46.0	29	12,169	-55.5		243	31.9
175	30	12,962	-53.4		289	5.1	26	13,164	-59.9		261	34.4	28	13,215	-59.9		247	22.5	30	13,128	-60.1		276	45.3	27	13,018	-55.9		242	28.6
150	30	13,952	-54.2		256	7.2	26	14,115	-63.5		267	28.6	27	14,165	-65.1		248	18.3	29	14,080	-63.0		276	42.9	27	13,996	-57.3		244	22.5
125	30	15,118	-55.0		255	6.0	25	15,219	-66.3		270	21.8	27	15,266	-68.0		242	14.2	28	15,188	-65.0		283	30.5	27	15,141	-60.2		245	16.5
100	30	16,542	55.3		259	6.4	22	16,574	-65.8		281	9.5	24	16,601	-67.3		206	5.1	25	16,545	-64.8		281	16.9	27	16,526	-62.3		235	3.9
80	28	17,960	-55.6		271	2.5	22	17,937	-62.2		321	3.1	23	17,950	-64.8		92	7.6	25	17,914	-61.2		279	9.7	26	17,910	-60.2		40	2.9
60	27	19,799	-54.1		67	3.1	20	19,730	-57.2		88	6.6	22	19,725	-59.9		83	15.9	25	19,716	-56.7		148	.4	24	19,708	-58.0		78	8.4
50	26	20,973	-53.0		75	5.1	20	20,886	-55.3		87	11.1	21	20,867	-57.7		88	22.0	25	20,875	-55.2		91	7.4	24	20,862	-56.2		82	12.0
40	25	22,418	-51.2		73	8.0	19	22,313	-53.4		93	14.6	19	22,287	-55.3		87	27.6	25	22,301	-53.9		91	14.2	23	22,287	-53.7		79	15.3
30	24	24,301	-48.4		83	8.9	13	24,171	-50.9		95	14.6	17	24,139	-52.6		86	29.5	24	24,153	-51.8		95	22.1	21	24,150	-50.9		86	16.9
20	7	26,964	-46.7										10	26,771	-49.8				16	26,816	-48.8		96	28.0	18	26,797	-47.8		97	22.0
15																			9	28,705	-46.3				10	28,690	-46.3			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1013 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	12	12.9	86	139	5.8
1,000--	30	120	12.2	86	134	7.0
950----	30	553	9.6	86	142	10.3
900----	30	996	6.9	87	151	11.7
850----	30	1,465	5.2	84	157	11.3
800----	30	1,958	3.1	80	165	8.7
750----	30	2,484	.6	77	184	8.5
700----	30	3,031	- 2.1	71	203	9.5
650----	30	3,619	- 5.3	65	214	8.2
600----	30	4,241	- 9.2	61	225	10.9
550----	29	4,912	-13.0	56	231	12.2
500----	29	5,633	-17.5	52	235	15.9
450----	29	6,420	-22.9	46	241	17.1
400----	29	7,268	-28.8	42	239	18.8
350----	29	8,209	-35.8		245	22.5
300----	29	9,263	-42.8		248	24.7
250----	29	10,475	-48.5		246	29.5
200----	28	11,932	-50.6		255	18.6
175----	28	12,802	-50.4		259	15.2
150----	25	13,802	-50.1		275	11.7
125----	25	14,992	-49.9		273	9.9
100----	24	16,451	-49.6		278	9.7
80-----	23	17,918	-49.3		296	4.7
60-----	22	19,809	-48.1		277	2.3
50-----	22	21,011	-47.7		357	1.0
40-----	17	22,486	-47.7			
30-----	10	24,372	-47.0			

RAWINSONDE DATA

Average monthly values

Table 20 *Air Force data for April 1956

Standard pressure surface (mb.)	DENVER, COLO. (829 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	RANTOUL, ILL. (985 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,661	7.6	46	156	1.2	30	227	8.9	54	244	1.7
1,000--	30	79					30	98				
950----	30	521					30	529	9.1	52	256	5.1
900----	30	973					30	972	6.7	55	262	10.1
850----	30	1,451					30	1,439	3.8	59	271	15.0
800----	30	1,953	7.4	45	247	2.5	30	1,929	1.4	60	275	17.3
750----	30	2,484	3.5	48	261	5.8	30	2,453	- 1.6	58	280	17.5
700----	30	3,036	- .3	52	283	8.5	30	2,993	- 4.4	51	282	19.6
650----	30	3,627	- 4.6	52	284	12.2	30	3,579	- 7.8	45	283	23.3
600----	30	4,249	- 9.2	52	291	14.0	30	4,191	-11.3	39	288	28.0
550----	30	4,916	-14.4	55	289	14.8	29	4,859	-15.8	40	282	31.5
500----	30	5,630	-20.1	56	292	16.9	29	5,568	-20.8		282	34.2
450----	30	6,408	-26.1	51	291	17.3	29	6,339	-26.3		281	39.4
400----	30	7,243	-32.5	48	288	18.3	29	7,179	-32.6		282	41.2
350----	30	8,169	-40.1		284	23.1	29	8,106	-39.4		282	45.3
300----	30	9,201	-48.3		277	28.0	29	9,144	-46.3		281	53.6
250----	30	10,382	-55.6		278	37.7	29	10,337	-52.5		278	61.4
200----	30	11,789	-59.0		272	42.5	29	11,762	-56.1		278	59.2
175----	30	12,629	-57.9		271	44.7	29	12,609	-56.8		280	56.5
150----	30	13,603	-57.3		271	34.6	29	13,587	-56.5		279	47.4
125----	30	14,753	-58.1		271	34.6	29	14,740	-57.5		276	41.6
100----	30	16,154	-59.4		273	23.9	29	16,149	-57.8		282	28.4
80-----	27	17,547	-59.4		274	19.0	29	17,554	-58.1		278	20.0
60-----	24	19,350	-59.0		307	5.8	23	19,371	-56.6		276	8.9
50-----	19	20,500	-58.0		326	2.9	22	20,533	-55.6		290	1.7
40-----	16	21,913	-56.5		34	4.7	22	21,958	-54.6		17	1.7
30-----	10	23,753	-54.5				16	23,795	-53.4		359	1.4
20-----							12	26,449	-50.0		10	3.9
15-----							8	28,342	-47.2			

* May data for the above Air Force stations will be included in the September issue of this publication.

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. AUGUST 1956

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
ALBUQUERQUE, N. MEX.									
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Aug.									
1	----	----	----	----	Cloudy	----	----	----	----
2	----	----	----	----	Cloudy	----	----	----	----
3	0.78	----	----	1.17	1.36	1.16	0.96	0.79	0.65
4	.76	0.86	0.98	1.17	1.36	1.18	1.00	.87	.78
5	.75	.81	.93	1.09	1.33	1.24	1.15	1.04	.95
6	----	----	----	1.09	1.28	1.14	----	----	----
7	----	----	----	----	1.25	----	----	----	----
8	.77	.88	.99	1.15	1.32	1.22	1.08	.98	.88
9	.75	.86	.98	1.13	1.32	1.17	1.05	.95	.87
10	.71	.81	.91	1.09	1.27	1.17	1.00	----	----
11	----	----	----	----	----	1.08	.93	----	----
12	----	----	----	----	1.29	1.16	.98	.88	.77
13	.70	.81	.92	1.06	1.26	----	----	----	----
14	.71	.81	.93	1.06	----	----	----	----	----
15	----	----	----	----	Cloudy	----	----	----	----
16	----	----	----	----	Cloudy	----	----	----	----
17	----	----	----	----	Cloudy	----	----	----	----
18	----	----	----	----	1.17	----	----	----	----
19	.76	.87	.98	1.12	1.28	----	----	----	----
20	----	----	----	----	Cloudy	----	----	----	----
21	Off	----	----	Sun	1.24	----	----	----	----
22	.73	.83	.95	1.12	1.30	----	----	----	----
23	.69	.80	.92	1.07	1.23	----	----	----	----
24	.67	.76	.87	----	----	----	----	----	----
25	.71	.80	.93	1.07	1.24	----	----	----	----
26	----	----	----	----	Cloudy	----	----	----	----
27	----	----	----	----	Cloudy	----	----	----	----
28	H.58	H.67	H.75	H.88	----	----	----	----	----
29	.60	.70	.84	1.02	----	----	----	----	----
30	.81	.90	1.00	1.13	1.23	1.09	.97	.85	.77
31	.71	.79	.93	1.09	----	----	----	----	----
Averages	.72	.81	.93	1.09	1.28	1.16	1.01	.91	.81
BLUE HILL, MASS.									
	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
Aug.									
2	----	----	----	1.12	1.29	----	----	----	----
3	0.45	0.71	0.86	1.04	----	----	----	----	----
5	----	----	.74	.93	----	----	----	----	----
9	----	.44	.57	.78	----	----	0.67	0.54	0.43
11	----	.66	.81	1.02	----	----	----	----	----
14	----	----	----	----	----	1.01	.83	.66	.55
15	----	.76	.84	1.00	----	----	----	----	----
16#	.76	.84	.91	.99	----	K.93	K.68	K.50	----
17	K.40	K.48	K.59	K.77	----	----	----	----	----
18	K.51	K.64	K.82	K.99	----	----	----	----	----
25	.90	.97	1.09	1.23	1.33	----	----	----	----
26	----	----	----	1.07	----	.96	.70	.51	.41
27	.53	.62	.76	----	----	----	----	----	----
Averages	.59	.68	.80	.99	(1.31)	.97	.72	.55	.46

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
TABLE MOUNTAIN, CALIF.									
	Air mass								
	5.0	4.0	3.0	2.0	*0.75	2.0	3.0	4.0	5.0
Aug.									
1	----	----	----	1.37	----	----	----	----	----
2	----	----	----	1.44	----	----	----	----	----
3	1.12	1.20	1.31	1.43	----	----	----	----	----
4	----	----	----	1.44	----	----	----	----	----
6	1.13	1.22	1.31	1.44	----	----	----	----	----
7	----	----	----	1.45	----	----	----	----	----
8	----	----	----	1.48	----	----	----	----	----
10	----	----	----	1.38	----	----	----	----	----
12	----	----	----	1.37	----	----	----	----	----
13	----	----	----	1.38	----	----	----	----	----
14	----	----	----	1.35	----	----	----	----	----
15	----	----	----	1.43	----	----	----	----	----
16	----	----	----	1.43	----	----	----	----	----
17	----	----	----	1.42	----	----	----	----	----
18	----	----	----	1.38	----	----	----	----	----
19	----	----	----	1.39	----	----	----	----	----
20	----	----	----	1.39	----	----	----	----	----
22	----	----	----	1.35	----	----	----	----	----
25	----	----	----	1.52	----	----	----	----	----
27	----	----	----	1.36	----	----	----	----	----
31	----	----	----	1.29	----	----	----	----	----
Averages	1.12	1.21	1.31	1.40	----	----	----	----	----

H Haze
K Smoke
# Forest fire 1/2 mile northeast burned from PM of 16th to 22nd.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys	152	145	131	162	101	155	139	141	134	148	134	125	135	138	121	134	120	54	104	121	100	113	115	104
Date	27	28	29	30	31	1	2																	
Langleys	121	116	113	71	76	107	96	100																

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys	180	135	295	348	103	365	237	238	301	264	373	365	324	316	218	309	147	44	107	358	138	374	359	218
Date	27	28	29	30	31	1	2																	
Langleys	327	304	218	64	68	93	116	170																

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys	175	154	267	245	145	243	151	197	204	219	270	291	288	---	201	(245)	154	21	135	326	108	344	298	198
Date	27	28	29	30	31	1	2																	
Langleys	233	298	192	32	32	70	68	132																

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys	279	200	275	409	235	396	156	279	204	434	297	377	306	281	244	306	146	47	254	346	252	399	368	259
Date	27	28	29	30	31	1	2																	
Langleys	271	333	175	70	71	125	104	164																

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26	
Langleys	224	221	114	195	115	150	212	176	206	203	---	-	149	168	197	(164)	213	49	139	94	135	50	89	109
Date	27	28	29	30	31	1	2																	
Langleys	163	131	182	82	96	141	138	133																

Note: **Langley** is the unit used to denote one gram calorie per square centimeter.

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys	272	315	240	344	390	353	**	356	378	*332	*357	385	384	*304	320	*391	317	*370	*189	*223	*6	**	251	202	223	276	331	**	325	319	363	304

* Estimated values owing to occurrence of rain during period. While rain is falling, radiation is assumed to be zero

** Radiometer inoperative

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of Bermuda grass. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh. The instrument with which they were measured has not been checked by the Weather Bureau.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. AUGUST 1956

	Aklavik, MacKenzie	Albrook Air Base Panama, C. Z.	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.
1956													
Aug. 6-----	488	422	769	64	404	688	---	232	671	400	591	483	---
Aug. 7-----	291	551	712	281	664	571	287	581	544	342	649	400	---
Aug. 8-----	231	463	746	561	665	652	259	454	571	587	634	580	---
Aug. 9-----	228	327	747	627	652	434	195	326	592	561	612	537	---
Aug. 10-----	185	316	733	533	440	378	141	167	422	354	634	351	---
Aug. 11-----	96	124	722	624	649	555	263	96	624	574	626	544	---
Aug. 12-----	235	443	731	630	460	597	240	225	616	351	628	325	---
Average------	251	378	737	474	562	554	231	297	577	453	625	460	---
Aug. 13-----	239	232	641	626	(684)	281	210	111	657	440	617	433	---
Aug. 14-----	394	343	661	348	713	290	376	186	644	502	127	483	618
Aug. 15-----	519	166	617	321	674	397	403	336	588	579	599	566	660
Aug. 16-----	495	---	678	74	550	578	401	333	617	618	617	605	622
Aug. 17-----	433	409	671	123	545	629	248	308	251	572	605	529	543
Aug. 18-----	271	---	659	308	682	609	174	392	298	520	614	499	671
Aug. 19-----	418	---	650	135	(679)	565	451	181	656	422	607	---	618
Average------	396	---	654	276	(647)	478	324	264	530	522	541	519	622
Aug. 20-----	414	431	612	58	(463)	575	119	402	654	320	596	326	337
Aug. 21-----	173	---	673	29	418	612	250	136	600	93	595	83	436
Aug. 22-----	190	---	694	173	666	549	302	280	618	277	591	260	631
Aug. 23-----	182	---	724	111	660	348	342	141	622	612	460	618	528
Aug. 24-----	153	---	549	322	661	378	219	146	600	247	582	225	495
Aug. 25-----	88	---	690	457	326	384	271	246	564	635	544	597	337
Aug. 26-----	94	---	---	254	580	245	272	152	541	557	397	543	323
Average------	185	---	657	201	(539)	442	254	215	600	392	538	379	441
Aug. 27-----	101	---	682	355	649	270	206	(179)	460	445	226	427	611
Aug. 28-----	61	---	618	295	324	575	387	157	376	530	550	511	557
Aug. 29-----	107	---	616	324	501	410	155	289	470	364	470	349	494
Aug. 30-----	336	---	688	43	386	563	129	249	59	131	572	137	590
Aug. 31-----	211	---	664	306	409	600	167	252	214	130	599	86	488
Sept. 1-----	197	---	686	356	440	579	123	238	570	197	578	156	639
Sept. 2-----	335	---	682	407	587	621	160	100	165	199	616	234	357
Average------	192	---	662	298	471	517	190	(209)	331	285	516	272	534

	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.	Dodge City, Kans.	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.
1956												
Aug. 6-----	637	564	642	195	605	650	(623)	229	303	557	742	770
Aug. 7-----	539	---	---	727	566	642	634	555	233	---	676	664
Aug. 8-----	599	393	456	688	611	658	658	469	593	530	720	742
Aug. 9-----	650	643	623	371	352	641	579	271	504	412	693	727
Aug. 10-----	632	71	623	739	466	632	(619)	604	304	531	724	593
Aug. 11-----	618	440	600	538	385	661	643	336	551	322	738	635
Aug. 12-----	541	545	518	650	323	641	655	560	(598)	547	716	719
Average------	602	443	577	558	473	647	(630)	432	(441)	483	716	693
Aug. 13-----	613	634	588	395	555	636	647	324	---	(486)	620	440
Aug. 14-----	624	156	460	709	631	637	634	654	---	536	578	509
Aug. 15-----	618	444	354	637	620	641	649	415	607	527	559	651
Aug. 16-----	621	(652)	614	719	408	626	655	467	(578)	92	602	585
Aug. 17-----	---	556	631	614	375	609	635	569	(478)	353	---	---
Aug. 18-----	621	516	572	242	521	616	483	251	541	395	715	(667)
Aug. 19-----	559	205	496	239	121	500	499	631	355	552	697	671
Average------	609	(452)	531	508	462	609	600	473	(512)	(420)	628	(587)
Aug. 20-----	608	543	602	421	597	584	343	502	263	483	649	673
Aug. 21-----	593	391	345	725	660	608	707	471	114	400	(407)	697
Aug. 22-----	617	565	295	538	626	581	664	336	239	503	691	683
Aug. 23-----	624	439	573	263	621	598	(693)	256	559	---	640	606
Aug. 24-----	614	148	639	712	620	594	337	548	423	(350)	655	680
Aug. 25-----	589	581	496	616	555	576	593	645	622	442	673	589
Aug. 26-----	557	427	482	562	586	596	644	197	585	462	671	620
Average------	600	442	490	548	609	591	(569)	422	401	(440)	(627)	650
Aug. 27-----	585	558	---	473	595	572	664	410	549	196	599	685
Aug. 28-----	602	540	254	621	570	525	670	461	569	482	685	575
Aug. 29-----	659	333	596	554	462	521	604	312	399	440	701	534
Aug. 30-----	510	485	488	467	---	563	654	437	218	468	698	652
Aug. 31-----	559	563	488	601	337	558	642	582	315	405	658	660
Sept. 1-----	680	61	557	404	578	560	661	192	292	178	652	649
Sept. 2-----	632	171	552	652	587	560	616	555	243	115	684	605
Average------	604	387	489	539	522	551	645	421	369	326	668	623

	Fairbanks, Alaska	Ft. Worth, Tex.	Gainesville, Fla.	Glasgow, Mont.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Indianapolis, Ind.	Inyokern, Calif.	Lake Charles, La.	Lander, Wyo.	Las Vegas, Nev.
1956												
Aug. 6-----	129	578	679	496	---	609	770	490	---	633	744	764
Aug. 7-----	543	629	600	365	---	551	787	603	---	679	716	753
Aug. 8-----	288	682	473	583	---	634	604	466	---	653	687	749
Aug. 9-----	220	668	649	529	---	612	680	327	806	653	583	759
Aug. 10-----	---	653	271	370	---	526	759	540	756	637	590	687
Aug. 11-----	294	660	382	---	---	533	760	617	797	613	644	672
Aug. 12-----	204	646	415	---	---	529	627	612	793	642	556	712
Average------	280	645	495	469	---	571	713	522	788	644	646	728
Aug. 13-----	298	635	680	632	---	606	515	244	788	546	689	678
Aug. 14-----	321	617	421	647	---	484	661	606	790	320	550	688
Aug. 15-----	311	632	655	424	(334)	540	631	625	788	438	638	664
Aug. 16-----	467	611	411	637	632	---	606	392	766	610	422	707
Aug. 17-----	325	664	616	196	409	525	---	499	795	647	303	682
Aug. 18-----	359	649	608	326	335	511	418	451	776	609	294	709
Aug. 19-----	---	378	506	661	682	226	440	149	774	589	335	703
Average------	347	598	558	503	(478)	482	545	424	783	537	461	690
Aug. 20-----	391	565	319	653	676	332	547	380	764	356	555	698
Aug. 21-----	307	614	197	614	638	104	400	608	742	670	582	683
Aug. 22-----	400	644	481	600	632	444	---	586	747	668	655	674
Aug. 23-----	454	665	643	---	616	544	627	552	752	645	502	652
Aug. 24-----	401	618	635	432	359	591	655	608	763	440	488	667
Aug. 25-----	---	640	665	---	579	439	570	593	759	---	542	684
Aug. 26-----	282	589	657	299	(255)	429	398	561	731	217	605	682
Average------	373	619	513	520	(537)	412	533	556	751	499	561	677
Aug. 27-----	187	543	603	386	252	533	333	543	714	265	585	657
Aug. 28-----	77	(609)	578	171	306	412	432	513	709	186	668	647
Aug. 29-----	105	583	491	282	119	517	561	393	686	491	504	653
Aug. 30-----	144	536	586	183	250	555	502	383	697	569	376	641
Aug. 31-----	289	420	523	512	621	543	---	380	697	586	661	632
Sept. 1-----	398	634	---	---	378	444	349	237	699	424	641	634
Sept. 2-----	392	557	---	474	515	349	597	582	704	---	601	646
Average------	228	(554)	556	335	349	479	462	433	701	420	577	644

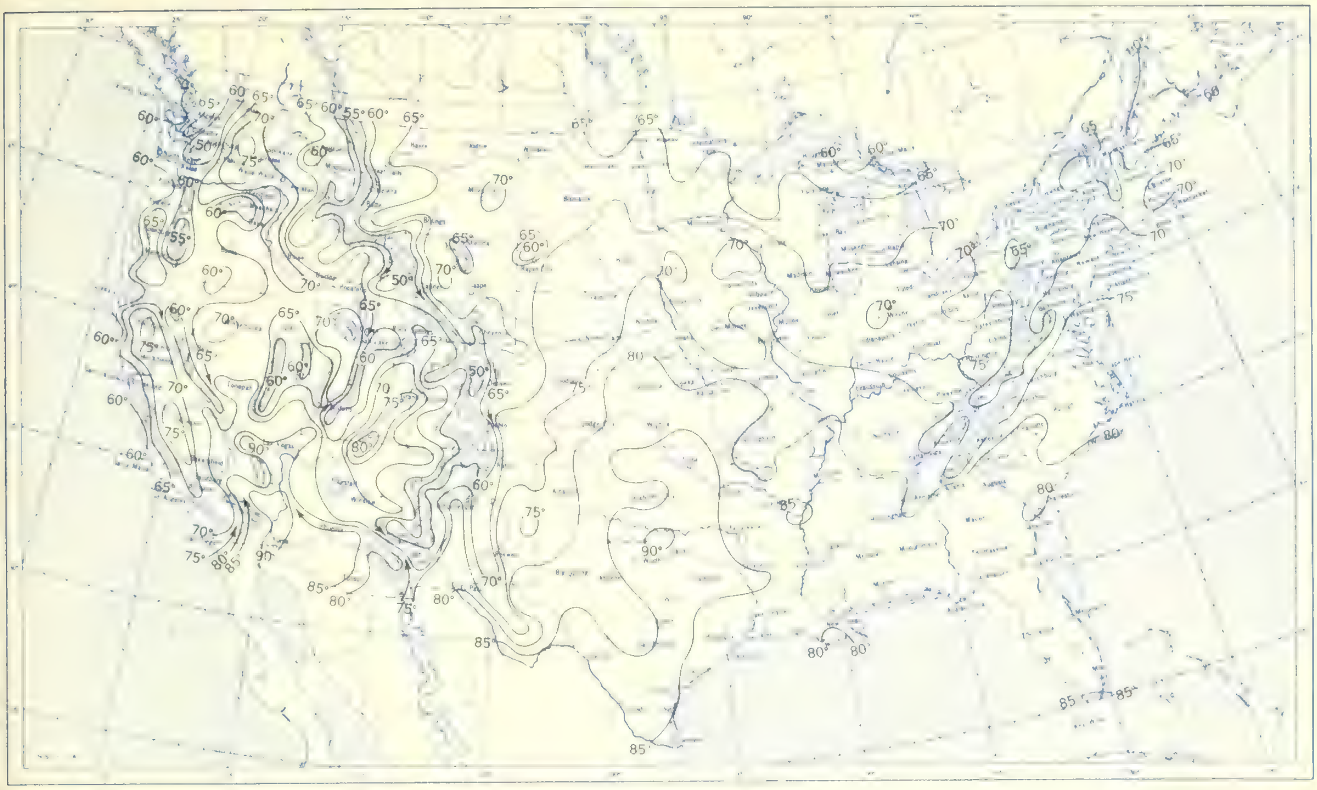
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued

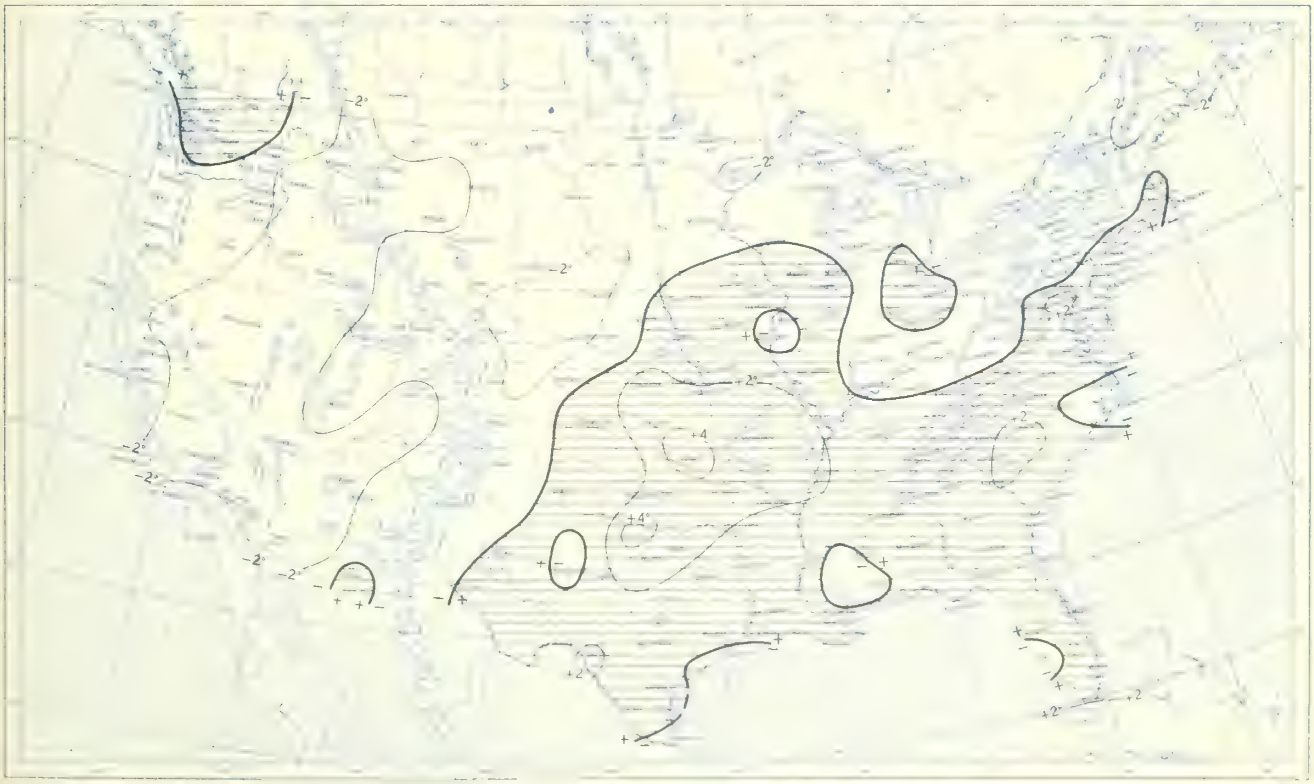
1956	Lemont, Ill.	Little Rock, Ark.	Los Angeles, Calif. (urban)	Los Angeles, Calif.	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Prosser 4 NE, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle, Wash. (U. of W.)	Seattle-Tacoma, Wash.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
Aug. 6-----	488	582	680	672	(545)	188	652	545	620	286	59	718	631	588	714	643	722	590	738	669	623	751	622	98	199	115	606	634	646	75	---	66	642	135	671	191	---
Aug. 7-----	578	566	631	632	432	---	636	556	---	255	528	640	658	541	718	546	727	518	718	470	701	730	668	644	522	502	628	617	681	233	359	417	624	597	688	---	553
Aug. 8-----	407	616	646	644	423	---	619	617	---	615	635	720	598	626	711	387	662	622	706	555	698	624	655	691	525	620	637	645	675	580	478	527	658	687	674	579	388
Aug. 9-----	547	489	716	686	567	494	639	682	---	608	626	671	576	421	696	586	712	444	702	697	699	660	347	647	434	634	573	522	660	545	301	341	631	663	695	(609)	(625)
Aug. 10-----	636	307	658	597	632	507	583	659	704	379	531	662	551	340	676	432	700	407	600	519	703	655	636	423	412	612	418	384	638	544	607	435	663	379	566	623	616
Aug. 11-----	464	289	637	599	493	496	611	642	701	627	647	531	680	479	610	612	685	662	682	655	641	570	584	666	450	649	598	546	574	541	562	507	537	652	678	627	600
Aug. 12-----	571	464	599	607	353	541	628	645	691	418	507	630	657	643	643	389	690	679	635	428	669	565	666	550	271	486	617	624	655	537	444	467	478	418	691	563	470
Average------	369	473	653	634	(492)	445	624	621	679	455	505	653	621	520	681	514	700	560	683	571	676	651	597	531	402	517	582	567	647	437	458	394	604	504	666	(532)	(543)
Aug. 13-----	470	543	671	663	488	263	627	645	---	495	287	520	671	385	658	615	642	693	681	679	675	662	418	318	267	375	372	349	651	191	606	361	591	351	692	409	616
Aug. 14-----	603	536	675	653	631	128	598	349	---	523	461	561	637	536	660	574	500	678	673	682	655	667	659	510	504	373	192	168	606	469	656	582	425	562	680	386	603
Aug. 15-----	663	526	681	---	614	---	623	608	---	602	583	696	639	685	445	588	619	408	707	657	635	684	619	586	531	634	97	131	425	606	496	516	404	597	648	532	562
Aug. 16-----	266	531	639	569	(301)	473	620	353	663	636	514	675	630	531	444	660	688	471	677	631	637	667	648	635	518	603	394	454	629	583	466	401	371	645	609	556	536
Aug. 17-----	564	512	577	506	342	414	601	324	---	568	507	409	665	574	649	574	677	370	568	495	625	541	515	628	504	544	595	592	641	534	417	428	476	626	666	613	572
Aug. 18-----	154	547	614	556	148	319	554	428	---	590	537	574	653	359	679	532	654	185	633	361	642	577	341	609	295	564	586	586	643	381	560	72	698	623	516	581	321
Aug. 19-----	578	244	579	586	541	275	534	505	447	463	443	472	147	542	676	342	647	175	634	466	616	562	725	428	345	475	561	558	636	375	612	345	715	595	679	477	425
Average------	330	491	634	589	(438)	312	594	459	---	554	476	558	577	516	601	555	632	426	653	567	641	623	561	530	423	510	400	405	605	448	545	386	526	571	641	508	519
Aug. 20-----	495	59	597	586	500	280	563	395	461	223	119	346	686	602	667	420	640	643	685	604	510	666	672	174	290	130	565	566	630	156	668	574	672	191	671	252	459
Aug. 21-----	679	596	649	637	603	256	548	517	657	141	84	566	693	451	650	47	637	673	650	541	688	658	458	114	93	166	573	573	632	501	379	511	672	119	681	113	471
Aug. 22-----	571	589	666	662	546	293	569	471	---	454	242	739	680	130	---	356	607	659	645	607	667	666	97	445	379	(513)	508	512	633	649	731	292	689	361	618	540	533
Aug. 23-----	639	560	656	653	446	435	578	379	---	647	607	674	659	25	---	590	408	647	644	636	661	675	491	611	413	606	284	283	380	570	582	19	670	682	572	598	507
Aug. 24-----	625	520	613	614	581	198	420	463	659	386	458	608	613	413	---	211	558	640	629	569	674	679	689	360	402	(565)	387	476	458	529	595	558	671	383	682	629	476
Aug. 25-----	654	336	603	568	572	---	503	565	---	654	623	543	621	604	624	648	303	510	667	401	468	625	520	653	507	(588)	188	(156)	298	624	423	450	548	647	657	604	453
Aug. 26-----	368	420	465	384	114	345	612	487	---	601	489	532	644	411	629	404	207	578	642	446	223	552	529	581	448	(427)	156	143	79	556	580	451	453	614	672	470	559
Average------	403	440	607	586	480	301	542	468	---	444	375	573	656	377	642	382	480	621	652	543	556	646	494	420	362	(428)	380	(387)	444	512	565	408	625	428	650	458	508
Aug. 27-----	594	263	153	252	534	98	566	508	---	537	329	478	628	469	594	596	583	555	439	785	510	560	611	465	444	119	---	244	224	241	635	234	645	166	535	474	(281)
Aug. 28-----	434	---	121	127	237	292	582	411	629	536	481	248	555	322	637	505	599	641	331	530	512	392	176	533	424	(556)	480	486	571	524	584	172	691	563	626	526	371
Aug. 29-----	338	403	349	355	426	217	563	392	621	456	498	394	575	341	653	272	555	595	404	612	472	545	88	548	353	(494)	311	(197)	359	481	551	91	705	550	661	561	317
Aug. 30-----	350	277	335	339	257	236	577	456	642	186	151	581	627	81	657	76	---	412	334	393	530	637	124	105	159	(402)	533	537	587	477	472	132	700	132	647	535	397
Aug. 31-----	483	---	369	324	474	424	567	325	---	264	273	452	545	91	653	34	---	631	428	259	412	386	301	232	322	(285)	507	528	596	504	552	259	726	278	662	520	75
Sept. 1-----	411	---	523	475	545	453	554	437	---	208	323	432	629	137	647	115	---	628	580	520	533	573	251	203	344	456	429	465	376	546	558	370	691	315	583	561	[illegible]
Sept. 2-----	629	---	439	359	558	355	592	497	624	186	133	657	610	333	640	193	---	601	611	598	318	596	611	215	180	(320)	533	541	572	378	476	413	671	263	678	377	442
Average------	324	---	327	319	433	296	571	432	629	339	313	463	596	253	640	256	---	580	447	528	470	527	309	329	318	(419)	466	(428)	469	450	561	239	690	367	627	508	(313)

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Chart I. A. Average Temperature (°F.) at Surface, August 1956.

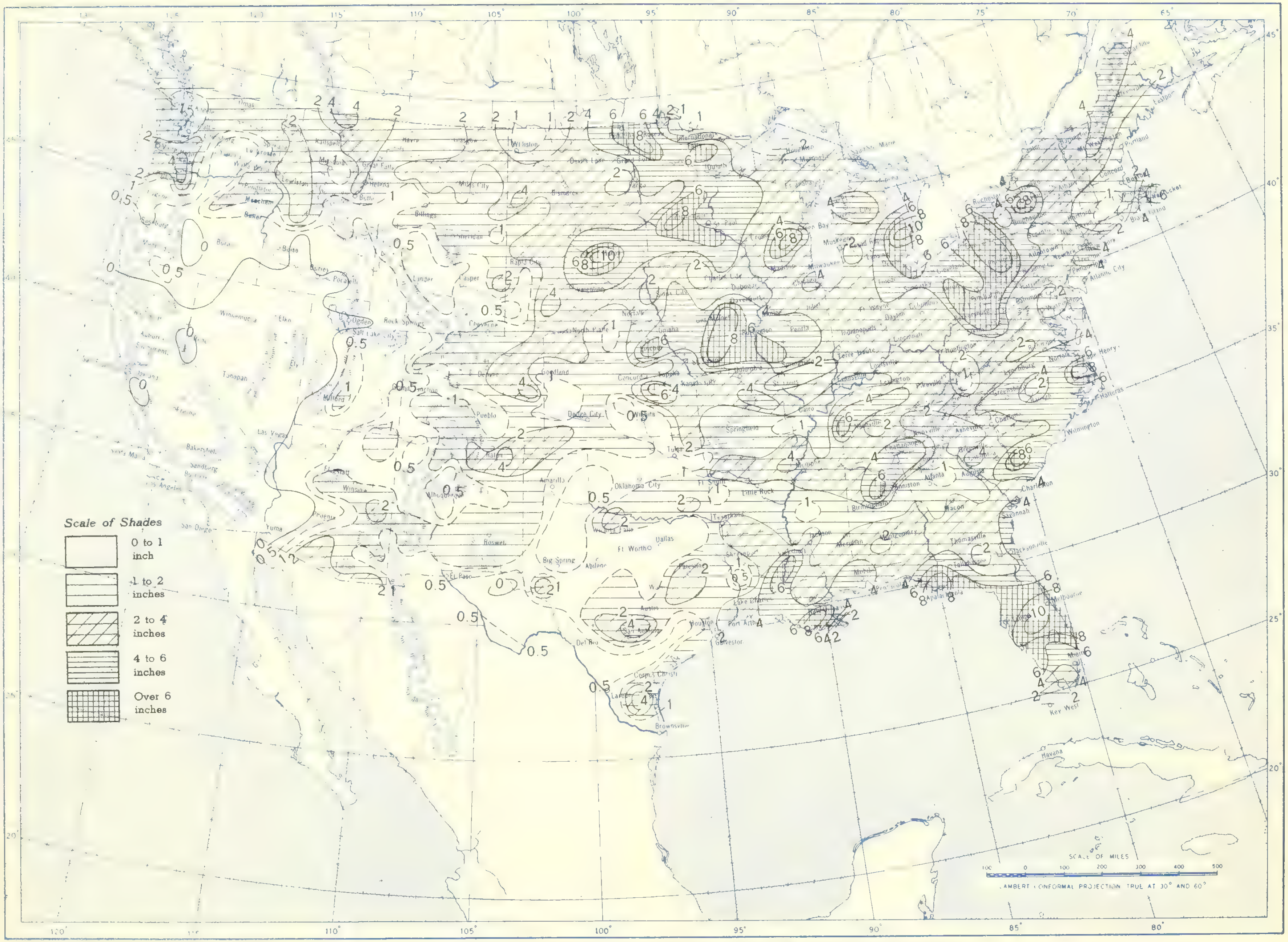


B. Departure of Average Temperature from Normal (°F.), August 1956.



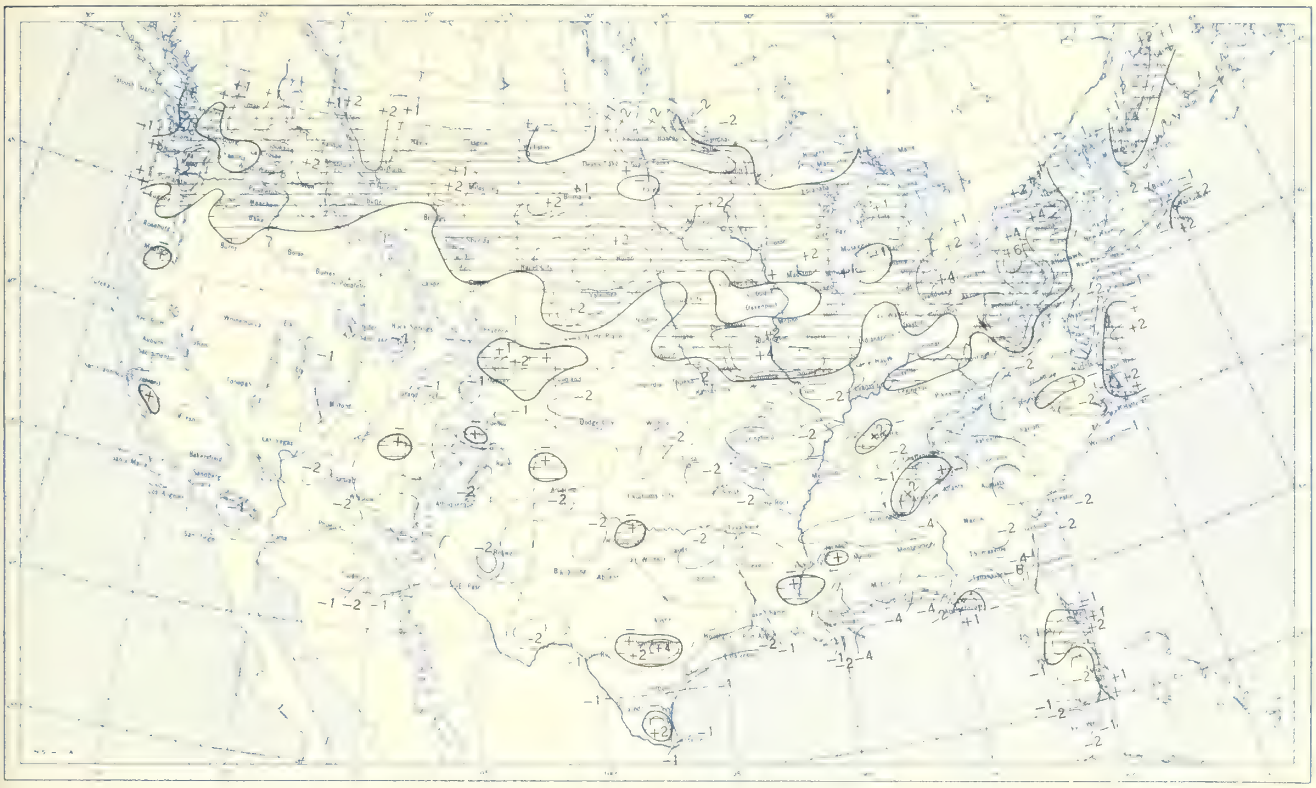
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), August 1956.

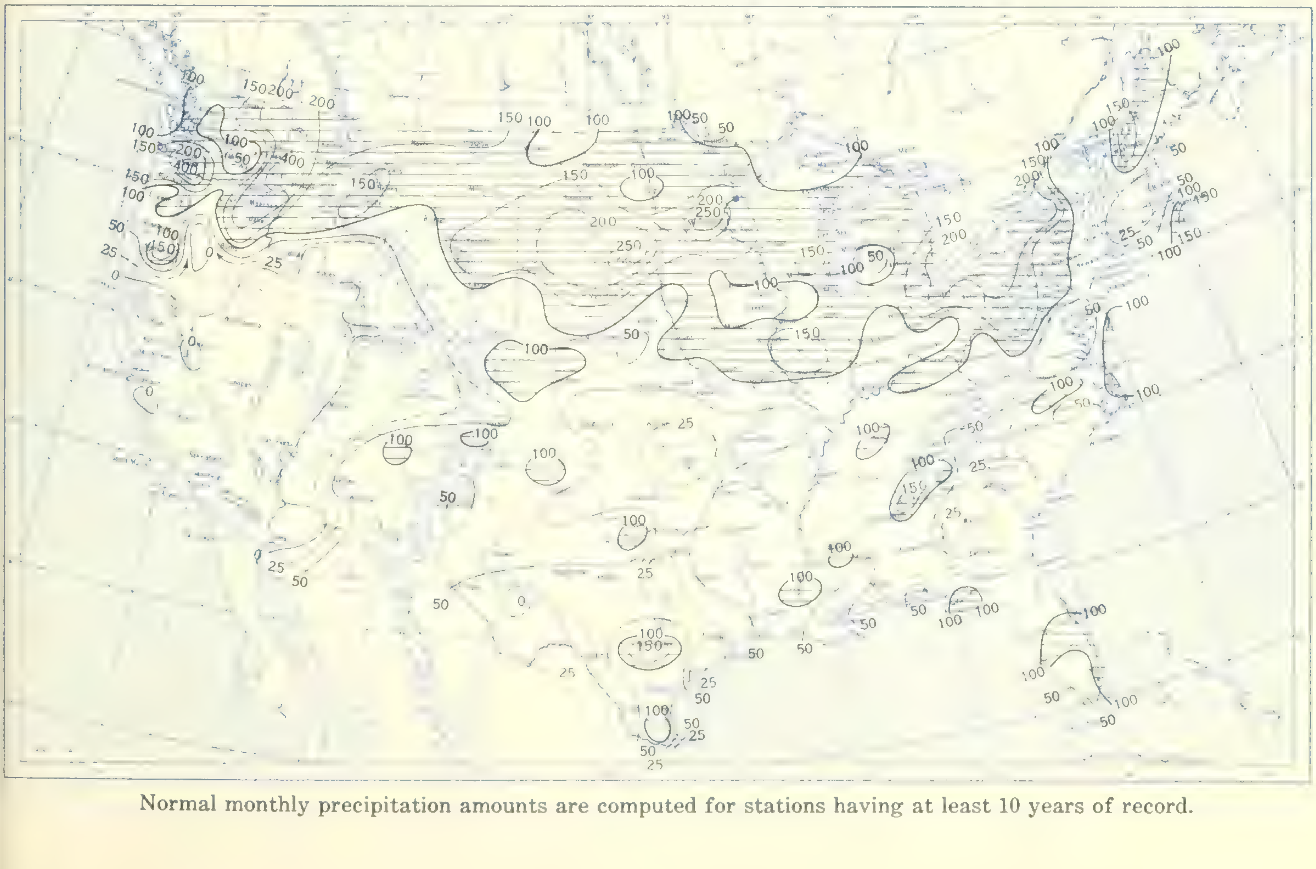


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), August 1956.

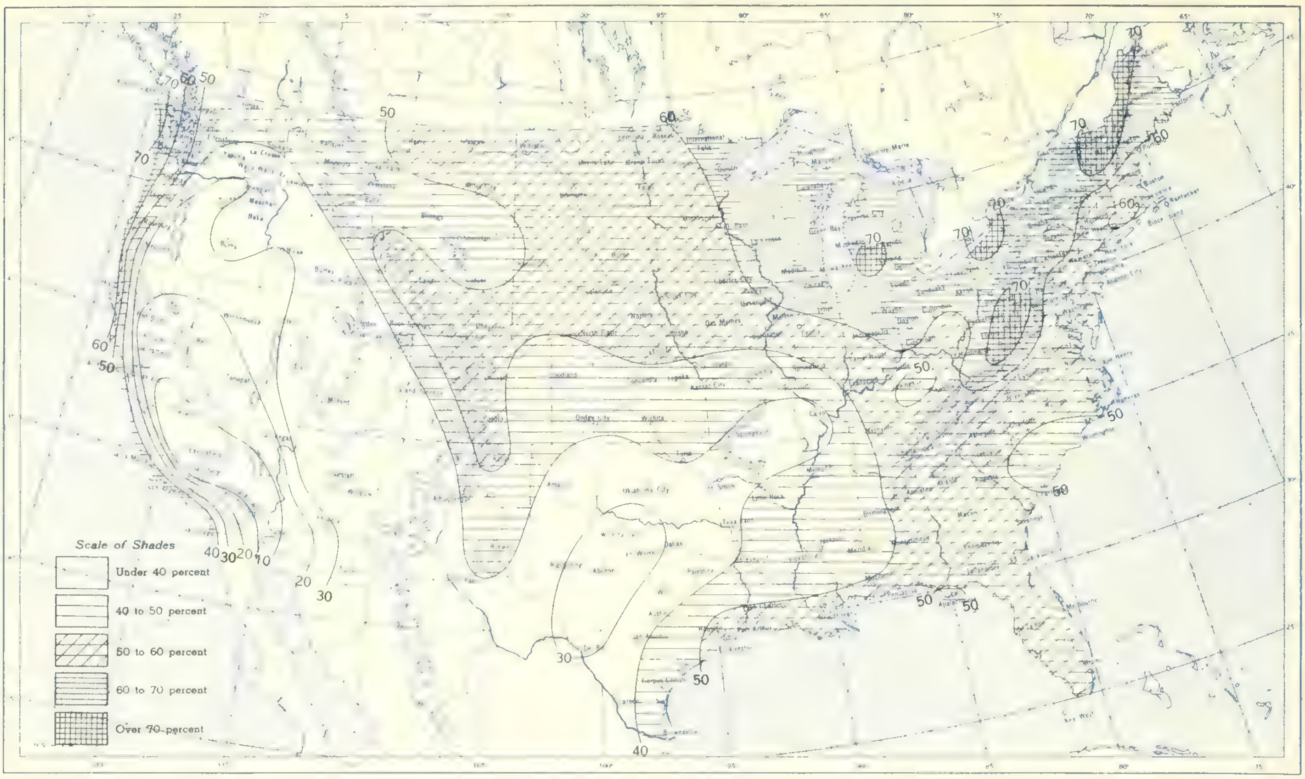


B. Percentage of Normal Precipitation, August 1956.

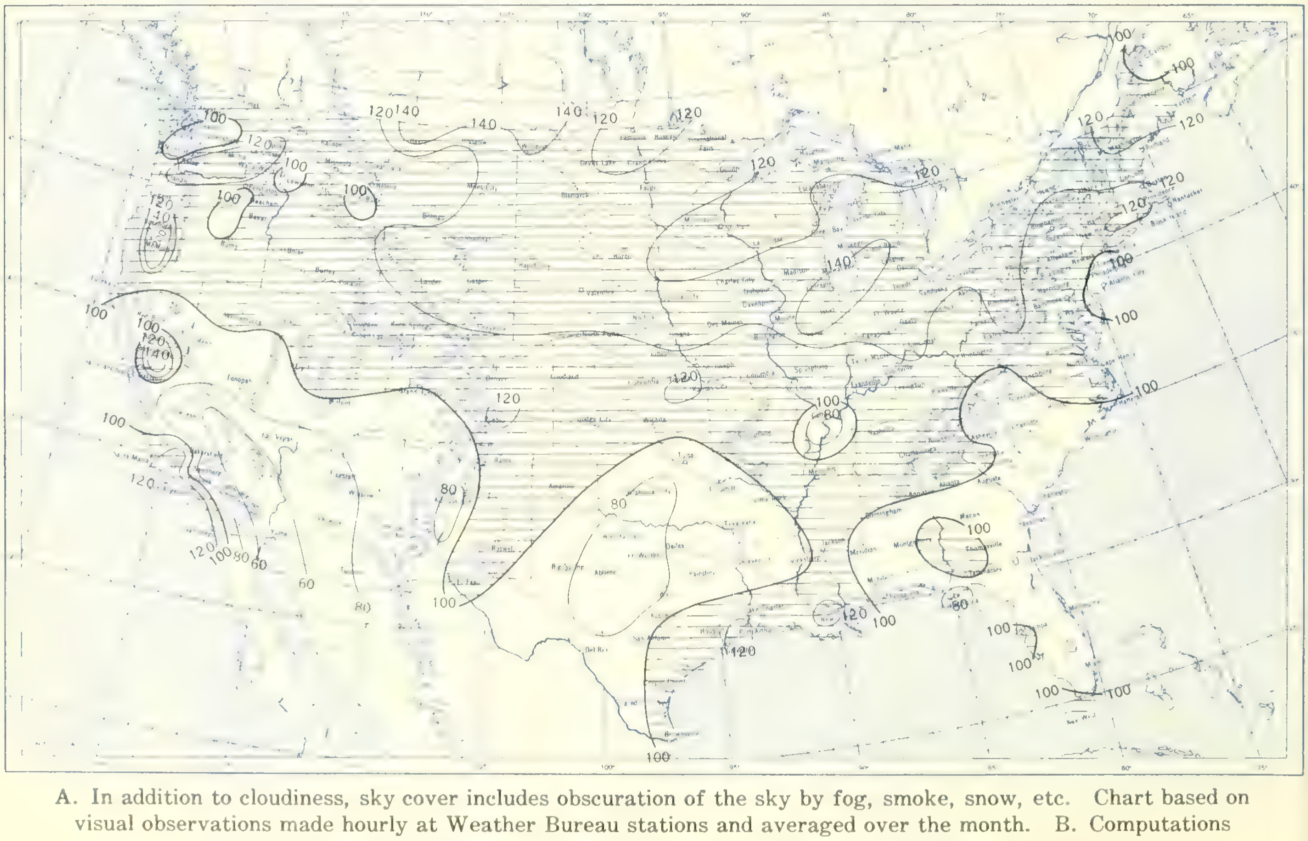


Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, August 1956.

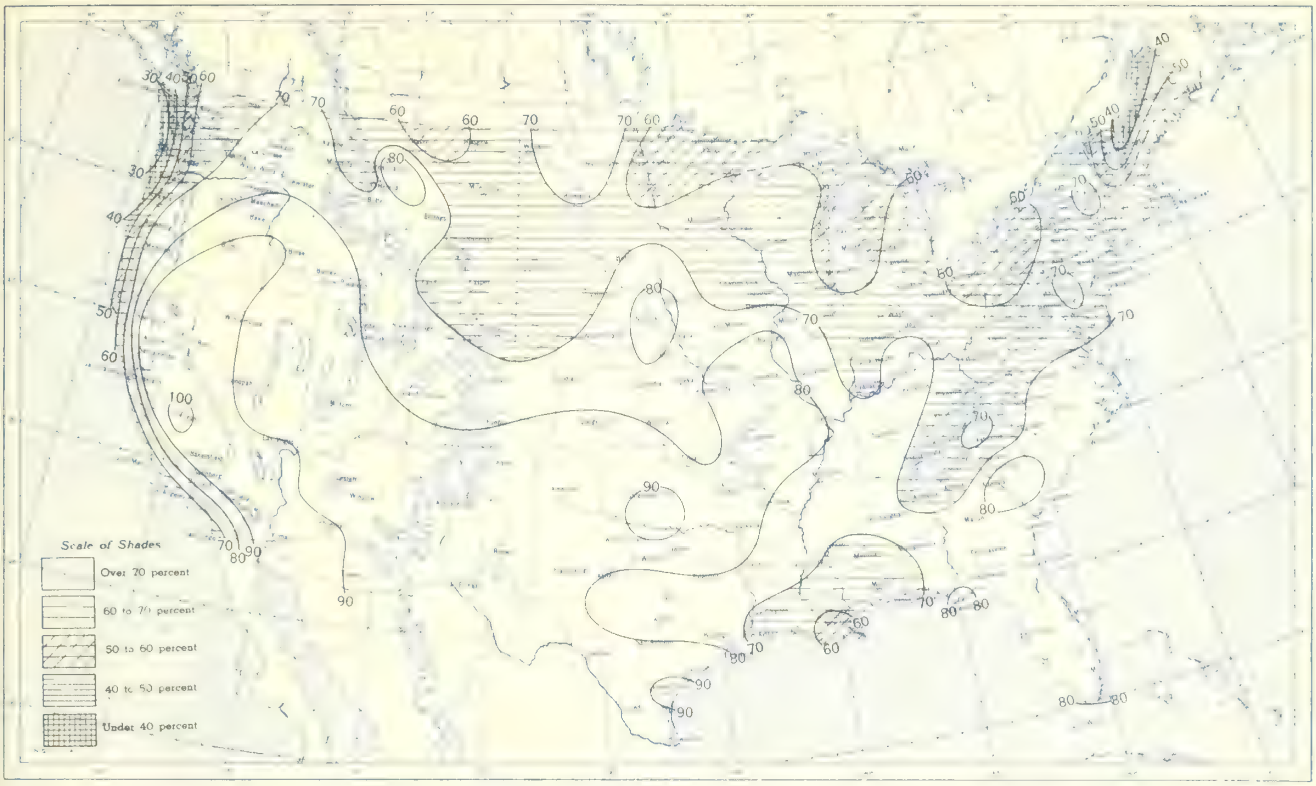


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, August 1956.

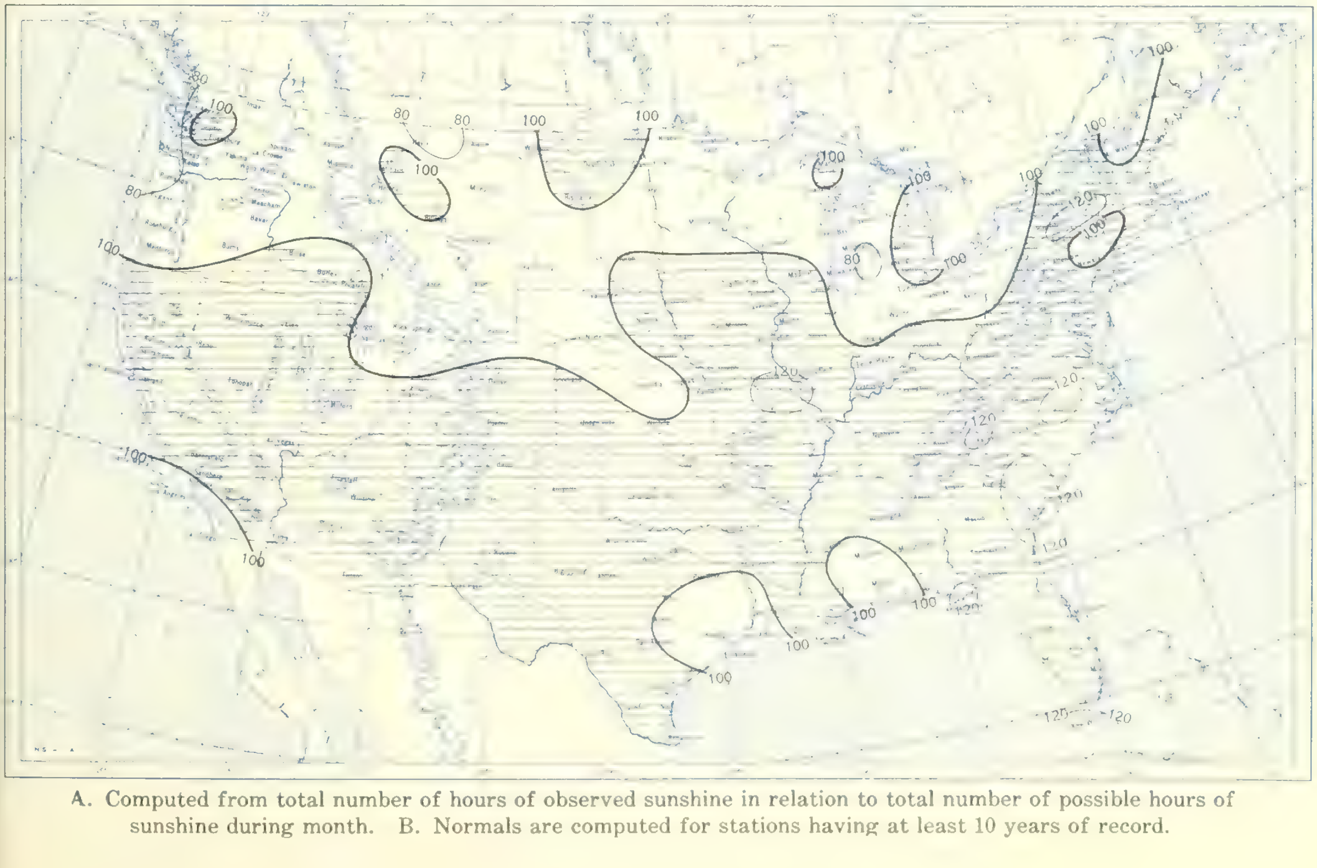


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, August 1956.



B. Percentage of Normal Sunshine, August 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, August 1956. Inset: Percentage of Mean Daily Solar Radiation, August 1956. (Mean based on period 1951-55.)

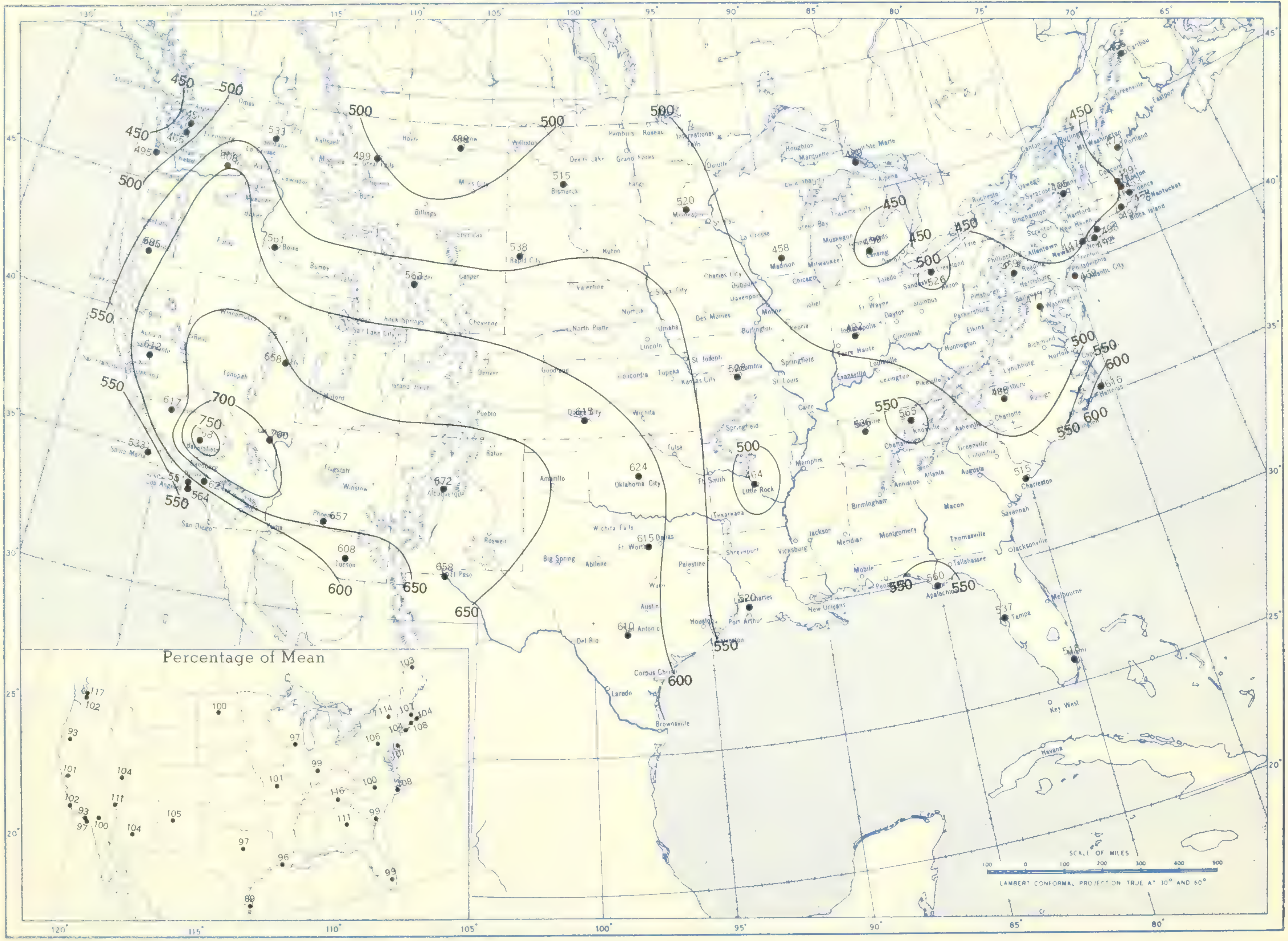
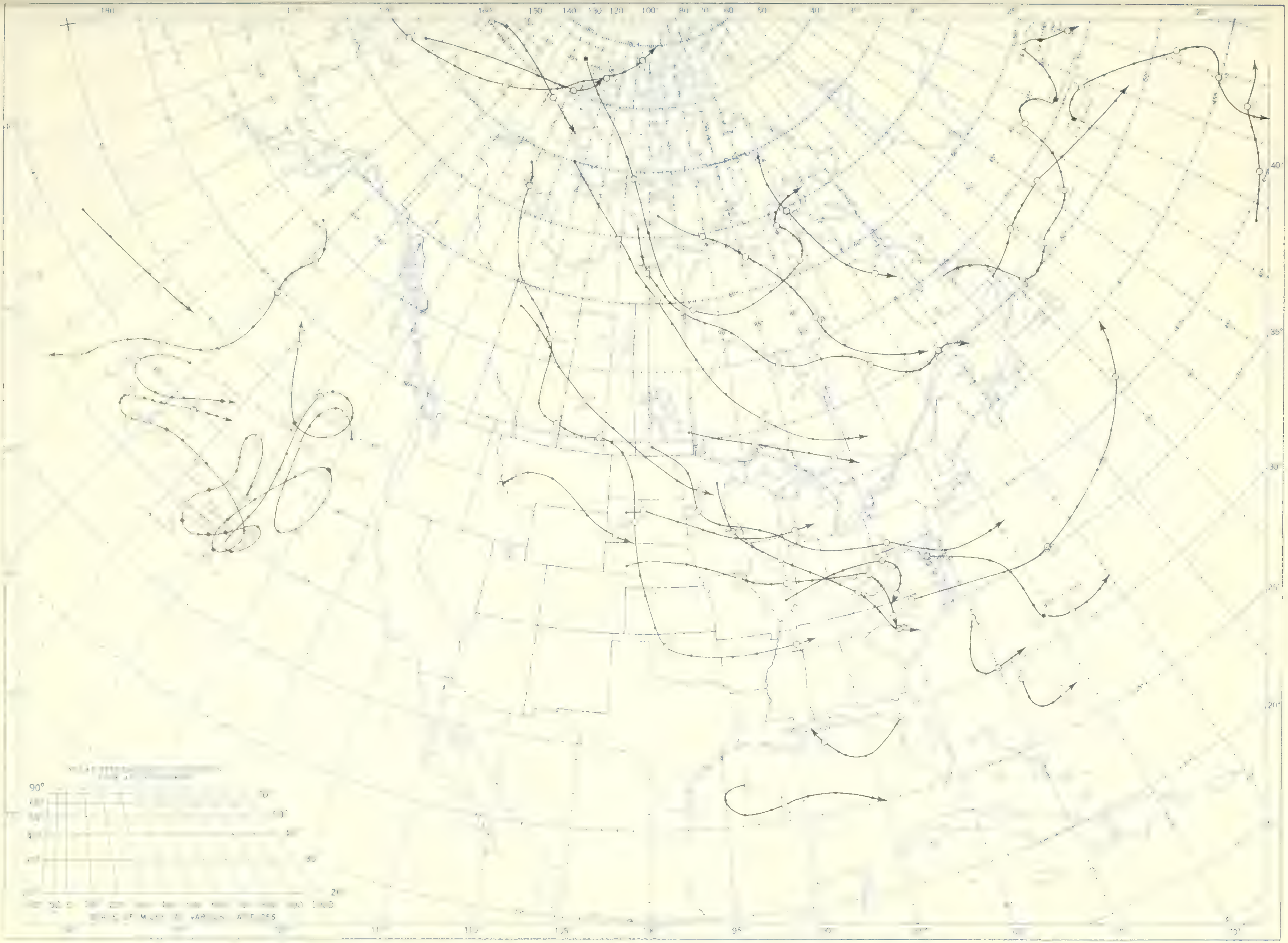


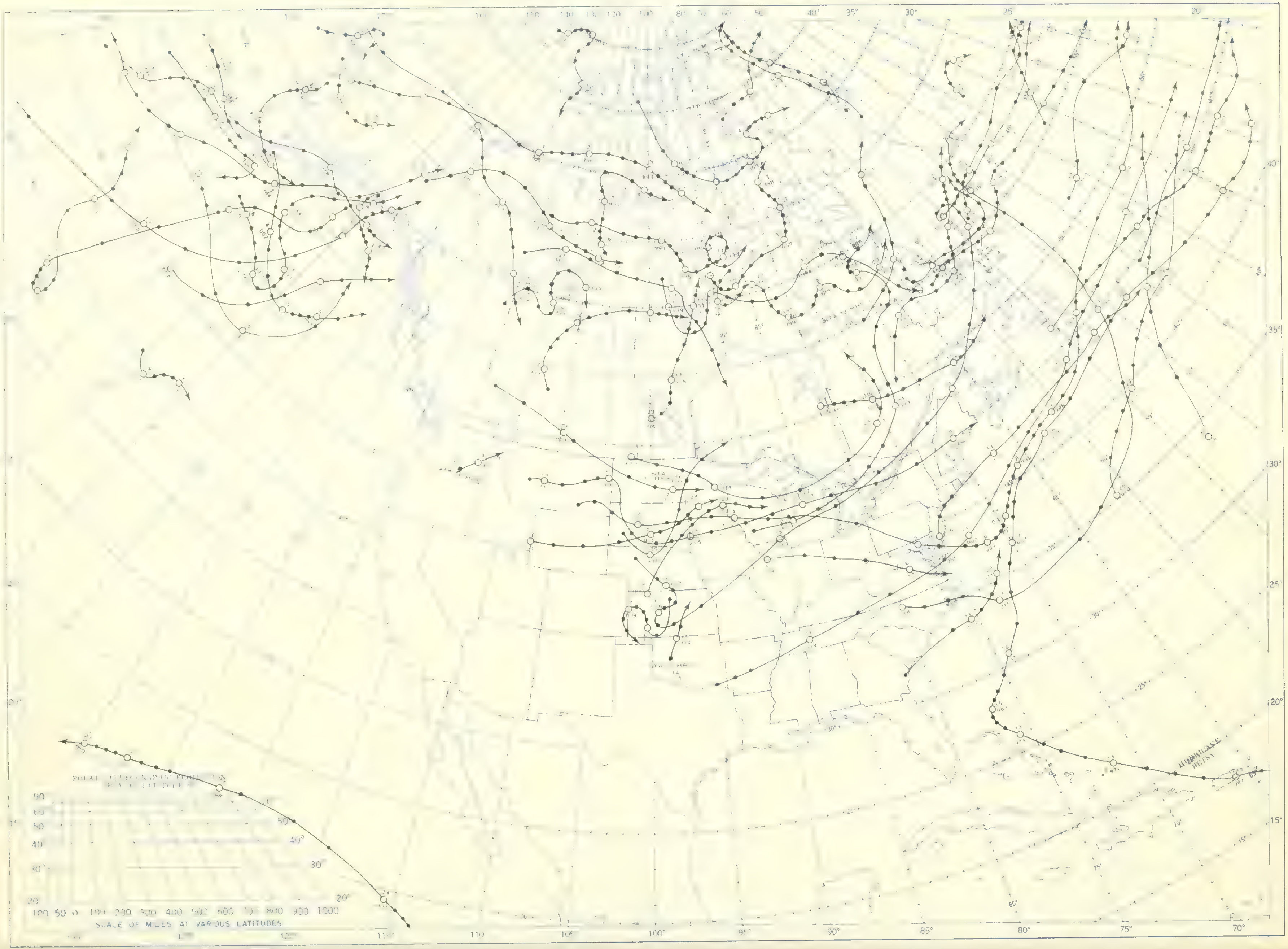
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$). Basic data for isolines

Chart IX. Tracks of Centers of Anticyclones at Sea Level, August 1956.



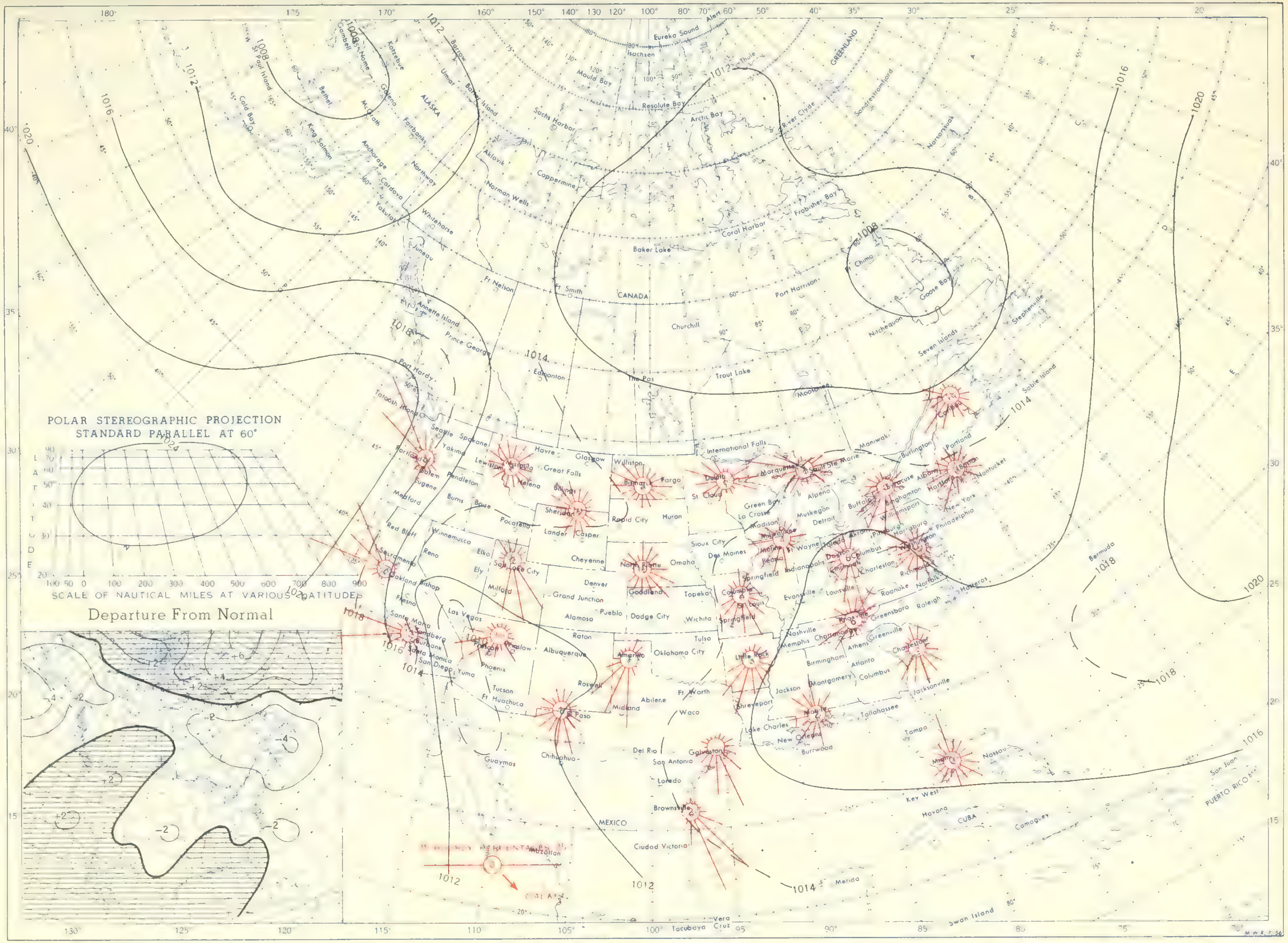
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, August 1956.



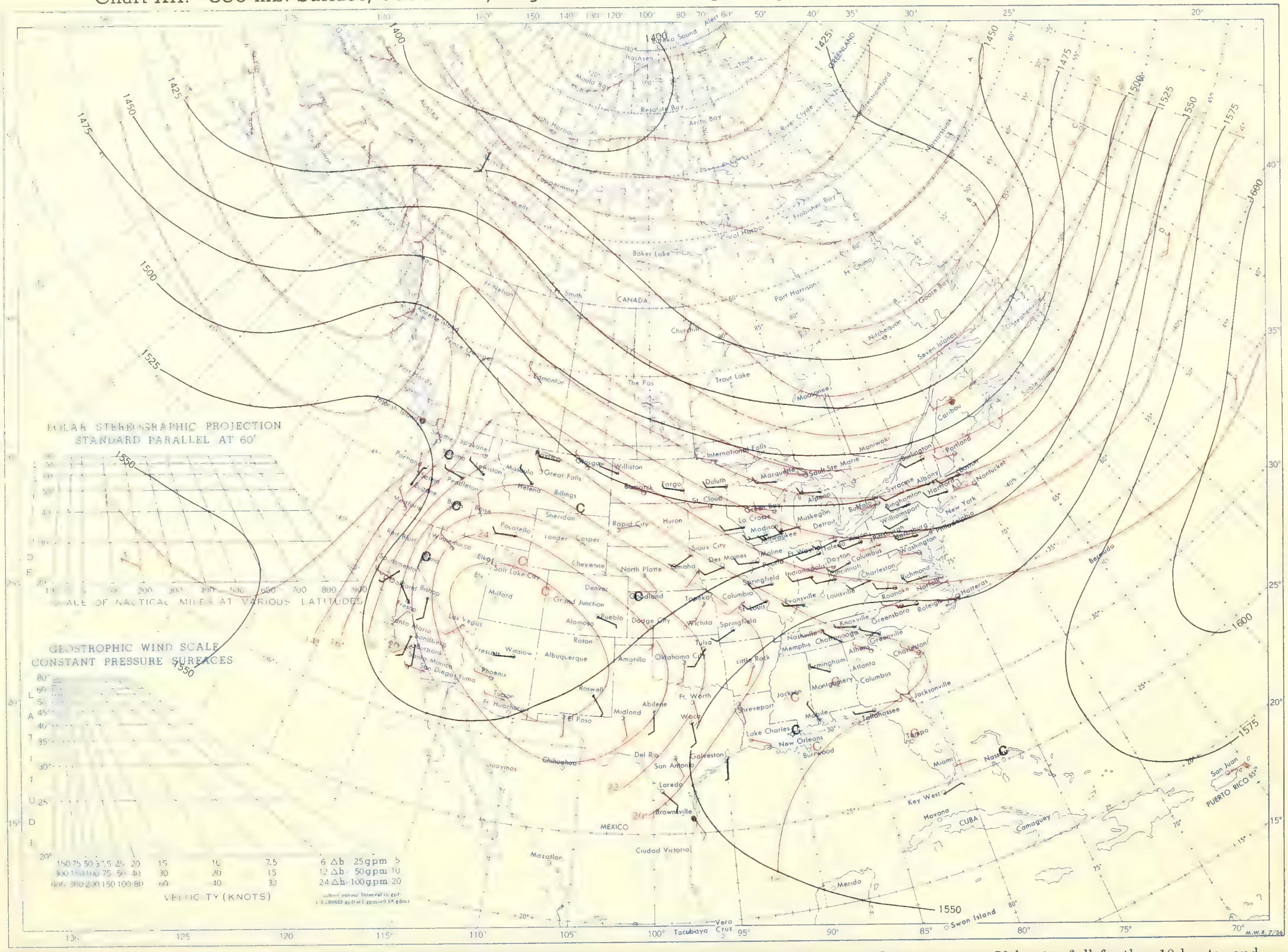
Circle indicates position of center at 7:30 a.m. E.S.T. See Chart IX for explanation of symbols.

Average Pressure (mb.) from Normal, August 1956.



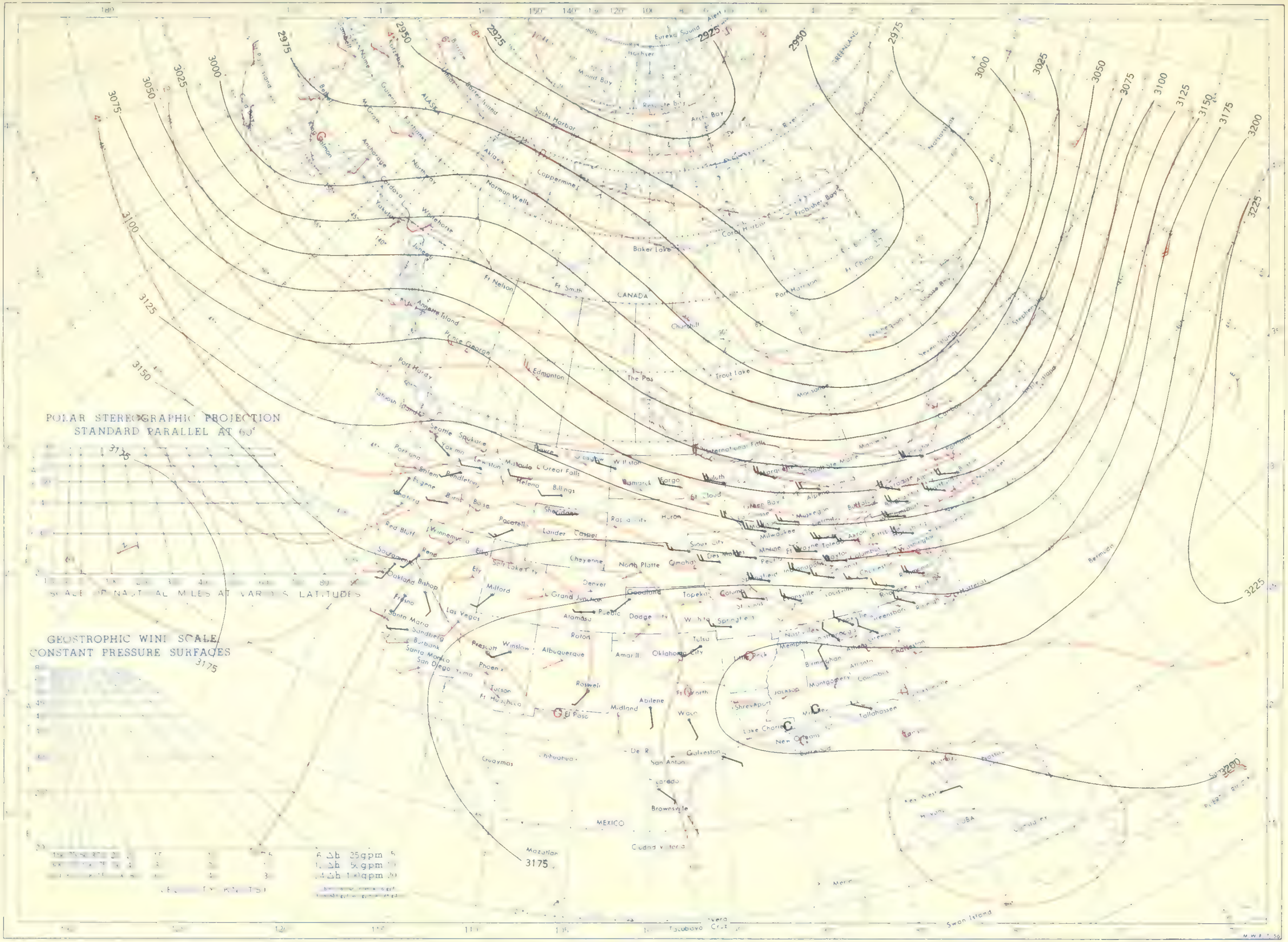
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 0300 GMT, August 1956. Average Height and Temperature, and Resultant Winds.



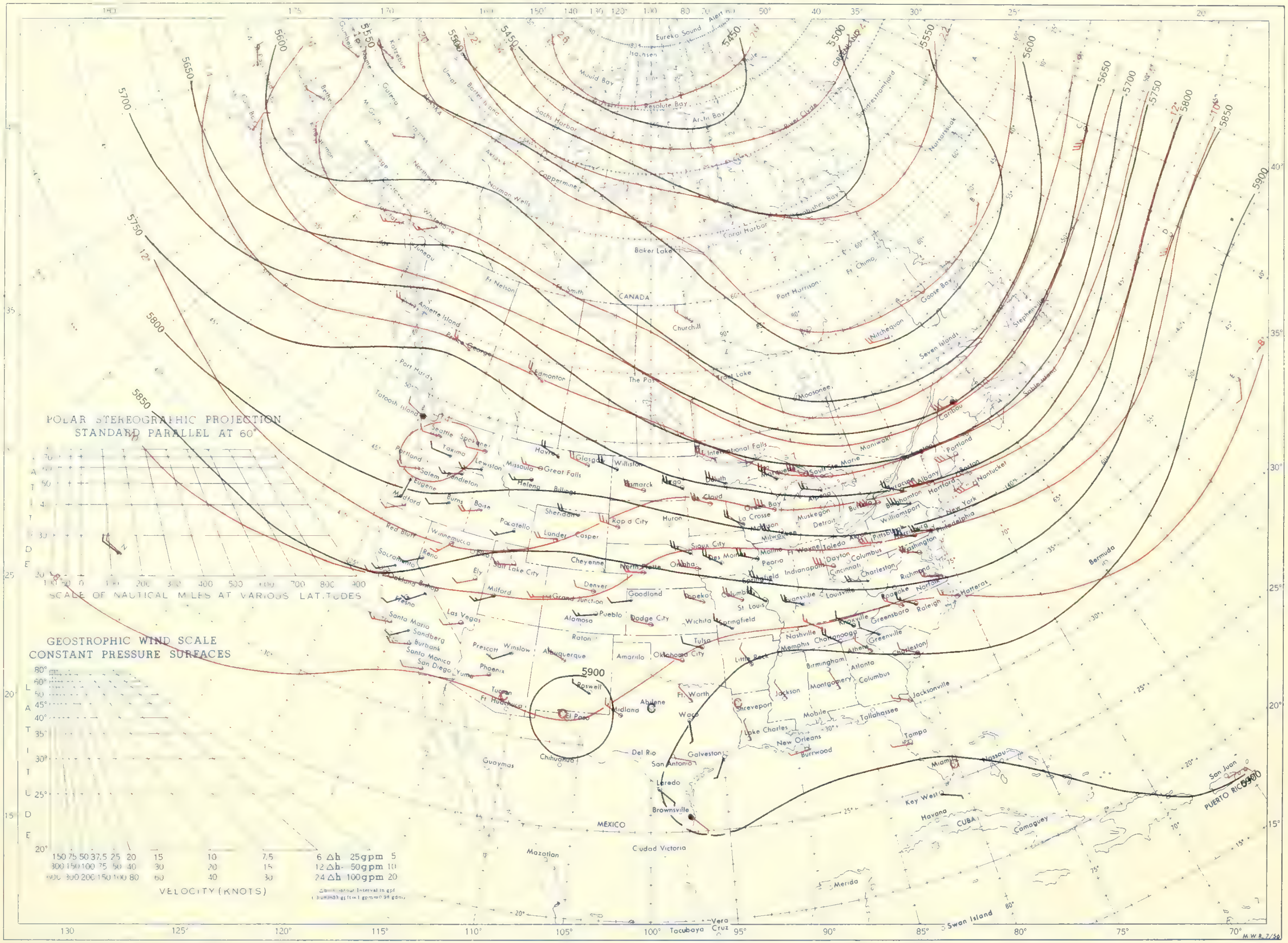
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and

Chart XIII. 700-mb. Surface, 0300 GMT, August 1956. Average Height and Temperature, and Resultant Winds.



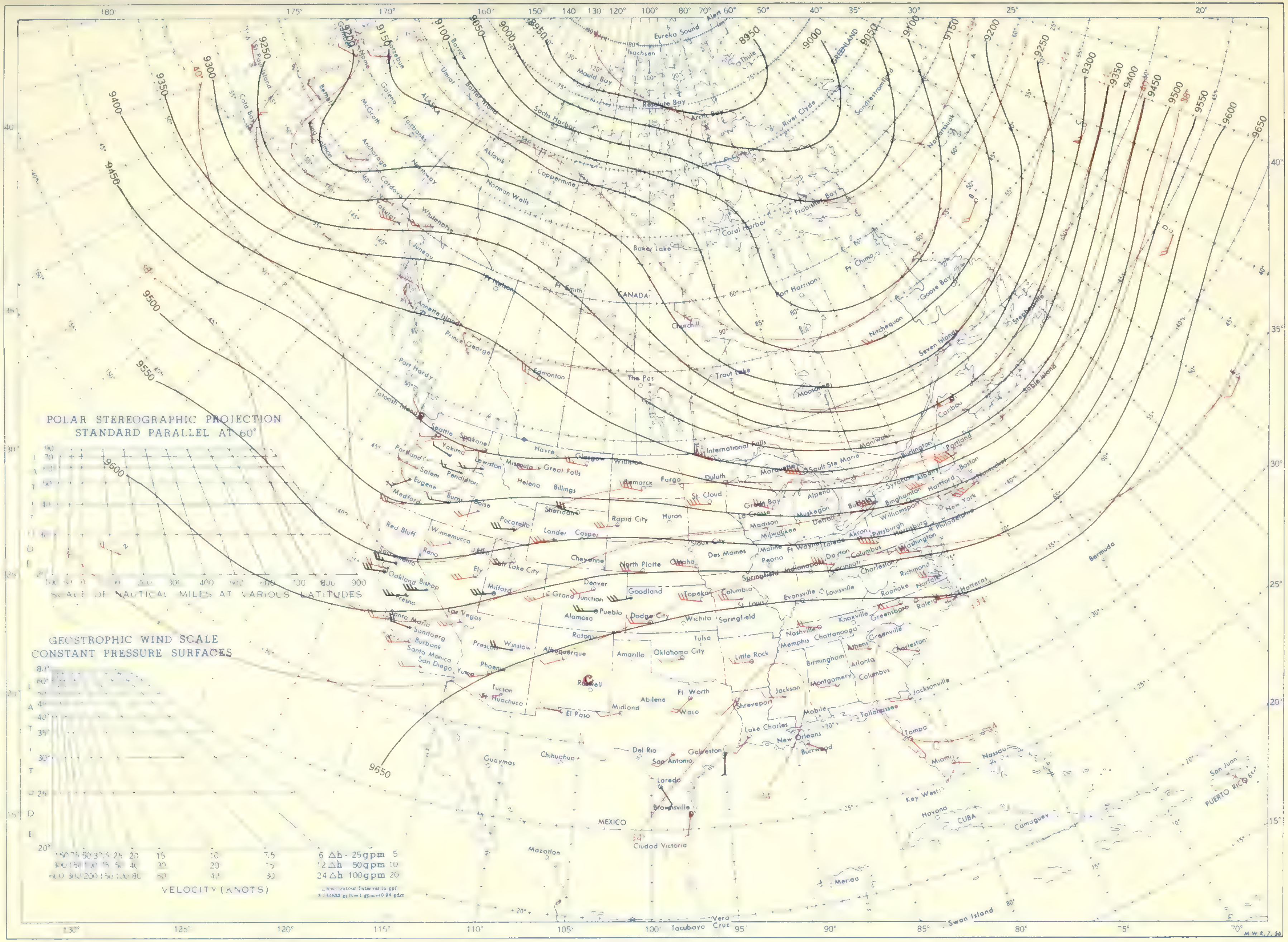
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 0300 GMT, August 1956. Average Height and Temperature, and Resultant Winds.



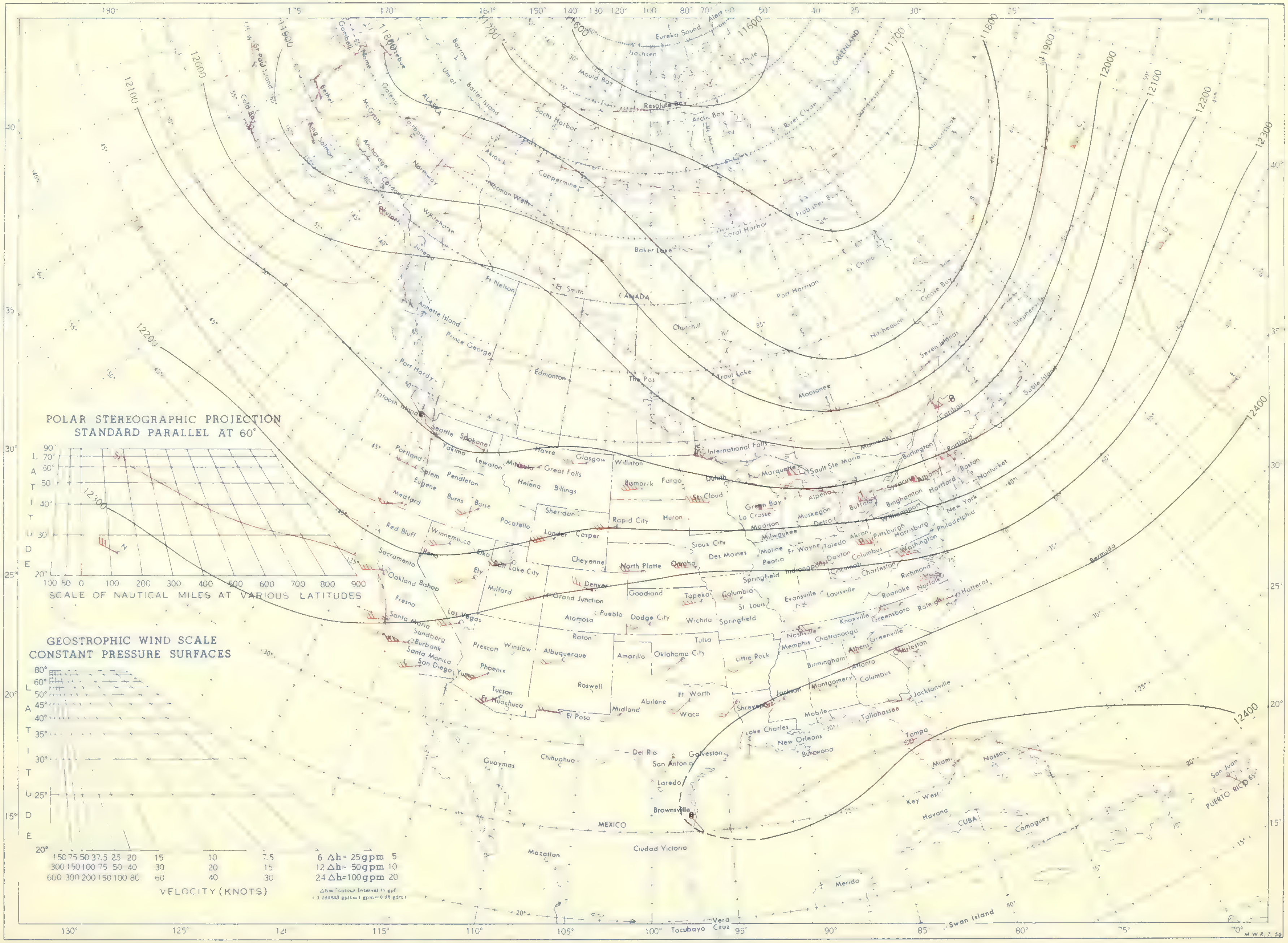
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 0300 GMT, August 1956. Average Height and Temperature, and Resultant Winds.



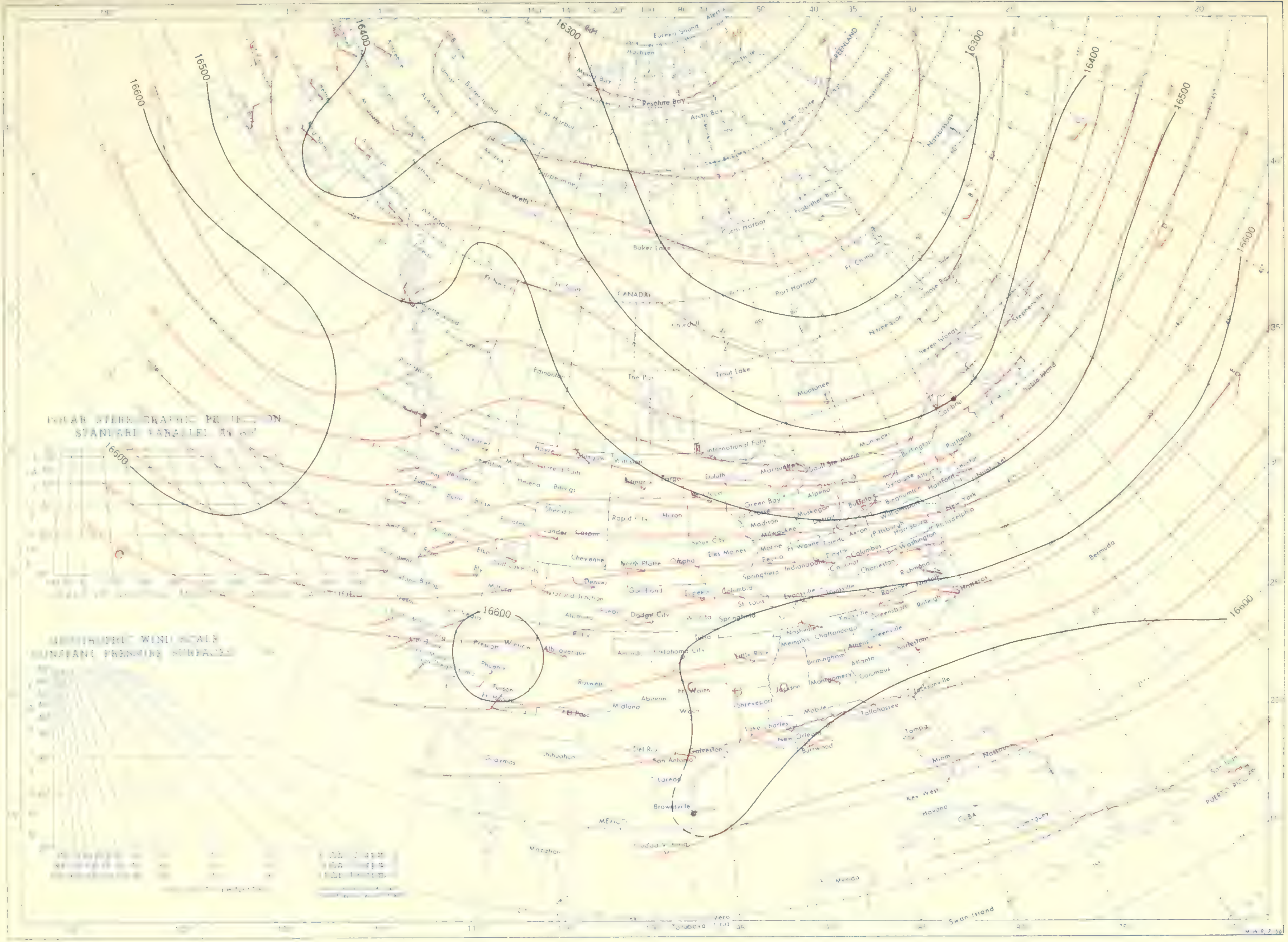
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 0300 GMT, August 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

Chart XVII. 100-mb. Surface, 0300 GMT, August 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

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CLIMATOLOGICAL DATA

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SEPTEMBER 1956

Volume 7 No. 9

ASHEVILLE: 1956

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NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

olume 7 No. 9

SEPTEMBER 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

In the northern Great Plains and east of the
ssissippi River September was unseasonably cool,
ticularly in the Northeast where snowfall and
ezes were among the earliest of record. The early
ezes ended an unusually short growing season
damaged some late maturing crops. Precipitation
lenished and maintained ample soil moisture in
st of the area from the Atlantic coast to the
tern slopes of the Appalachians. Heaviest rain-
l, occurring in the Southeast where most needed,
l during the passage of the month's only hurri-
e to enter the United States.

n most of the remainder of the country warm,
, sunny weather favored maturity of late crops
harvesting operations, but continued the severe
ught in the central and lower Great Plains and
Southwest and increased the need for moisture
the Mississippi Valley.

EMPERATURE.--The month averaged colder than usual
the northern Great Plains and east of the Mis-
sippi River, and warmer elsewhere. Departures
ged from 4° to 6° below normal in the Northeast
4° to 6° above in the Southwest.

old air, renewed from time to time by new intru-
ns from Canada, kept temperatures below seasonal
els most of the month in an area extending east-
d and southeastward from the Great Lakes. In
northern portion of this area temperatures
most stations remained below seasonal levels
oughout the last half of the month and were above
y a few days in the first half. This was also
e in the Southeast, particularly in Florida
re Fort Myers had only two unseasonably warm
s, Miami six, and Jacksonville five. Hartford,
n., reported its lowest average temperature
.3°) on record for September. The month was
coldest September since 1918 at many stations
m Michigan through New York and New England.
verage of 57.7° at Albany, N. Y., was the lowest
re since the low average of 56.3° in 1835. At
mond, Va., this was the coolest September since
) and at Fort Myers, Fla., since 1922. Freez-
occurred in many north-central areas on the
and 11th and many stations from the northern
at Plains to Northern Florida recorded their
est temperatures for so early in the autumn.
the 20th and 21st freezing occurred from the
thern Great Plains to the Atlantic coast and
t of the Mississippi numerous stations as far
h as the Virginias also recorded their lowest
eratures on record for so early in the season.
the 21st Scranton, Pa., recorded its earliest
eze on record, 32°, which ended its shortest
ing season on record (May 25 to September 21).
n the Far Southwest daily temperatures were
ve normal at Tucson, Ariz., and on all but 1
at Los Angeles and San Diego, Calif. At Yuma,
., the lowest maximum temperature during the
h was 102° on the 20th. In Texas maxima equaled
exceeded 90° on all but 1 day at Austin, and
Paso and Waco recorded late season highs of
and 104° on the 16th and 19th respectively.
monthly average (72.3°) for Prescott, Ariz.,
the highest for September since 1865.

PRECIPITATION.--Precipitation exceeded 2 inches from the western slopes of the Appalachians to the Atlantic coast, over 1 inch in the upper Great Lakes region, the Ohio and Mississippi Valleys, parts of the Pacific Northwest, and in some small areas of the Far Northwest. In the remainder of the country precipitation was extremely deficient and many stations in the lower Great Plains and Southwest received no precipitation at all.

The heaviest rains in the East fell during hurricane Flossy's passage from the southeastern tip of Louisiana northeastward to extreme southeastern Virginia from the 24th to the 28th. Flossy was responsible for a belt of rainfall extending from southeastern Louisiana to southern New England, in which totals ranged up to more than 10 inches near the Gulf coast tapering off to an inch or less in southern New England. These heavy rains furnished relief to crops which had been suffering from prolonged dryness.

Precipitation was less than 50 percent of normal in most of the area from the Cascade and Sierra Nevada Mountains to the western slopes of the Appalachians, one of the driest Septembers on record in this area. At Peoria, Ill., the total of only 0.41 inch was the least there for September during the past 100 years, the next smallest total being 0.60 inch in 1867. The month was also the driest of record at Jackson, Miss., 0.04 inch; Wichita, Kans., 0.03; Lake Charles, La., 0.07; Casper, Wyo., 0.07; and Dallas, Tex., a trace. Lansing, Mich., with 0.53 inch reported its driest September since 1864, and at Las Vegas, Nev., this was the sixth consecutive month without rain. Along with hot, dry weather many stations from the lower Mississippi Valley westward reported record sunshine. Little Rock, Ark., and Columbia, Mo., recorded their greatest percentages of possible sunshine (92 and 95 percent) for any month on record. Sunniest Septembers were reported by Los Angeles and San Diego, Calif., and Albuquerque, N. Mex. The deficient precipitation effects were worst in the central and lower Great Plains and Far Southwest where it continued the severe drought of previous months. At the end of September much of this area was still plagued by low water supplies, short feed supplies due to low yields, and dry pastures with little or no prospects for winter forage.

Snowfall during September, while of no economic importance, is mentioned only as a matter of interest in that its occurrence at some northeastern points including Buffalo and Binghamton, N. Y., on the 20th, was the earliest of record, and 2.7 inches at Sault Ste. Marie, Mich., on the same date, was the greatest amount there so early in the season and also the greatest amount in any September.

DESTRUCTIVE STORMS AND UNUSUAL WEATHER PHENOMENA. --Nearly all storms causing damage of $50,000 or more occurred east of the Appalachians. The worst of these, by far, was hurricane Flossy which, during the period September 23-26, was responsible for damage in Louisiana, Mississippi, Alabama, Georgia, Florida, The Carolinas, Virginia, and New Jersey totaling several million dollars. Damage by Flossy, however, was probably more than offset by beneficial rains. Several severe thunderstorms caused damage in the $50,000 to $500,000 range. Losses on this scale occurred in Pennsylvania on the 1st and 6th, also in New Jersey and Massachusetts on the latter date, New York on the 13th, northern New England on the 14th, Illinois and Kentucky on the 15th, and Pennsylvania on the 17th.

Duststorms occurred in eastern Washington on the 20th, in Kansas and Oklahoma on the 21st, and in Boise, Idaho, and vicinity on the 27th. By reducing visibility (zero in some areas) these storms were responsible for several automobile accidents which resulted in two deaths and several injuries.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

SEPTEMBER 1956

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Centre	99	15	Bridgeport 2W	37	21	Gulf Shores 2SSE	19.15	Winfield 2SW	0.21
Arizona	2 Stations	114	10+	Alpine	25	12	Clifton	.75	64 Stations	.00
Arkansas	Paris	104	16	Waldron	35	25	Marvell	5.66	2 Stations	.00
California	2 Stations	117	2+	Boca	18	17	Westwood 3WSW	1.66	241 Stations	.00
Colorado	Holly	105	12	Fraser	3	23	Voria	.89	37 Stations	.00
Connecticut	6 Stations	88	5+	2 Stations	26	21	Putnam	7.28	Hartford Brainard Fld.	2.67
Delaware	4 Stations	94	1+	do	32	21+	Lewes	5.84	Wilmington City Hall	2.49
Florida	Fort Drum	97	11	Secotan	47	26	Pensacola CAA AP	16.53	Daytona Beach	1.82
Georgia	Americus 4ENE	100	16	Blairsville Exp. Sta	34	21	Hartwell 6E	11.53	Rome WB Airport	.81
Idaho	McCammon	99	8	Gray 6NNW *	9	22	Mullan Pass CAA	2.16	6 Stations	.00
Illinois	Quincy	100	13	Marengo	27	20	Grand Tower 2N	4.83	3 Stations	T
Indiana	Wheatfield	99	14	3 Stations	29	20+	North Vernon	5.39	Berne	.15
Iowa	Bedford	100	13	Sibley	23	30	Harlan	5.19	2 Stations	.10
Kansas	Lincoln 2ESE	110	12	5 Stations	33	6+	Horton	2.63	Numerous Stations	.00
Kentucky	2 Stations	98	14+	3 Stations	33	21	Falmouth	6.83	Rochester Lock 3	.03
Louisiana	Plain Dealing	105	20	do	39	26	Golden Meadow	19.69	3 Stations	.00
Maine	Woodland	87	6	Greenville	20	29	West Buxton 2NNW	5.95	Orono	1.27
Maryland	Chestertown	97	1	2 Stations	23	21	Pocomoke City 4SW	5.77	Easton Police Brks.	1.85
Massachusetts	2 Stations	96	5	West Cummington	25	21	West Cummington	8.96	Nantucket WB AP	1.30
Michigan	Paw Paw 2E	93	13	Kenton U. S. Forest	19	21	Sault Ste. Marie WBAP	5.15	Benton Harbor	.21
Minnesota	Canby	97	27	Baudette	18	20	Meadowlands 2SSW	3.34	Leonard 8NE	.17
Mississippi	Utica	101	15	Charleston	35	28	Pearlington 2NNE	17.67	Oakley Exp. Sta.	.00
Missouri	3 Stations	103	12	Farmington 1E	31	[illegible]	Jackson	3.42	3 Stations	.00
Montana	2 Stations	95	20+	Wisdom	15	22+	Essex	3.15	Volborg	.00
Nebraska	do	104	2+	2 Stations	24	6+	Emerald	4.06	Palisade	.00
Nevada	2 Stations	109	2+	Mountain City RS	13	22	Eastgate	1.14	12 Stations	.00
New Hampshire	3 Stations	89	5+	2 Stations	21	21+	Lincoln	7.83	Errol	2.57
New Jersey	Hammonton 2NNE	98	2	Layton 3NW	28	21	Layton 3NW	7.52	Bridgeton 1NE	1.23
New Mexico	3 Stations	104	15+	Gavilan	17	26	Tularosa	1.10	99 Stations	.00
New York	Poughkeepsie	93	6	2 Stations	19	27+	Schuylerville Lock 5	11.56	Plattsburgh	1.83
North Carolina	2 Stations	99	16	3 Stations	28	10+	Catawba Lookout Shoal	10.44	Hiwassee Dam 2	1.61
North Dakota	Jamestown CAA AP	97	27	Munich 4SW	17	14	Carrington	1.52	2 Stations	.12
Ohio	Milford	94	13	Mansfield 6W	24	21	Marietta Lock 1	5.80	do	.25
Oklahoma	2 Stations	108	14+	Hooker	39	30	Smithville	1.80	28 Stations	.00
Oregon	Illahe	100	5	Seneca	12	23+	Astoria	4.22	10 Stations	.00
Pennsylvania	Lebanon 3W	95	1	Madera	22	21	Gifford	9.80	Newburg 3W	1.45
Rhode Island	Greenville	87	5	2 Stations	31	19+	Woonsocket	5.07	Block Island WB AP	1.86
South Carolina	3 Stations	100	2+	4 Stations	41	10+	Georgetown	10.02	Wateree Dam	1.73
South Dakota	Tyndall	103	2	Deerfield 5NW	17	23	Clear Lake	1.77	Dewey	.00
Tennessee	Union City	102	16	Mountain City 2	29	21	Mount Le Conte	8.64	2 Stations	T
Texas	4 Stations	106	15+	Stratford	39	30	Jourdanton	4.50	Numerous Stations	.00
Utah	2 Stations	102	3+	Ibapah	11	22	Silver Lake Brighton	.71	11 Stations	.00
Vermont	Bennington 2NW	89	1	Cornwall	20	21	Plymouth	8.67	St Albans Bay	1.92
Virginia	2 Stations	98	1	Burkes Garden	25	21	Afton Boxwood Gardens	9.75	Rose Hill	1.25
Washington	3 Stations	96	7+	Chewelah 2S	20	22	Clearwater	9.75	Malott	.00
West Virginia	2 Stations	93	1+	2 Stations	22	21	Hopemont	6.86	Brushy Run	1.85
Wisconsin	5 Stations	88	3+	Janesville	18	20+	Gurney	3.31	Lake Geneva	.16
Wyoming	Morrisey	100	20	Bondurant	8	23	Hulett	1.40	18 Stations	.00
Puerto Rico	2 Stations	96	5+	Cidra 3E	60	11+	Rio Blanco 1800 Feet	14.95	Cambalache Exp. Forest	.40

+ And also on a later date or dates.
* One or more days of record missing.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

ble 2

State and station	Elevation (ground)	Pressure: ø Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90° F. or above	Temperature: No. of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max. depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days (sunrise to sunset): Partly cloudy	No. of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F	°F	°F	°F.		°F				°F	%	In.	In.	In.			In.	In.	M p h		M p h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
mingham	610	993.1	1018.3	85	60	72.4	-2.4	95	14	45	26	6	0	58	66	2.26	-0.45	1.95	4	2	0.0	0	7.1	N	30	N	26	10	13	7	4.5	76
ile	211	1008.6	1016.6	85	65	75.0	-2.7	91	3	56	10+	5	0	65	77	11.58	5.80	5.79	8	13	.0	0	8.7	NE	--	---	--	13	8	9	4.6	--
tgomery	198	1009.5	1017.5	86	62	74.1	-3.0	94	15	50	11	9	0	63	73	10.55	7.04	8.76	9	3	.0	0	5.5	NE	40	NE	25	15	7	8	4.4	70
ARIZONA																																
gstaff	6993	------	------	81	43	61.5	4.5	88	17	33	23	0	0	--	-	.02	-1.83	.02	1	3	.0	0	----	--	--	---	--	21	8	1	2.1	--
enix	1114	971.2	1007.8	100	69	84.6	1.9	105	18	63	23	30	0	50	33	.02	-.98	.02	1	2	.0	0	5.0	E	*35	SW	6	27	2	1	1.0	99
scott	5014	848.6	1012.2	89	56	72.3	4.1	96	18	47	21+	15	0	--	--	.07	-2.09	.06	2	2	.0	0	9.3	SSW	56	SW	20	22	7	1	2.1	93
son	2558	923.8	1009.4	100	69	84.3	4.2	105	17+	64	1+	30	0	44	28	.37	-1.11	.37	1	3	.0	0	6.7	FSE	29	W	30	23	5	2	1.9	97
slow	4880	852.7	1010.7	91	55	72.7	4.1	97	19	48	23	18	0	30	24	.01	1.11	.01	1	2	.0	0	7.8	SE	*33	SW	20	23	4	3	1.8	--
a	199	1003.4	1008.3	109	75	91.9	3.6	114	10+	69	1+	30	0	53	32	T	-.64	T	0	0	.0	0	6.6	SSE	22	E	8	28	2	0	.8	96
ARKANSAS																																
t Smith	458	1000.0	1016.6	92	59	75.3	.3	101	16	45	25	21	0	53	52	.06	-3.65	.06	2	2	.0	0	7.8	NE	27	SW	15	26	4	0	1.0	96
tle Rock	257	1004.4	1017.3	88	61	74.1	-.7	96	15	54	21+	13	0	54	56	.28	-2.57	.25	2	2	.0	0	8.8	NNE	35	N	19	23	6	1	1.7	92
arkana	361	------	------	91	63	77.2	.0	98	19	49	25	22	0	-	--	.13	-2.66	.08	2	2	.0	0	----	---	--	---	--	--	--	--	---	--
CALIFORNIA																																
ersfield	489	995.3	1012.9	93	62	77.5	1.9	103	5	53	13	20	0	50	42	T	-.07	T	0	0	.0	0	5.1	WNW	*17	NW	4+	28	1	1	.8	--
hop	4108	874.0	1012.9	91	47	68.9	1.6	98	1+	38	13	19	0	--	--	T	-.19	T	0	0	.0	0	----	---	--	---	--	25	4	1	1.4	--
e Canyon	5280	841.2	1013.9	73	53	63.0	-.5	83	2	45	11+	0	0	--	--	.56	.00	.54	2	0	.0	0	----	---	--	---	--	21	7	2	2.4	--
bank	699	986.5	1012.5	93	60	76.5	5.3	104	9	55	13	22	0	52	49	.00	-.29	.00	0	0	.0	0	4.0	S	*15	S	19	26	4	0	1.4	--
eka (U)	43	1014.5	1016.6	62	50	56.4	.2	76	9	45	28	0	0	-	--	.33	-.34	.23	3	0	.0	0	5.7	--	26	SW	8+	11	9	10	5.1	60
sno	331	1001.0	1012.8	91	58	74.4	.9	100	3	52	12	19	0	51	49	T	-.05	T	0	1	.0	0	6.0	NW	18	NW	19	25	3	2	1.3	98
Angeles (U)	312	------	------	89	64	76.5	5.5	102	9	60	4+	14	0	55	56	.00	-.27	.00	0	0	.0	0	5.2	---	18	W	27+	26	4	0	1.1	95
Angeles	99	1008.5	1012.3	79	61	70.1	3.4	90	10+	55	14	2	0	58	71	.00	-.21	.00	0	0	.0	0	6.5	W	%27	SW	19	22	7	1	2.2	--
Shasta (R)	3544	893.0	1015.9	77	43	60.1	.3	88	1+	34	13+	0	0	--	--	.20	-.56	.20	2	1	.0	0	-- --	---	--	---	--	24	4	2	2.1	--
land	3	1014.6	1014.9	75	55	64.7	1.4	90	22	51	15	1	0	53	74	.32	.23	.32	2	0	.0	0	7.9	WNW	*21	WNW	10+	20	7	3	2.8	--
Bluff	341	1001.0	1013.5	89	59	73.6	-1.4	99	2+	52	14	14	0	43	37	.29	-.04	.22	2	1	.0	0	7.7	SSE	27	NW	21	24	4	2	1.6	93
ramento	17	1012.2	1013.2	86	56	71.0	.7	96	2+	51	8+	8	0	49	52	.84	.78	.84	2	1	.0	0	8.6	SW	28	SW	6	23	4	3	1.7	91
dberg (R)	4517	863.9	1012.5	84	61	72.4	3.0	90	1+	47	20	4	0	-	--	.00	-.23	.00	0	0	0	0	12.5	---	*40	NNW	20	26	3	1	1.3	--
Diego	19	1008.5	1011.7	81	64	72.1	3.4	96	9	58	7	2	0	61	72	T	-.17	T	0	0	.0	0	6.4	NW	17	NW	9+	26	3	1	1.6	87
Francisco(U)	52	------	------	70	55	62.6	1.0	87	22	51	25	0	0	--	--	.33	.20	.25	2	2	.0	0	9.2	---	32	W	11	18	8	4	3.3	75
Francisco	8	1014.2	1015.1	74	54	63.8	1.8	90	22	49	15+	1	0	53	75	.26	.15	.25	2	0	.0	0	10.7	WNW	35	WNW	20	20	7	3	2.7	--
ta Maria	238	1005.1	1014.0	75	51	63.1	1.0	94	28	44	8+	1	0	52	74	T	-.12	T	0	0	.0	0	6.2	WNW	*24	WNW	20	22	7	1	2.4	--
COLORADO																																
mosa	7536	775.8	1018.3	79	35	56.9	2.2	85	14+	29	22+	0	12	--	--	T	-.69	T	0	1	.0	0	----	---	--	---	--	25	4	1	2.0	--
orado Springs	6173	814.1	1015.1	81	47	64.3	2.3	90	12+	38	1+	2	0	31	34	.59	-.48	.59	1	1	.0	0	10.8	SSE	*32	WSW	8+	19	10	1	2.4	--
ver	5292	839.8	1012.7	81	50	65.5	2.8	92	20	41	6	5	0	31	33	.01	1.07	.01	1	3	.0	0	11.4	SSW	30	W	28	19	7	4	3.3	85
nd Junction	4849	860.1	1013.5	86	55	70.6	3.3	92	2+	44	23	10	0	24	19	.01	-1.01	.01	1	3	.0	0	9.6	ESE	40	NW	12	20	8	2	2.3	89
blo	4639	858.5	1014.5	87	51	68.9	4.1	97	12+	43	1+	13	0	33	31	T	-.75	T	0	0	.0	0	8.7	ESE	46	W	21	24	4	2	1.8	95
CONNECTICUT																																
dgeport	7	1018.1	------	71	54	62.7	-2.5	87	5	36	21	0	0	-	--	4.29	.74	1.48	11	3	.0	0	---	---	--	---	--	10	6	14	6.0	--
tford	169	1012.4	1018.3	69	48	58.3	-5.5	88	5	32	21	0	1	52	82	4.25	.81	1.60	15	5	.0	0	9.8	N	29	NW	18	8	6	16	6.5	46
dletown (U)	133	1013.8	------	70	50	60.3	---	87	5	32	21	0	1	--	-	4.51	----	.96	14	4	.0	0	8.6	---	%59	WNW	14	--	--	--	---	--
Haven	6	1017.5	1018.0	70	53	61.4	-2.2	81	1+	35	21	0	0	--	--	5.19	1.73	1.45	13	6	.0	0	7.0	---	25	NW	14	9	7	14	6.5	58
DELAWARE																																
aington	78	1015.0	1018.2	74	55	64.6	-3.4	90	1	37	21	1	0	56	75	2.77	-1.03	.87	11	6	.0	0	9.8	N	-	---	--	7	8	15	6.7	--
DIST. OF COLUMBIA																																
aington (U)	72	------	------	76	59	67.6	-2.3	95	1	41	21	1	0	--	--	3.89	-.47	2.01	11	4	.0	0	6.6	---	34	NW	17	--	--	--	---	--
n. Nat'l. AP	14	1013.8	1018.1	75	58	66.6	-3.0	93	1	41	21	1	0	56	71	3.70	-.42	1.79	12	4	.0	0	9.3	NW	43	W	17	10	7	13	5.7	61
FLORIDA																																
Alachicola (U)	13	1014.1	------	83	70	76.6	-2.3	89	2+	61	27	0	0	--	--	8.51	.86	5.26	8	10	.0	0	8.2	---	37	S	24	12	9	9	4.8	76
ona Beach	31	1015.0	1016.6	86	69	77.5	-1.9	91	17+	52	27	5	0	68	77	1.94	-4.58	1.50	6	4	.0	0	10.5	NE	*33	SSW	25	8	9	13	6.1	--
Myers	15	1014.6	------	88	70	79.3	-2.0	93	29	63	27	13	0	--	--	6.00	-2.59	2.27	17	17	.0	0	8.0	---	*25	SSE	5	1	12	17	7.6	--
csonville	24	1016.0	1017.0	86	67	76.6	-2.6	93	2+	55	27	10	0	67	77	2.89	-4.07	1.29	11	6	.0	0	9.6	NE	35	N	8+	7	9	14	6.3	50
West (U)	9	1013.0	------	89	75	82.0	-.7	95	1+	72	10+	16	0	--	--	11.19	5.14	2.04	21	19	.0	0	7.1	---	23	E	3	1	17	12	7.3	60
land (U)	214	------	------	87	70	78.8	-1.3	94	1	63	27	8	0	--	--	9.91	3.54	3.68	13	12	.0	0	6.9	---	--	---	--	6	12	12	6.4	56
i (U)	8	------	------	85	74	79.1	-1.9	90	25	69	3	1	0	--	--	9.85	3.13	1.93	22	15	.0	0	11.6	---	40	SW	18	2	14	14	7.0	49
i	8	1013.3	1014.5	88	74	80.7	-1.0	92	9	69	27	8	0	73	81	9.59	1.26	3.42	19	12	.0	0	9.7	NE	37	SSW	18	1	12	17	7.5	--
i Beach	9	------	------	85	76	80.3	-1.6	89	2+	70	22	0	0	--	--	7.84	1.99	1.96	21	--	.0	0	----	---	--	---	--	3	15	12	---	--
ndo	106	1012.1	1016.4	87	69	78.3	-2.4	92	1+	56	27	9	0	69	80	6.27	-.88	2.31	12	8	.0	0	7.7	NE	27	SW	25	7	9	14	6.4	--
acola (U)	13	1013.4	------	84	69	76.4	-1.9	89	19+	61	27	0	0	--	--	13.36	7.58	8.51	10	8	.0	0	8.6	---	40	NE	24	--	--	--	---	58
ahassee	64	1013.7	1016.2	85	65	75.0	-3.0	93	15	56	27+	5	0	65	78	4.20	-1.16	4.09	6	7	.0	0	5.8	ENE	--	---	--	10	8	12	5.7	--
a	19	1014.3	1015.8	87	70	78.5	-2.0	91	1+	59	27	5	0	69	77	3.90	-2.55	1.23	14	13	.0	0	8.4	ENE	*23	NNE	6+	6	8	16	6.8	52
Palm Beach	15	1013.6	1014.6	88	74	80.9	-.3	92	25	70	20	3	0	73	80	11.22	2.10	3.47	18	12	.0	0	10.8	ENE	*29	NE	6	1	10	19	8.0	--
EORGIA																																
Atnta	975	977.2	1018.2	82	62	72.0	-2.4	92	14+	51	27	4	0	60	71	6.19	3.23	5.46	6	2	.0	0	10.8	NE	28	NE	8	14	5	11	4.6	67
Atns	798	989.0	1017.9	83	60	71.4	-3.8	96	15	48	11	7	0	59	73	6.56	3.50	5.34	6	1	.0	0	8.7	NE	*37	NE	25	11	8	11	5.2	--
Asta	143	1010.5	1017.1	84	60	72.2	-3.6	96	14+	46	11	6	0	63	78	4.72	1.51	2.52	6	4	.0	0	6.1	NE	*29	ENE	25	10	7	13	5.4	--
Cmbus	385	1003.5	------	85	61	73.0	-3.2	94	15+	48	11+	8	0	--	--	6.59	4.23	3.95	7	3	.0	0	----	---	--	---	--	12	6	12	5.1	--
n	356	1003.6	1017.0	86	62	73.7	-3.8	97	14+	46	11	9	0	60	70	8.02	5.10	4.60	8	4	.0	0	8.5	NNE	40	NW	25	13	6	11	5.0	69
	637	995.0	------	84	56	70.0	-4.2	95	15	42	21	7	0	--	--	.81	-2.17	.57	5	6	.0	0	----	---	--	---	--	14	7	9	4.6	--
Snnah	48	1014.6	1017.0	84	64	73.9	-3.4	94	15+	52	27	6	0	65	78	5.71	-.79	3 24	9	7	.0	0	8.4	NE	43	SW	24	9	11	10	5.2	73
Tasville (U)	283	------	------	87	65	76.1	-1.8	96	15	55	11	14	0	--	--	9.00	4.05	4.97	10	3	.0	0	----	---	--	---	--	--	--	--	---	--
DAHO																																
e	2842	919.7	1014.9	80	49	64.2	1.8	91	9	36	22	1	0	36	38	.02	-.44	.02	1	1	.0	0	8.0	SE	43	NW	27	22	5	3	2.2	94
o Falls W (R)	4399	850.3	1016.6	77	37	57.0	1.0	89	18+	22	22+	0	7	--	--	.28	-.08	.19	4	1	.0	0	8.1	---	a33	SW	30	--	--	--	---	--
o Falls NW (R)	4790	------	------	78	35	56.4	1.0	89	17+	21	22+	0	8	--	--	.50	-.09	.42	3	--	---	--	----	---	a36	SW	27	--	--	--	---	--
ston	1413	963.8	1014.9	78	48	62.8	-.4	88	15+	39	3+	0	0	--	--	.23	-.73	.15	4	0	.0	0	----	---	--	---	--	10	9	11	5.1	--
tello	4444	864.2	1015.8	79	42	60.6	.8	90	19	28	22+	1	3	33	38	.13	-.77	.09	4	4	.0	0	10.3	SW	42	SW	21	21	3	6	2.8	88
LLINOIS																																
(U)	314	1004.7	------	84	60	71.5	-1.5	96	14+	51	20	6	0	--	--	1.66	-1.66	.80	4	3	.0	0	8.3	---	26	SW	15	22	5	3	2.2	86
igo	610	994.6	1017.2	76	54	65.0	-.6	93	13	38	20	2	0	48	58	.46	-2.77	.19	7	4	.0	0	8.3	NW	31	W	16	11	14	5	4.7	71
ie	589	994.6	1016.9	77	50	63.4	-2.0	93	13	30	20	1	1	49	63	.49	-3.60	.34	7	5	.0	0	9.0	SSE	40	SW	13	16	7	7	3.9	79
a	654	995.3	1017.4	78	53	65.5	-.8	95	13	38	20	2	0	49	61	.41	-3.32	.24	7	6	.0	0	10.5	S	35	S	21	15	11	4	3.6	78
igfield	589	994.6	1017.7	80	54	67.1	.2	96	13	38	20	4	0	49	58	.81	-3.09	.46	7	6	.0	0	9.8	SSW	35	S	21	18	9	3	3.0	84
NDIANA																																
ville	383	1000.3	1018.3	81	53	67.2	-3.3	94	12+	42	20+	6	0	53	65	1.62	-1.78	.97	4	3	.0	0	7.6	SSW	38	NW	15	20	5	5	2.8	78
Wayne	801	987.1	1017.8	75	49	62.0	-2.6	92	13	36	20+	1	0	49	66	1.11	-1.96	.48	7	4	.0	0	9.9	S	37	SW	13	10	16	4	4.5	71
napolis	793	988.5	1018.7	77	51	63.8	-3.4	90	13	37	20	1	0	50	65	1.07	-2.60	.75	4	4	.0	0	8.8	SW	35	SW	1	16	9	5	3.6	80
Bend	768	989.5	1017.5	74	49	61.8	-2.7	94	13	36	20	2	0	50	68	.62	-3.09	.38	8	4	.0	0	10.1	NW	*29	SW	13	8	14	8	5.2	--

ootnotes at end of table

Table 2–Continued

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F	°F.	°F.	°F.	°F		°F				°F.	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
IOWA																																
Burlington	694	992.2	1017.9	79	52	65.4	-1.3	95	13	38	20	4	0	48	60	0.56	-3.57	0.23	7	7	0.0	0	9.4	SSW	33	NW	25	14	10	6	3.9	
Des Moines	948	985.8	1017.0	78	52	65.0	-.8	91	27	34	30	4	0	46	57	1.21	-2.43	.92	5	6	.0	0	11.6	S	43	E	3	16	4	10	4.1	
Dubuque	1065	991.5	1017.1	72	47	59.6	-2.7	85	3	28	20	0	1	48	66	1.78	-2.40	1.10	5	4	.0	0	----	---	--	---	--	10	13	7	4.8	
Sioux City	1094	974.6	1015.9	80	50	64.6	.2	96	2	29	30	6	1	43	50	.40	-2.84	.28	3	2	.0	0	13.1	SE	34	N	28	18	5	7	3.6	
Waterloo	870	------	------	73	47	60.1	3.1	87	25	32	30	0	1	--	--	2.46	-2.06	2.05	8	3	.0	0	10.2	---	--	---	--	--	--	--	---	
KANSAS																																
Concordia (U)	1375	965.8	------	87	58	72.7	3.2	103	12+	39	30	14	0	--	39	.08	-2.38	.08	1	2	.0	0	8.4	---	29	SW	21	22	6	2	2.3	
Dodge City	2594	928.2	1014.2	88	59	73.5	3.6	101	11	42	6	17	0	39	32	.02	-1.69	.02	1	1	.0	0	15.8	SSW	47	N	5	22	8	0	1.6	
Goodland	3645	889.6	1014.5	85	49	67.1	2.5	98	12	37	6	11	0	38	39	.05	-1.32	.03	2	1	.0	0	11.6	S	*31	WSW	21	22	4	4	2.3	
Topeka	879	980.7	1016.1	88	54	70.9	1.9	103	12	40	30	14	0	46	46	1.02	-2.42	1.02	1	3	.0	0	12.5	SSW	45	SW	21	20	6	4	2.6	
Wichita	1321	967.2	1014.9	90	59	74.6	2.9	101	11	43	7	17	0	43	36	.03	-3.20	.02	2	4	.0	0	13.9	S	56	N	5	26	4	0	1.7	
KENTUCKY																																
Lexington	979	983.2	1018.9	78	54	65.9	-3.0	93	14	41	20	1	0	54	72	1.77	-1.06	.96	8	5	.0	0	10.0	S	--	---	--	13	7	10	4.6	
Louisville	474	999.0	1018.3	78	54	66.2	-4.0	90	13+	43	20+	2	0	54	69	3.70	1.00	1.47	9	7	.0	0	7.8	SE	33	NW	14	14	10	6	4.1	
LOUISIANA																																
Baton Rouge	64	1013.5	1016.5	89	65	77.1	-.4	94	18	54	27	18	0	65	72	1.97	-2.35	.82	4	5	.0	0	8.5	NE	--	---	--	13	14	3	4.3	
Lake Charles	12	1014.6	1015.8	90	68	78.8	.2	94	18+	59	26+	19	0	65	70	.07	-4.46	.07	1	3	.0	0	6.7	NE	*20	NE	23	20	8	2	2.9	
New Orleans (U)	9	1013.5	------	86	72	79.1	-1.2	91	1+	66	24	8	0	--	--	9.80	3.98	7.65	6	3	.0	0	7.0	---	41	NE	24	12	13	5	4.6	
New Orleans	3	1013.5	1015.7	87	69	77.8	-1.7	92	3+	61	27	6	0	68	77	8.02	2.96	5.28	6	6	.0	0	10.0	ENE	*48	ENE	24	15	9	6	4.3	
Shreveport	252	1007.5	1016.4	92	65	78.3	.0	103	19	54	26	22	0	57	54	.17	-2.05	.29	1	3	.0	0	8.5	ESE	--	---	--	21	8	1	2.3	
MAINE																																
Caribou	624	994.2	1017.5	60	40	50.3	-2.9	80	6	27	27	0	9	44	82	2.57	-.93	.67	14	0	.0	0	8.5	SW	*29	SW	22	6	9	15	6.7	
Portland	61	1014.3	1018.4	66	45	55.1	-3.5	82	5	30	21	0	3	48	68	3.61	.53	1.20	11	3	.0	0	7.2	N	25	S	6	7	9	14	6.5	
MARYLAND																																
Baltimore (U)	14	--- --	------	77	61	68.9	-1.5	92	1+	42	21	3	0	--	--	3.13	-.33	.99	14	--	.0	0	----	---	--	---	--	--	--	--	---	
Baltimore	146	1014.0	1018.8	75	56	65.5	-2.4	92	1	37	21	3	0	57	77	3.42	-.04	1.60	12	3	.0	0	9.1	N	38	W	17	8	11	11	6.1	
Frederick	294	------	-----	74	52	63.0	-5.5	93	1	32	21	1	1	--	--	4.11	.55	1.42	12	1	.0	0	----	---	--	---	--	--	--	--	---	
MASSACHUSETTS																																
Blue Hill Obs. (R)	629	994.8	1018.2	67	51	57.8	-3.4	87	5	35	21	0	0	--	66	5.71	1.94	2.36	14	5	.0	0	13.1	SSW	38	WNW	14	7	12	11	6.2	
Boston	15	1013.5	1018.0	68	54	61.1	-3.2	86	14	41	21	0	0	51	73	5.07	2.08	2.23	13	6	.0	0	11.1	SW	*41	NW	14	7	10	13	6.2	
Nantucket	43	1018.1	1018.4	67	55	60.8	-1.2	76	3+	44	19	0	0	55	81	1.30	-2.07	.58	5	1	.0	0	12.5	ENE	31	NE	27	6	11	13	6.4	
Pittsfield	1153	976.5	------	65	44	54.5	-3.8	83	1+	30	10	0	3	--	--	6.86	2.63	1.67	14	5	.0	0	----	---	--	---	--	--	--	--	---	
MICHIGAN																																
Alpena (U)	587	994.6	------	62	45	53.0	-5.4	78	3	32	20	0	1	--	--	1.90	-1.30	.45	14	3	T	T	9.6	---	29	NW	6+	7	11	12	6.3	
Detroit	619	991.5	1018.0	70	50	60.4	-3.9	86	4	36	20	0	0	51	72	.58	-2.20	.19	7	4	.0	0	9.1	S	28	WNW	17	13	10	7	4.8	
Detroit (Willow Run)	722	989.2	1017.4	71	49	60.2	-4.1	88	4	34	20+	0	0	49	70	.69	-2.33	.27	8	4	.0	0	10.0	SW	*24	NW	30	12	9	9	5.1	
East Lansing (U)	856	------	------	72	48	60.0	-1.8	87	5+	34	20	0	0	--	--	.53	-2.52	.23	7	1	.0	0	3.6	---	14	NW	19	--	--	--	---	
Escanaba (U)	594	994.2	------	60	46	53.3	-4.1	72	3+	31	20+	0	2	--	--	1.98	-1.14	.59	13	2	T	T	9.7	---	31	N	29	7	11	12	6.0	
Flint	761	989.8	1017.7	69	46	57.5	-4.1	85	5	32	21	0	1	48	72	.66	-2.82	.21	8	2	.0	0	9.0	S	*23	S	3+	9	12	9	5.3	
Grand Rapids	681	992.2	1017.4	72	47	59.6	-2.3	87	5+	33	20	0	0	47	68	.68	-2.76	.33	8	5	T	0	9.3	S	31	S	21	10	9	11	5.6	
Marquette (U)	677	989.2	------	61	45	52.9	-4.9	81	3	34	20+	0	0	--	74	1.98	-1.45	.52	15	2	.2	T	7.8	---	32	SW	28	4	12	14	6.9	
Muskegon	627	992.2	1017.6	69	48	58.5	-2.8	83	5	33	20	0	0	48	69	.97	-2.37	.35	9	3	.0	0	----	---	--	---	--	12	9	9	5.0	
Sault Ste. Marie	721	994.2	1017.3	59	43	50.8	-4.4	81	3	31	20	0	2	46	85	5.15	1.66	1.47	18	0	2.7	3	7.8	WNW	23	NW	17	2	13	15	7.3	
MINNESOTA																																
Duluth	1409	974.9	1016.7	61	40	50.7	-4.7	79	12+	27	20	0	5	43	78	1.92	-1.30	.94	11	2	.0	0	12.3	WNW	33	W	16	3	8	19	7.4	
Intern'l Falls	1179	974.6	1016.1	62	36	48.8	-4.5	80	2	20	20	0	10	40	76	1.72	-1.08	.40	13	3	T	0	10.7	W	--	---	--	2	9	19	7.6	
Minneapolis	830	983.4	1016.9	70	47	58.7	-3.5	87	27	34	30	0	0	46	67	.79	-2.06	.47	6	1	.0	0	11.1	NW	36	SW	28	12	10	8	4.9	
Rochester	1017	979.7	1016.8	71	44	57.4	-3.4	89	25	28	30	0	3	46	70	.83	-3.22	.43	8	3	.0	0	9.4	SSE	--	---	--	9	14	7	5.1	
St. Cloud	1034	977.3	1016.3	68	42	54.9	-3.9	89	27	27	30	0	2	45	74	1.88	-1.12	1.35	8	4	.0	0	6.3	WNW	--	---	--	8	13	9	5.4	
MISSISSIPPI																																
Jackson	305	1005.1	1017 0	88	60	74.1	-2.6	94	14+	48	26	12	0	58	62	.04	-2.06	.04	1	2	.0	0	5.9	NE	30	NW	1	18	7	5	3.2	
Meridian	294	1003.5	------	88	59	73.8	-2.1	95	3+	48	26+	13	0	--	--	1.79	-.82	1.66	2	2	.0	0	----	---	--	---	--	19	7	4	3.2	
Vicksburg (U)	234	1007.9	------	87	64	75.4	-1.6	91	14+	53	26	8	0	--	--	.46	-1.31	.36	3	1	.0	0	7.9	---	22	NE	6	16	11	3	2.8	
MISSOURI																																
Columbia	778	988.8	1017.0	86	55	70.7	2.0	99	13	40	7	14	0	48	50	.55	-4.07	.44	4	5	.0	0	9.6	S	28	W	13	24	5	1	1.9	
Kansas City	741	982.4	1016.6	87	61	74.0	3.4	103	12	44	30	14	0	46	40	.22	-3.63	.14	2	3	.0	0	12.4	S	34	SW	21	19	8	3	2.6	
St. Joseph	809	------	------	85	54	69.9	.0	100	13	43	7	13	0	--	--	.78	-3.51	.48	3	5	.0	0	11.0	---	*35	SSW	21	20	6	4	2.6	
St. Louis (U)	465	997.3	------	82	61	71.5	.1	97	12+	46	20	6	0	--	--	1.17	-2.21	.76	5	6	.0	0	11.2	---	37	SW	21	25	4	1	2.2	
St. Louis	552	997.3	1017.6	84	58	70.8	.4	98	12	45	20	8	0	51	54	1.21	-2.33	.83	6	5	.0	0	8.3	S	--	---	--	24	5	1	2.4	
Springfield	1265	970.2	1017.2	85	57	70.9	1.8	97	15	45	7	10	0	51	55	.26	-3.60	.17	4	4	.0	0	13.5	S	40	SW	15	26	4	0	1.6	
MONTANA																																
Billings	3568	892.3	1015.2	76	47	61.3	1.3	89	19	36	6	0	0	40	48	.55	-.77	.32	5	2	.0	0	11.4	SW	46	NW	21	12	11	7	4.9	
Butte	5530	831.4	1017.3	70	34	52.2	2.2	86	19	26	23	0	10	32	--	.52	-.68	.30	5	6	T	0	6.3	S	*41	SSW	8	12	10	8	4.7	
Glasgow (U)	2277	940.4	1015.0	72	44	57.7	.5	89	26	33	5	0	0	38	51	.10	-1.12	.08	4	1	.0	0	10.1	ESE	*32	NW	2	7	12	11	5.7	
Great Falls	3664	888.9	1015.0	72	46	58.8	1.9	88	8	31	5	0	1	33	43	.44	-1.00	.20	6	4	T	0	13.8	SW	56	W	1	9	13	8	5.4	
Havre	2488	926.2	1014.9	72	44	58.1	1.1	88	26	32	5	0	1	40	57	1.19	.04	.39	7	1	.0	0	7.3	---	28	NW	1	8	13	9	5.6	
Helena'	3893	874.7	1015.8	74	41	57.6	2.7	88	19	30	5+	0	2	35	48	.16	-1.00	.08	4	4	.0	0	8.3	W	42	SW	21	10	12	8	5.1	
Kalispell	2965	------	------	70	39	54.8	.3	85	9	28	22	0	3	--	--	.92	-.38	.40	8	2	.0	0	----	---	--	---	--	8	12	10	5.6	
Miles City	2629	922.5	1015.0	76	48	61.8	1.4	93	26	37	5+	1	0	39	--	.26	-.94	.13	5	2	.0	0	10.7	SE	*30	WNW	15	9	12	9	5.3	
Missoula	3200	903.2	1017.2	75	40	57.4	1.6	87	8+	30	23	0	2	36	50	.49	-.58	.27	6	1	.0	0	5.8	WNW	31	W	1	13	8	9	4.9	
NEBRASKA																																
Grand Island	1841	950.2	1015.5	81	51	66.0	-.8	98	2	34	30	7	0	43	48	.91	-1.66	.91	2	5	.0	0	12.8	S	--	---	--	21	5	4	2.7	
Lincoln (U)	1166	------	------	82	56	68.9	.8	102	21	36	30	8	0	--	--	3.59	.67	3.58	3	3	.0	0	11.2	---	41	S	21	17	8	5	3.3	
Norfolk	1544	961.1	1016.1	80	48	64.0	-.5	101	2	27	30	7	1	43	49	.30	-2.47	.20	3	3	.0	0	----	---	--	---	--	17	9	4	3.3	
North Omaha	1323	968.5	------	78	52	64.9	---	96	2	35	30	5	0	--	--	1.90	----	1.76	3	6	.0	0	----	---	--	---	--	--	--	--	---	
North Platte	2779	917.0	1014.8	82	45	63.5	-.3	98	2	27	6	9	2	45	55	.03	-1.72	.03	2	2	.0	0	9.2	SSE	34	S	30	18	10	2	3.1	
Omaha	978	976.6	1016.4	80	53	66.8	-.2	96	2	36	30	6	0	47	54	2.07	-1.09	1.70	5	3	.0	0	10.8	SSE	37	N	5	20	4	6	3.1	
Scottsbluff	3950	880.1	1014.5	82	45	63.2	1.0	95	20	35	24	4	0	38	46	.05	-1.24	.05	2	2	.0	0	8.3	E	*27	NNE	3+	21	5	4	2.8	
Valentine (U)	2587	924.1	------	80	44	62.1	-.5	98	27	28	6	5	3	--	--	.46	-.74	.31	2	3	.0	0	11.1	---	50	NW	12	19	5	6	3.3	
NEVADA																																
Elko	5075	847.3	1016.9	82	35	58.5	.7	92	18	20	22	2	11	30	36	.02	-.37	.02	1	2	.0	0	4.1	WSW	*22	WSW	11	21	5	4	2.2	
Ely	6257	811.7	1016.3	80	39	59.8	2.0	90	17	26	23	1	3	23	28	.65	-.03	.65	2	2	.0	0	11.3	---	34	NW	27	20	5	5	2.5	
Las Vegas	2162	945.5	1009.5	99	68	83.4	2.7	105	1+	57	24	28	0	29	15	.00	-.34	.00	0	0	.0	0	10.3	SW	*33	WSW	20	26	2	2	1.4	
Reno	4397	863.2	1015.8	83	40	61.3	.8	95	1	33	22	5	0	36	46	.35	.13	.34	2	0	.0	0	5.3	WNW	33	S	26	23	5	2	2.1	
Winnemucca	4299	868.9	1015.4	83	38	60.4	.5	93	1	29	14+	4	8	27	32	.42	.08	.38	3	1	.0	0	7.1	W	42	S	10+	21	7	2	2.2	
NEW HAMPSHIRE																																
Concord	339	1007.7	1018.4	67	43	54.9	-3.9	86	5	29	21	0	4	48	80	5.57	2.18	1.63	13	4	.0	0	5.5	NNW	42	SW	14	6	7	17	6.7	
Mt Washington	6262	807.9	------	42	31	36.6	-4.5	59	1+	15	21	0	19	--	88	5.99	-.57	1.14	19	1	5.5	2	24.7	W	%88	W	18	1	10	19	8.0	

See footnotes at end of table

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F	°F	°F		°F				°F.	%	In.	In.	In.			In.	In.	M. p h		M p h.			0–3	4–7	8–10	0–10	%
NEW JERSEY																																
tlantic City(U)	8	1015.7	------	72	61	66.3	-2.0	87	14	43	21	0	0	--	--	3.03	-0.48	1.10	10	3	0.0	0	16.1	---	68	NW	17	7	10	13	6.3	55
ewark	11	1017.1	1018.4	73	55	64.0	-2.8	89	14	39	21	0	0	54	74	2.10	1.79	.82	12	4	.0	0	9.0	NNE	*29	NE	27	6	11	13	6.6	--
renton (U)	56	1011.1	------	73	56	64.3	-2.7	88	1	40	21	0	0	--	--	2.24	-1.51	.74	10	6	.0	0	8.4	---	33	NE	27	7	10	13	6.2	55
NEW MEXICO																																
lbuquerque	5310	850.3	1012.0	89	59	74.1	4.2	95	14	54	26+	15	0	33	25	.02	-1.03	.02	1	1	.0	0	8.0	SE	42	E	5	27	3	0	1.1	95
layton	4969	850.3	1016.6	85	52	68.5	2.6	97	14	41	30	10	0	-	--	T	-1.87	T	0	1	.0	0	----	---	--	---	--	25	5	0	1.3	--
aton	6379	809.7	1015.6	84	44	64.0	3.2	92	13+	38	29	5	0	--	--	.19	-1.82	.19	1	1	.0	0	----	---	--	---	--	24	4	2	1.9	--
oswell	3612	894.3	1013.2	92	55	73.5	2.2	101	15	45	11	23	0	43	38	.16	-1.84	.16	1	2	.0	0	8.7	---	34	W	24	23	6	1	1.7	--
NEW YORK																																
lbany	277	1014.2	1018.0	68	47	57.7	-3.9	88	5	32	21	0	1	50	78	4.71	1.56	2.23	11	4	.0	0	7.4	S	33	NW	14	8	7	15	6.5	61
inghamton	1601	959.0	1018.2	65	47	55.9	-3.9	84	1	31	20+	0	2	19	79	3.01	-.25	1.09	12	6	T	0	8.7	SW	34	NW	23	1	13	16	7.4	50
uffalo	693	989.9	1018.2	69	49	58.9	-3.5	87	5	37	20	0	0		69	3.95	.94	.94	14	6	T	0	11.4	SW	47	NW	30	5	16	9	5.8	68
ew York (U)	10	1017.0	------	71	58	64.5	-2.8	86	5	42	21	0	0	--	--	1.84	-1.83	.48	11	4	.0	0	12.0	---	41	W	18	11	5	14	6.0	61
ew York	19	1016.6	1018.5	73	59	65.8	-2.6	87	14	43	21	0	0	54	69	2.11	-1.44	.52	13	5	.0	0	12.5	SW	48	NE	28	7	9	14	6.3	--
ochester	543	998.5	1017.8	69	48	58.0	-4.0	88	5	36	20+	0	0	50	78	3.58	.92	.86	13	8	T	0	10.7	S	34	W	14	7	16	7	5.6	59
chenectady	217	------	------	68	49	58.9	-2.9	86	1+	36	21	0	0	--	--	3.77	.51	1.02	13	5	.0	0	----	---	--	---	--	--	--	--	4.4	--
yracuse	424	996.5	1018.6	69	49	58.8	-4.6	88	1+	36	28	0	0	50	76	4.27	1.36	1.51	13	7	.0	0	7.5	WSW	37	NW	1	8	11	11	5.8	58
NORTH CAROLINA																																
sheville (U)	2203	------	------	76	54	64.9	-3.0	89	16	42	21	0	0	-	--	7.31	4.59	3.27	8	4	.0	0	6.0	---	23	NE	25	10	12	8	5.1	65
harlotte	725	990.4	1018.3	81	59	70.0	-2.6	96	16	48	10+	6	0	59	74	5.06	1.41	3.15	6	2	.0	0	8.3	NNE	47	N	26	12	5	13	5.5	58
reensboro	891	987.2	1018.9	78	57	67.5	-3.2	93	14+	43	21	6	0	57	75	7.19	3.53	3.84	12	7	.0	0	8.2	NE	38	NNE	26	13	5	12	5.2	65
atteras (R)	4	1016.7	1017.3	78	68	73.0	-2.3	87	4	60	28+	0	0	66	79	4.12	-1.97	2.53	9	3	.0	0	13.8	S	52	NE	26	13	6	11	5.2	--
aleigh	433	1004.5	1018.1	80	59	69.1	-3.5	97	16	44	10	6	0	59	76	3.74	-.75	2.31	9	9	.0	0	9.1	NNE	*30	NNE	27	9	9	12	5.5	64
ilmington	30	1016.2	------	83	62	72.4	-3.0	95	15+	48	10	6	0	--	--	2.31	-3.64	1.55	5	5	.0	0	10.8	--	34	NE	26	10	11	9	4.9	71
inston-Salem	967	983.5	1018.6	79	58	68.3	-2.6	94	1+	43	21	6	0	56	71	8.43	4.94	5.69	10	3	.0	0	8.6	NNE	*35	NNE	26	12	6	12	5.1	--
NORTH DAKOTA																																
ismarck	1650	955.6	1016.1	70	41	55.5	-3.0	88	26	25	29	0	3	41	64	.55	-.88	.22	5	1	.0	0	9.8	E	38	NW	22	7	11	12	5.7	75
evils Lake (U)	1471	962.4	------	64	41	52.5	-3.8	87	26	27	14	0	4	--	--	.69	-1.38	.41	7	1	T	T	7.4	---	25	N	28	7	9	14	6.1	60
argo	895	981.7	1016.5	68	43	55.7	-3.2	92	27	27	14	1	3	42	66	.83	-.89	.61	8	1	T	0	13.9	S	42	NW	28	6	11	13	6.1	51
illiston (U)	1877	947.5	1015.1	70	43	56.3	-.9	89	26	33	4+	0	0	39	54	.58	-.63	.43	7	0	T	0	6.8	---	31	NW	15	6	7	17	6.7	73
OHIO																																
kron	1210	981.1	1019.3	69	48	58.7	-5.9	85	5	32	21	0	1	50	77	2.61	-1.02	1.13	10	7	.0	0	9.9	S	--	---	-	8	11	11	5.9	--
incinnati Obs.	761	-----	------	77	54	65.2	-3.7	90	5+	38	21	2	0	--	--	1.92	-.96	1.24	9	3	.0	0	3.9	-	14	S	16	--	--	--	---	70
incinnati	869	987.1	1018.5	76	53	64.5	-2.8	88	4+	39	20	0	0	52	68	2.29	-.68	1.63	6	6	.0	0	8.3	SSW	*21	SW	13+	14	5	11	4.9	--
leveland (U)	663	------	------	71	54	62.2	-4.1	87	5	40	21	0	0	--	--	2.25	-.98	----	--	--	----	--	----	---	--	---	--	--	--	--	---	--
leveland	787	990.2	1018.1	71	51	61.2	-4.3	89	5	35	21	0	0	51	70	1.56	-1.57	.62	8	4	.0	0	11.1	S	30	NW	20	8	10	12	5.6	56
olumbus (U)	724	------	------	75	53	64.1	-3.7	89	5	40	20+	0	0	--	--	1.44	-1.14	.81	10	8	.0	0	----	---	--	---	--	--	--	--	---	--
olumbus	815	988.9	1018.8	76	50	63.4	-3.1	90	5	33	21	1	0	52	71	1.37	-1.54	.65	10	7	.0	0	7.2	S	31	SW	1+	9	10	11	5.5	78
ayton	1002	982.3	1018.6	75	52	63.4	-3.5	90	13	37	20	1	0	50	64	1.15	-1.65	.70	6	4	.0	0	9.7	SSW	38	SW	17	13	8	9	4.7	81
andusky (U)	603	995.6	------	72	53	62.5	-4.0	88	13	34	21	0	0	--	--	1.37	-1.89	.49	10	5	.0	0	6.3	---	22	NW	17	12	11	7	4.6	60
oledo	676	992.8	1018.1	72	48	59.8	---	88	13	32	21	0	1	51	75	.76	----	.31	8	7	.0	0	9.8	SSW	25	W	5+	14	10	6	4.6	76
oungstown	1178	976.5	1019.1	70	47	58.5	-6.2	85	1+	33	21	0	0	50	78	1.90	-1.68	.45	13	3	.0	0	9.9	SSW	*31	SW	13	7	11	12	6.1	--
OKLAHOMA																																
lahoma City	1280	972.6	1015.4	91	62	76.6	2.6	100	15+	49	8	19	0	49	41	.20	-3.23	.18	2	2	.0	0	14.4	SSE	42	SW	13	25	5	0	1.4	93
lsa	672	991.5	1015.7	93	63	78.0	4.2	103	15+	50	8	22	0	48	39	.87	-3.38	.72	4	3	.0	0	11.0	S	48	E	17	24	6	0	1.6	92
OREGON																																
toria	[illegible]	1016.9	1017.6	67	48	57.2	-3.1	85	5	39	3+	0	0	52	82	3.76	.72	1.23	10	1	.0	0	6.2	SE	*21	SW	6+	7	9	14	6.6	--
rns (U)	4140	874.4	1015.9	78	40	58.7	.4	89	6	29	29	0	3	29	36	T	-.43	T	0	1	.0	0	----	---	--	---	--	23	5	2	2.1	--
gene	361	1003.4	1016.9	77	46	61.2	.3	91	5	36	23	1	0	--	--	.74	-.86	.47	3	0	.0	0	7.3	---	*25	WSW	6	13	10	7	4.2	--
acham	4050	------	------	71	44	57.4	1.7	84	18	35	22	0	0	--	--	.25	-1.21	.09	3	1	.0	0	----	---	--	---	--	9	11	10	5.0	--
dford	1312	968.5	1002.0	82	46	64.0	-.4	95	5	39	21	4	0	45	57	.64	-.01	.64	1	1	.0	0	4.3	WNW	*24	NW	7	20	6	4	3.1	--
ndleton	1492	962.4	1015.8	79	52	65.3	.7	88	15	41	22	0	0	40	42	T	-.71	T	0	0	.0	0	11.0	SE	*46	W	20	15	11	4	3.9	--
rtland	21	1011.5	1017.2	72	50	60.8	-1.5	85	6	42	27	0	0	52	75	1.12	-.72	.39	5	0	.0	0	6.6	WNW	22	NW	20+	8	10	12	6.1	50
seburg	505	997.6	1016.3	79	46	62.4	.6	94	5	37	22	1	0	--	--	.46	-.65	.26	4	0	.0	0	4.9	---	21	N	2	18	6	6	3.5	79
lem	195	1009.5	1016.9	77	47	61.7	-.7	90	5	37	2	1	0	49	69	.87	-.62	.56	5	1	.0	0	6.7	S	*21	S	20	11	10	9	5.1	--
xton Summit(R)	3836	------	------	70	50	60.2	.4	85	6	39	21	0	0	--	--	.69	-.48	.57	4	1	.0	0	----	---	--	---	--	21	5	4	2.8	--
PENNSYLVANIA																																
lentown	376	1004.9	1019.1	71	51	60.9	-3.8	85	2	34	21	0	0	53	79	3.27	-.20	1.03	12	5	.0	0	8.2	WSW	--	--	--	4	10	16	6.9	--
rrisburg	335	1005.1	1018.8	72	53	62.5	-3.6	87	1	35	21	0	0	53	73	3.24	.61	.99	12	7	.0	0	6.2	W	27	NW	20	5	7	18	7.4	56
iladelphia (U)	26	------	- ----	74	60	66.9	-2.4	90	1	46	21	1	0	--	--	2.75	-.68	----	9	--	.0	0	----	---	--	---	--	--	--	--	---	--
iladelphia	10	1013.6	1018.0	74	56	65.2	-2.5	91	1	38	21	1	0	54	71	3 75	.29	1.60	10	6	.0	0	9.4	SW	47	NE	27	2	13	15	7.2	54
ttsburgh (U)	749	------	------	73	54	63.1	-4.8	89	1	39	21	0	0	--	--	2.91	.14	.58	11	--	.0	--	----	---	--	---	--	--	--	--	---	59
ttsburgh	1151	988.4	1019.1	70	50	60.4	-4.5	86	1	34	21	0	0	51	74	1.93	-1.04	.49	10	7	.0	0	9.7	WSW	*23	SW	14	3	15	12	6.7	74
ading (U)	266	1006.3	1018.3	73	55	63.7	-3.4	86	4+	38	21	0	0	--	-	3.72	.44	1.21	12	6	.0	0	8.2	---	58	NW	17	5	8	17	7.0	47
ranton	940	984.7	1019.2	68	48	58.0	-5.2	85	1	32	21	0	1	51	76	2.54	-.68	.81	12	6	T	0	7.0	SW	31	S	19	2	15	13	6.9	43
ippingport (U)	736	------	------	71	49	59.9	---	86	5	32	21	0	1	--	--	2.59	----	.81	12	4	.0	0	1.8	---	%20	SW	14+	--	--	--	---	--
lliamsport	527	999.8	------	71	50	60.5	-4.1	86	23	33	21	0	0	--	--	2.60	-.73	.50	12	--	.0	0	----	--	--	---	--	2	13	15	7.2	--
RHODE ISLAND																																
ock Island	110	1014.0	1018.4	68	55	61.9	-1.6	79	3	43	21	0	0	--	--	1.86	-1.12	.65	9	1	.0	0	-	---	--	---	--	--	--	--	6.2	--
ovidence	55	1012.5	1018.4	69	51	60.1	-2.6	84	5	35	21	0	0	52	76	3.10	-.09	1.01	12	6	.0	0	10.1	SW	*35	SW	14	9	9	12	6.0	57
SOUTH CAROLINA																																
arleston (U)	9	-----	------	81	68	74.7	-3.0	93	15	56	27	1	0	--	--	5.56	25	2.42	9	7	.0	0	9.6	---	35	E	25	13	6	11	5.0	71
arleston	41	1015.4	1017.3	82	62	71.9	-4.4	94	15	49	11	3	0	65	84	4.81	-.66	3.89	7	5	.0	0	9.8	NNE	--	---	--	10	12	8	5.3	--
lumbia	217	1008.9	1017.1	84	61	72.5	-3.4	97	14+	45	10	7	0	62	76	7.94	3.52	3.30	6	6	.0	0	7.4	NE	25	NNW	26	10	11	9	5.2	71
orence	146	1012.0	------	83	61	72.2	-3.1	97	16	48	10	7	0	--	-	4.39	.11	2.61	9	6	.0	0	----	---	--	---	--	12	9	9	5.0	--
eenville	1018	980.8	1017.8	80	59	69.4	-3.7	93	1+	48	25	6	0	57	71	8.14	4.55	5.79	8	3	.0	0	10.4	NE	36	NE	25	10	6	14	5.8	61
artanburg	801	------	------	80	60	70.1	-3.1	95	16	49	10+	6	0	--	--	6.80	3.12	5.50	6	1	.0	0	7.9	---	*29	NNE	25+	--	--	--	---	--
SOUTH DAKOTA																																
ron	1282	968.5	1015.7	75	45	59.9	-2.9	98	27	32	30	2	1	44	61	1.06	-.67	78	6	3	.0	0	9.9	SSE	35	S	30	15	5	10	4.5	74
pid City	3165	902.1	1015.0	78	48	63.0	2.5	93	10	37	6	4	0	36	41	.30	-.88	.15	5	2	.0	0	9.9	NNW	37	NW	10+	16	10	4	4.0	76
oux Falls	1420	964.8	1016.0	77	45	61.2	-1.2	99	2	29	30	4	2	41	52	.29	-2.64	.26	3	1	.0	0	10.0	SSE	*29	NNW	22+	16	8	6	4.0	--
TENNESSEE																																
istol	1519	965.0	------	77	54	65.6	-2.9	89	1+	39	21	0	0	--	--	2.44	-.35	.87	10	5	.0	0	----	---	--	---	--	11	10	9	5.2	--
attanooga	670	990.8	1018.1	82	57	69.7	-2.8	94	15	44	21	4	0	57	71	1.43	-1.26	.90	5	2	.0	0	6.4	NNE	27	NE	25	12	9	9	4.5	71
oxville	950	983.7	1018.8	80	59	69.1	-3.0	90	15+	45	21	2	0	57	69	1.66	-.87	.76	5	3	.0	0	7.6	NE	30	NE	25	13	7	10	4.8	69
mphis (U)	271	------	------	84	63	73.4	-1.4	91	15	54	25	2	0	--	--	.67	-1.83	.65	2	--	.0	0	----	---	--	---	--	--	--	--	---	--
mphis	263	1003.3	1017.9	86	59	72.9	-1.4	95	15	47	28	10	0	54	57	.57	-1.98	.25	2	3	.0	0	9.8	NNE	28	NE	25	19	9	2	2.7	87
shville	577	998.6	1018.5	84	59	71.4	-1.8	96	15	44	21	9	0	54	61	.28	-2.46	.21	3	2	.0	0	8.5	S	26	NW	1	16	6	8	3.6	86
k Ridge (R)	905	986.1	------	81	58	69.5	-1.8	94	16	44	21	5	0	--	--	2.91	.36	1.59	4	4	.0	0	4.8	---	28	---	25	13	7	10	4.6	-

e footnotes at end of table.

CLIMATOLOGICAL DATA

Table 2–Continued

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)
												No. of days							No. of days		Snow, Sleet				Fastest mile						
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	
	Ft.	Mb	Mb.	°F.	°F.	°F.	°F	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10
TEXAS																															
Abilene	1759	954.6	1014.4	92	66	79.3	3.8	99	19	53	27	23	0	49	38	T	-2.60	T	0	4	0.0	0	9.8	SSE	42	S	29	27	2	1	1.3
Amarillo	3590	891.0	1013.6	89	57	73.0	3.7	99	13	45	30	16	0	45	41	0.48	-1.80	0.43	2	3	.0	0	16.9	S	40	SW	21	26	3	1	1.1
Austin	615	994.2	1015.6	95	69	81.7	2.4	103	20	58	27	29	0	59	51	.09	-3.97	.09	1	1	.0	0	8.4	S	31	NE	6	20	7	3	3.1
Brownsville	16	1011.9	1014.4	88	71	79.4	-2.0	93	3	64	28	10	0	71	82	3.25	-3.02	1.45	10	4	.0	0	11.0	ESE	29	E	10	12	11	7	4.9
Corpus Christi	41	1013.9	1014.9	91	71	81.1	.4	96	25	60	28	22	0	69	71	1.00	-3.70	.75	6	6	.0	0	9.0	E	26	SE	13	19	5	6	4.0
Dallas	487	997.6	1015.8	94	69	81.6	2.7	101	19	57	9	26	0	55	44	T	-2.71	T	0	0	.0	0	9.6	SSE	27	NW	19	25	4	1	1.8
Del Rio	1091	981.0	1014.5	93	68	80.8	1.0	100	20	59	28	28	0	57	48	1.07	-1.44	1.01	3	2	.0	0	9.3	---	32	E	25	17	5	8	3.5
El Paso	3920	886.9	1012.3	92	63	77.4	2.5	101	16	57	11	23	0	40	29	.43	-.70	.43	1	1	.0	0	8.5	SSE	34	E	6	25	3	2	1.5
Fort Worth	544	995.3	1015.7	94	68	80.9	2.7	102	19	55	9	24	0	52	41	.23	-2.46	.23	2	2	.0	0	11.4	S	*35	N	5	23	6	1	1.8
Galveston (U)	7	------	------	86	75	80.8	.5	91	6+	68	8	3	0	--	--	1.84	-3.60	.67	4	--	.0	0	11.3	---	32	N	30	--	--	--	---
Galveston	5	1013.5	1015.9	87	75	81.1	.7	92	6+	67	[illegible]	4	0	68	68	.57	-5.25	.42	3	4	.0	0	11.6	ESE	--	---	--	19	10	1	2.8
Houston (U)	41	1010.5	------	91	71	81.4	1.4	97	19	62	26	21	0	--	--	1.08	-2.57	.55	4	5	.0	0	8.4	---	32	N	6	18	7	5	3.4
Houston	50	1013.2	1015.6	91	69	80.2	1.5	101	19	58	26	21	0	65	67	1.88	-2.47	1.14	5	6	.0	0	9.6	ENE	--	---	--	18	7	5	3.6
Laredo	500	999.0	1014.0	96	72	84.1	.6	101	20	65	28	29	0	65	58	1.25	-1.91	1.23	3	6	.0	0	10.3	SE	*30	E	26	15	11	4	3.8
Lubbock	3243	904.8	1014.0	90	57	73.7	2.5	99	15	47	9	21	0	49	44	.03	-2.82	.03	1	3	.0	0	12.6	S	*38	SSW	21	27	2	1	1.4
Midland	2854	917.0	1014.3	90	63	76.6	1.3	98	15	52	10	20	0	49	42	.17	-1.97	.17	1	1	.0	0	7.9	S	*23	SSE	21	24	5	1	1.7
Port Arthur	16	1014.6	1016.0	90	67	78.7	.8	96	28	56	26	17	0	66	71	.64	-4.24	.32	4	7	.0	0	10.4	NE	34	NE	23	19	9	2	3.2
San Angelo	1903	948.9	1014.8	91	65	78.0	1.5	98	19+	52	9	22	0	51	43	.48	-1.82	.48	1	4	.0	0	8.7	SSW	*35	WNW	26	24	4	2	1.8
San Antonio	792	990.9	1015.3	92	68	80.0	.6	98	20	59	27	24	0	59	54	.62	-2.75	.40	3	4	.0	0	6.5	SSE	27	SE	4	17	9	4	3.7
Victoria	110	1010.5	1015.1	93	70	81.6	.8	99	20	63	29	25	0	66	64	1.92	-1.77	.48	8	6	.0	0	8.1	---	%57	SSE	2	17	9	4	3.8
Waco	500	994.9	1015.4	94	68	81.3	2.4	104	19	55	27	27	0	55	44	.00	-2.97	.00	0	1	.0	0	11.5	S	--	---	--	21	6	3	2.6
Wichita Falls	1020	978.7	1014.8	94	66	80.2	3.8	102	16	56	[illegible]	23	0	49	36	T	-2.72	T	0	3	.0	0	11.2	S	*28	[illegible]	17	27	3	0	1.1
UTAH																															
Milford	5028	845.6	1013.9	87	46	66.3	3.7	95	2	27	23	12	3	—	--	T	-.40	T	0	2	.0	0	----	---	--	---	—	25	3	2	1.8
Salt Lake City	4220	868.3	1014.4	85	49	67.0	2.8	97	19	33	23	7	0	33	33	.14	-.60	.08	4	4	.0	0	9.2	SE	27	S	12	21	5	4	2.2
VERMONT																															
Burlington	331	1002.9	1017.6	66	46	55.9	-4.0	85	1+	33	27+	0	0	47	74	3.91	.77	1.04	17	6	T	T	7.4	S	30	S	19	6	9	15	6.7
VIRGINIA																															
Lynchburg	947	984.5	------	77	56	66.3	-2.5	93	1	37	21	3	0	--	--	3.67	.57	2.11	11	5	.0	0	8.0	---	40	N	26+	9	8	13	5.6
Norfolk	26	1017.1	1018.3	79	63	70.8	-1.2	94	16	50	22	4	0	61	74	3.70	-.16	2.61	8	2	.0	0	9.9	SSW	56	NE	26	9	10	11	5.8
Richmond	162	1012.6	1018.7	78	58	67.9	-2.4	95	1	39	21	7	0	59	77	2.96	-.69	1.26	12	6	.0	0	8.1	S	33	NE	26	10	7	13	5.8
Roanoke	1174	977.2	1019.1	77	56	66.8	-2.3	91	1	36	21	4	0	55	72	5.74	2.35	3.17	15	6	.0	0	6.9	NE	--	---	--	8	7	15	6.4
WASHINGTON																															
Olympia	190	1009.8	1017.3	69	45	57.0	-1.1	87	6	33	22	0	0	47	75	2.30	.50	.60	9	1	.0	0	6.4	SW	*28	SSW	29	4	12	14	6.8
Seattle (U)	14	------	------	67	53	60.2	-.8	83	6	47	22	0	0	--	--	2.22	.66	.83	10	0	.0	0	8.1	---	38	S	29	5	6	19	7.1
Seattle	14	1016.3	1017.4	--	--	----	---	--	--	--	--	--	--	50	74	----	----	----	--	--	---	--	6.7	SSE	--	---	--	--	--	--	---
Seattle-Tacoma	376	1003.7	1018.1	67	49	57.9	-.8	86	6	40	22	0	0	50	78	2.42	.77	.90	10	0	.0	0	10.7	N	*32	SW	20	2	14	14	7.2
Spokane	2357	946.8	1015.6	74	47	60.7	1.5	85	9	36	22	0	0	39	47	.09	-.84	.06	3	0	.0	0	8.1	SW	29	SW	20	12	9	9	5.1
Stampede Pass (R)	3958	881.1	1019.0	59	43	51.1	-.1	75	18	35	22+	0	0	--	--	5.13	1.09	1.66	12	1	.0	0	----	---	--	---	--	9	6	15	6.2
Tatoosh	101	1013.9	1016.9	60	50	54.6	.1	66	8	47	3+	0	0	51	89	5.09	1.45	1.11	13	0	.0	0	11.6	ENE	52	S	29	5	8	17	7.1
Walla Walla (U)	949	979.7	1015.2	79	54	66.2	.9	89	15	43	22	0	0	—	--	.19	-.67	.18	3	0	.0	0	5.1	---	51	W	20	13	10	7	4.4
Yakima	1061	976.6	1015.5	78	44	61.1	.0	88	15+	33	22	0	0	42	53	.54	.15	.54	2	2	.0	0	7.2	WNW	*38	WNW	20	11	12	7	4.6
WEST VIRGINIA																															
Charleston	950	983.5	1018.8	75	53	64.1	-4.5	88	1	34	21	0	0	55	76	4.39	1.45	2.40	9	6	.0	0	5.6	S	*35	SSW	1	6	9	15	6.4
Elkins	1970	------	------	71	48	59.4	-3.6	85	1	29	21	0	2	--	--	2.82	-.46	.68	15	7	.0	0	4.9	NNW	*23	WSW	14	3	13	14	7.3
Huntington (U)	565	------	------	78	55	66.2	-4.3	91	5	36	21	2	0	--	--	4.14	1.26	2.00	8	--	.0	0	----	---	--	---	--	--	--	--	---
Parkersburg (U)	615	------	------	75	53	64.2	-4.2	88	1+	33	21	0	0	--	--	3.95	.96	1.39	11	8	.0	0	5.2	---	29	NW	23	12	8	10	5.1
WISCONSIN																															
Green Bay	689	994.2	1017.0	66	44	55.2	-5.0	85	3	27	20	0	3	47	78	1.65	-1.22	.79	7	2	.0	0	9.4	NW	33	NW	13	10	13	7	5.4
La Crosse	652	991.9	1016.6	71	48	59.5	-2.8	82	2+	34	20+	0	0	48	67	1.56	-2.26	1.23	7	1	.0	0	7.1	S	*20	W	22+	6	17	7	5.4
Madison	857	982.1	1017.2	73	47	59.8	-2.3	85	3	28	20	0	2	47	69	1.42	-2.57	1.15	7	3	.0	0	8.8	NW	33	W	23	8	14	8	5.1
Milwaukee	672	992.2	1017.3	70	48	59.3	-3.3	84	3+	30	20	0	1	49	72	.30	-3.03	.21	5	0	.0	0	12.2	WNW	34	SW	13+	10	11	9	5.0
WYOMING																															
Casper	5322	838.8	1013.7	78	44	61.0	2.9	89	20	30	23	0	1	26	33	.07	-1.15	.03	3	4	.0	0	11.5	WSW	*44	WSW	2	16	9	5	3.7
Cheyenne	6131	814.4	1014.7	78	45	61.1	3.7	88	2	35	23	0	0	29	35	.14	-1.06	.11	4	5	.0	0	12.3	W	47	W	28	17	9	4	3.5
Lander	5563	837.1	1014.8	78	45	61.2	3.7	88	20	33	29	0	0	31	36	.10	-1.13	.08	2	3	.0	0	7.2	---	36	SW	11	16	12	2	3.3
Sheridan	3942	885.2	1015.2	77	43	60.1	2.2	89	19+	34	6	0	0	36	47	.72	-.73	.32	6	5	.0	0	7.0	S	43	NW	21	12	13	5	4.5
PACIFIC AREA																															
Canton Island	9	1009.5	1009.9	88	78	82.8	-1.6	91	2	75	3+	4	0	72	74	.67	-.02	.41	5	0	.0	0	16.7	E	*30	E	7+	9	11	10	5.9
Hilo	31	1013.5	1015.7	83	66	74.6	-.7	85	5+	64	2+	0	0	67	79	4.03	-6.39	.88	23	0	.0	0	8.2	WSW	*21	E	28	4	10	16	7.0
Honolulu	7	1015.2	1015.6	85	74	79.5	.3	87	23+	69	13	0	0	66	65	.14	-1.00	.13	2	1	.0	0	11.4	ENE	32	E	6	8	13	9	5.7
Koror (R)	94	1006.1	1009.8	87	75	81.0	-.1	90	10	72	22	1	0	76	86	14.00	.69	1.91	28	4	.0	0	----	---	--	---	--	0	3	27	9.6
Lihue	115	1010.8	1016.2	85	72	78.6	.8	86	7+	68	13+	0	0	69	75	1.78	-.42	.71	16	3	.0	0	10.7	NE	23	NE	4	5	14	11	6.1
Majuro	10	1008.8	1009.1	85	77	80.9	---	87	4+	73	16	0	0	76	84	15.45	----	5.14	22	3	.0	0	----	---	--	---	--	0	11	19	8.1
Ponape (R)	118	1004.4	1009.8	88	71	79.5	-.6	91	24	70	7+	6	0	75	89	13.29	-2.67	2.09	25	4	.0	0	----	---	--	---	—	0	6	24	8.9
Truk (Moen Is.)	8	1009.8	1010.2	86	75	80.7	.0	88	3+	73	15	0	0	76	86	15.75	3.14	3.54	30	4	.0	0	----	---	--	---	--	0	1	29	9.1
Wake Island	11	1012.9	1013.2	88	79	83.4	1.2	90	14+	75	5+	2	0	74	75	2.05	-3.43	.70	17	2	.0	0	13.5	E	*22	ENE	1+	8	13	9	5.8
Yap (R)	53	1007.5	1009.1	88	75	81.3	-.5	93	14	72	30	9	0	76	85	12.13	-2.03	2.09	25	1	.0	0	----	---	--	---	—	0	0	30	10.0
WEST INDIES																															
San Juan, P.R. (U)	47	------	------	85	76	80.5	.0	89	8	73	5+	0	0	--	--	4.43	-1.57	1.37	19	6	.0	0	----	---	--	---	--	--	--	--	---
San Juan, P.R.	15	1011.4	1013.9	88	73	80.3	---	90	7+	70	4+	3	0	72	80	5.74	----	1.34	20	6	.0	0	7.5	ENE	24	NE	17	4	19	7	5.8
ALASKA																															
Anchorage	92	1006.8	1011.9	54	38	46.1	-1.9	68	12	20	28	0	7	35	62	2.00	-.71	.48	12	0	T	0	3.8	N	*33	S	12	7	4	19	6.8
Annette	110	1012.2	1016.1	60	47	53.5	.4	73	10+	37	23	5	0	47	80	5.75	-3.85	1.81	16	1	.0	0	8.3	NNW	*28	S	30	4	9	17	7.2
Barrow	22	1011.5	1012.0	36	28	32.2	1.6	53	9	20	30	0	23	29	90	.48	-.07	.09	10	0	3.3	2	12.2	E	31	E	18+	1	3	26	9.1
Bethel	10	1007.8	1009.2	51	38	44.4	-.9	64	6	25	21	0	10	40	86	3.13	.12	.85	14	0	T	0	10.0	NE	*38	SSW	13	3	7	20	7.8
Cold Bay	90	1006.4	1010.3	51	44	47.5	.0	59	13	30	22	0	1	44	88	2.31	-1.26	.88	18	0	T	0	20.8	SSE	*58	S	12+	0	2	28	9.3
Cordova	40	1010.5	1012.0	55	36	45.7	-2.3	71	7	20	24	1	10	42	87	8.81	-6.66	2.23	17	0	T	T	4.4	E	*23	ESE	18	8	1	21	7.2
Fairbanks	436	995.3	1012.5	51	33	41.9	-2.7	66	7+	12	28	0	16	36	80	1.94	.73	.98	9	0	T	T	7.0	N	*23	W	12	5	5	20	7.5
Juneau	15	1013.5	1014.5	55	41	48.2	-.8	68	10	26	26	0	3	42	82	4.59	-2.33	.77	19	0	T	T	7.2	N	32	SE	21	3	4	23	8.4
King Salmon	44	1008.5	1010.3	54	37	45.5	-2.3	69	[illegible]	17	23	0	12	40	81	3.86	.49	.93	17	0	.6	T	10.7	SSE	*37	SSE	13	3	6	21	8.1
Kotzebue	10	1010.5	1010.9	46	35	40.6	-.3	62	3+	20	30	0	12	36	84	.90	-.04	.39	13	0	4.9	2	13.6	ESE	*35	ESE	8	2	6	22	8.2
McGrath	334	999.0	1011.6	51	34	42.5	-1.5	66	2	16	28	0	14	34	75	4.27	1.86	1.04	15	0	2.4	1	4.9	N	*29	S	13	5	7	18	7.4
Nome	13	1009.5	1009.8	48	37	42.4	.4	59	1	19	21	0	10	38	83	2.67	-.26	.58	15	0	.3	T	10.5	ENE	40	E	28	1	6	23	8.6
Northway	1713	949.2	1012.9	47	26	36.9	-5.6	75	12	-2	28	1	24	--	—	.70	-.48	.19	12	0	4.3	4	----	---	--	---	--	6	4	20	7.5
St. Paul Island	22	1005.8	1006.8	47	42	44.6	-.7	52	4	32	19+	0	2	42	92	3.72	.23	.54	22	0	T	T	----	---	—	---	--	1	3	26	9.1
Yakutat	28	1012.5	1013.6	54	39	46.5	-1.9	64	7	25	25	0	7	44	89	18.21	1.89	4.66	19	0	T	0	7.9	ESE	*50	ESE	18	4	5	21	7.7

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates.

% Peak gust.

a Maximum hourly average.

# Number of days maximum 70° or above for Alaskan stations.

Ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.

HEATING DEGREE DAYS

(Base 65°F.)

Table 3

SEPTEMBER 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
irmingham	2	2	13
obile	0	0	0
ontgomery	0	0	0
ARIZONA			
lagstaff	103	288	370
hoenix (U)	0	0	0
hoenix	0	0	0
rescott	0	0	34
ucson	0	0	0
inslow	0	0	20
uma	0	0	0
ARKANSAS			
t. Smith	0	0	9
ittle Rock	0	0	10
exarkana	0	0	0
CALIFORNIA			
akersfield	0	0	0
ishop	6	6	55
lue Canyon	94	187	182
urbank	0	2	11
ureka (U)	254	779	779
resno	0	0	0
os Angeles (U)	0	0	17
os Angeles	0	0	109
t. Shasta (R)	146	236	248
akland	36	197	237
ed Bluff	0	0	0
acramento (U)	0	2	17
acramento	0	2	22
andberg (R)	10	45	26
an Diego	0	0	42
an Francisco (U)	91	511	476
an Francisco	58	247	381
an Jose	6	22	44
anta Maria	82	361	303
COLORADO			
lamosa	236	417	494
olorado Springs	74	109	153
enver	66	87	136
rand Junction	8	8	36
ueblo	19	32	74
CONNECTICUT			
ridgeport	140	157	66
artford	243	278	115
ew Haven	165	197	111
DELAWARE			
ilmington	120	122	47
DIST. OF COLUMBIA			
ashington (U)	79	79	32
ashington	88	89	37
FLORIDA			
palachicola (U)	0	0	0
aytona Beach	0	0	0
ort Myers	0	0	0
acksonville	1	1	0
ey West (U)	0	0	0
iami (U)	0	0	0
iami	0	0	0
iami Beach	0	0	0
rlando	0	0	0
ensacola (U)	0	0	0
allahassee	0	0	0
ampa	0	0	0
est Palm Beach	0	0	0
GEORGIA			
thens	17	17	5
tlanta	5	5	8
ugusta	18	18	0
olumbus	3	3	0
acon	5	5	0
ome	13	13	8
avannah	8	8	0
IDAHO			
oise	97	141	135
ewiston	93	132	133
ocatello	138	188	183
ILLINOIS			
airo (U)	5	5	28
hicago (U)	72	76	
hicago	86	92	90
hicago University	95	103	
oline	109	122	104
eoria	74	80	97
pringfield	65	71	89
INDIANA			
vansville	55	59	59
t. Wayne	141	149	124
ndianapolis	104	111	79
outh Bend	149	174	119
IOWA			
urlington	83	92	83
es Moines	103	117	116
ubuque	173	194	185
eokuk (U)	58	64	
ioux City	114	123	153
KANSAS			
Concordia (U)	41	44	55
Dodge City	16	26	40
Goodland	60	84	95
Topeka (U)	25	26	42
Topeka	34	42	67
Wichita	12	17	32
KENTUCKY			
Lexington	78	86	56
Louisville	63	67	51
Pikeville (U)	52		
LOUISIANA			
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (U)	0	0	0
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	438	767	572
Greenville (U)	409	700	
Portland	307	432	270
MARYLAND			
Baltimore (U)	60	60	29
Baltimore	109	111	50
Frederick	147	148	47
MASSACHUSETTS			
Blue Hill Obs. (R)	247	313	
Boston	174	195	84
Nantucket	143	193	167
Pittsfield	327	445	301
MICHIGAN			
Alpena (U)	354	499	350
Detroit	172	183	104
Detroit (Willow Run)	177	195	106
East Lansing (U)	184	220	
Escanaba (U)	345	468	404
Grand Rapids	197	244	187
Marquette (U)	362	612	392
Muskegon	211	263	226
S. Ste. Marie	423	669	533
MINNESOTA			
Duluth (U)	415	684	434
Duluth	426	660	445
Internat. Falls	483	709	544
Minneapolis	202	233	182
Rochester	234	281	244
St. Cloud	308	377	310
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	31	38	68
Kansas City	17	17	44
St. Joseph	36	42	54
St. Louis (U)	17	17	38
St. Louis	27	27	45
Springfield	23	27	69
MONTANA			
Billings	140	197	222
Glasgow	220	320	288
Great Falls	203	320	347
Havre (U)	210	286	328
Helena	216	350	422
Kalispell	302	469	456
Miles City	144	189	204
Missoula	226	370	371
NEBRASKA			
Grand Island	93	107	90
Lincoln (U)	53	58	86
Norfolk	128	140	139
North Platte	120	151	138
Omaha	78	83	93
Scottsbluff	99	127	137
Valentine (U)	139	170	166
NEVADA			
Elko	195	295	263
Ely	159	277	294
Las Vegas	0	0	0
Reno	116	179	253
Tonopah	48	50	101
Winnemucca	150	197	197
NEW HAMPSHIRE			
Concord	323	423	260
Mt. Washington Obs.	847	2070	
NEW JERSEY			
Atlantic City (U)	70	71	29
Newark	117	128	47
Trenton (U)	123	133	55
NEW MEXICO			
Albuquerque	0	0	10
Clayton	26	48	68
Roswell	0	0	8
NEW YORK			
Albany	262	300	163
Binghamton	290	385	271
Buffalo	218	243	168
New York (U)	102	113	39
New York	80	89	28
Rochester	239	285	176
Schenectady	231	254	
Syracuse	225	255	146
NORTH CAROLINA			
Asheville (U)	82	85	50
Charlotte	46	46	7
Greensboro	75	75	29
Hatteras (R)	2	2	0
Raleigh	58	58	16
Wilmington	12	12	0
Winston-Salem	68	68	28
NORTH DAKOTA			
Bismarck	287	352	293
Devils Lake (U)	373	470	384
Fargo	291	344	281
Grand Forks	363	445	
Pembina	382	423	
Williston (U)	264	362	332
OHIO			
Akron	209	241	100
Cincinnati (U)	50	51	42
Cincinnati	90	98	83
Cleveland	159	176	85
Columbus	114	122	77
Dayton	106	114	79
Sandusky (U)	136	137	66
Toledo	190	204	114
Youngstown	214	246	102
OKLAHOMA			
Oklahoma City	0	0	14
Tulsa	0	0	18
OREGON			
Astoria	228	516	395
Burns (U)	187	287	266
Eugene	111	207	211
Meacham	229	454	484
Medford	69	99	77
Pendleton	63	86	104
Portland (U)	64	110	112
Portland	120	189	163
Roseburg	87	153	
Salem	102	182	157
Sexton Summit (R)	164	396	326
PENNSYLVANIA			
Allentown	178	199	98
Harrisburg	146	153	69
Philadelphia (U)	73	77	33
Philadelphia	107	111	47
Pittsburgh (U)	127	133	56
Pittsburgh	180	203	114
Reading (U)	127	133	62
Scranton	241	298	133
Williamsport	176	197	117
RHODE ISLAND			
Block Island	130	156	115
Providence	194	220	133
SOUTH CAROLINA			
Charleston (U)	3	3	0
Charleston	12	12	0
Columbia	23	23	0
Florence	21	21	0
Greenville	43	43	10
Spartanburg	40	40	7
SOUTH DAKOTA			
Huron	186	206	175
Pierre	151	173	
Rapid City	119	157	249
Sioux Falls	165	192	192
TENNESSEE			
Bristol	79	84	58
Chattanooga	15	15	24
Knoxville	31	31	33
Memphis	0	0	17
Nashville	10	10	22
TEXAS			
Abilene	0	0	5
Amarillo	7	16	37
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio	0	0	0
El Paso	0	0	0
Ft. Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	1	1	23
Midland	0	0	
Port Arthur	0	0	0
TEXAS (Cont'd.)			
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Witchita Falls	0	0	5
UTAH			
Milford	53	53	114
Salt Lake City	58	70	88
VERMONT			
Burlington	298	385	238
VIRGINIA			
Lynchburg	72	77	49
Norfolk	21	21	9
Richmond	75	78	33
Roanoke	86	92	50
WASHINGTON			
Olympia	236	391	381
Seattle (U)	147	222	228
Seattle-Tacoma	208	367	337
Spokane	149	232	250
Stampede Pass (R)	410	922	925
Tatoosh Island (R)	304	898	898
Walla Walla (U)	52	67	93
Yakima	131	155	157
WEST VIRGINIA			
Charleston	115	122	60
Elkins	189	235	162
Huntington (U)	83	85	35
Parkersburg (U)	110	119	56
WISCONSIN			
Green Bay	300	392	273
La Crosse	187	207	183
Madison (U)	133	148	177
Madison	170	200	194
Milwaukee	188	233	186
WYOMING			
Casper	139	198	268
Cheyenne	136	224	313
Lander	131	188	274
Sheridan	159	228	307
ALASKA			
Anchorage	563	1099	1040
Annette	339	843	836
Barrow	982	2819	2641
Bethel	612	1183	1298
Cold Bay	518	1393	
Cordova	574	1351	1233
Fairbanks	685	1098	1057
Juneau	500	1100	1134
King Salmon	577	1186	
Kotzebue	724	1594	1550
McGrath	667	1157	1193
Nome	673	1609	1660
Northway	838	1484	1211
St. Paul	605	1830	1710
Yakutat	549	1262	1257

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
INDIANA Kokomo area, Howard County	1	6:10 a.m.			0	0			Tornado	Funnel cloud observed north-northeast of Kokomo airport weather observer. Funnel moving eastwa did not touch ground.
PENNSYLVANIA Entire State	1	Afternoon-night					5		Electrical and rain	Several barns and contents burned by lightning southeastern counties. Meat-packing plant in Reading destroyed by fire caused by lightning. Some local flooding in western sections.
ARKANSAS Mississippi County (northern portion)	1	Evening					1	4	Hail	Hail fell in several sections in northern Mississippi County. Principal damage to irrigated co ton. Stones averaged 1/4 inch in diameter.
	1									Minor storms also reported at Plant City, Fla.; at Lebanon, Ind.; and at Medleys Neck, Md.
SOUTH CAROLINA Conway, Horry County	2	1:30 p.m.			1				Electrical	Lightning struck barn.
SOUTH CAROLINA Conway (2 miles north of), Horry County	2	2 p.m.	1/8	25	0	0	2	1	Tornado (suspected), wind, rain, and electrical	
NEW YORK Fish Creek Ponds Camp Site, Franklin County	2	2:30 p.m.			2				Electrical	2 picnickers killed by lightning bolt at this public camp site.
DELAWARE Sussex County	2	3 p.m.			1	1			Electrical and rain	Bolt of lightning that was part of series of violent electrical storms along Delaware coast st and killed fisherman in Delaware Breakwater of Lewes. Victim apparently killed instantly whe was operating with a companion a small outboar motorboat which lightning struck. Companion s ned by lightning. No reports of damage along c but heavy rains and some lightning occurred in Bridgeville-Georgetown areas.
NEW YORK Beacon, Dutchess County	2	Afternoon			1	2			Electrical	Lightning struck and killed 1 man and injured 2 golf course.
MASSACHUSETTS Franklin County and NEW HAMPSHIRE Cheshire County	2	4-6 p.m.				1	3	1	Electrical, wind, and rain	Franklin County, Massachusetts, hardest hit, wi estimated loss of $3,000. 1 man injured by lig ning at east Deerfield and 3 cattle killed in Shelburne. Lightning caused many power and ph outages and additional trouble to lines result from trees blown over or shorts in wet cables. Near Keene, N. H., principal loss near $1,000 power and phone facilities knocked out and ligh ning damage to a house.
FLORIDA Suwannee, Clay, Bradford, and Union Counties	2	Evening							Wind and rain	Heavy rains accompanied by winds blew down limbs disrupting electrical service throughout 4-cou area.
	2									Minor storms also reported in Bingham County, I and from Opheim to Larslan, Mont.
MASSACHUSETTS Somerset, Bristol County	3	Midday			0	0	1	1	Dust devil	Damage to lawn furniture and barbecue grill pic up by funnel.
TEXAS	3	3:30 p.m.	375	*30	6		3	3	Wind, hail, rain, and electrical	6 persons died by causes attributable to turbule weather. High wind, hail, and rain lashed acr area between Waco, Austin, Victoria, and Housto Roofs ripped off by winds, tenant house blown away, and larger house lifted off its foundatio while another badly damaged. Damage reported o curred in Eloise and Highbank areas, Falls Cou Storm moved northward.
NEBRASKA Table Rock (north of), Pawnee County	3	5 p.m.	2	Narrow	0	0	3	1	Tornado (suspected)	Suction effect. Considerable damage to farm bu ings. Storm moved northeastward.
	3									Minor storms also reported at Brush, Colo.; at Plant City, Fla.; at Perry, Iowa, at Hopkins, south of Steinauer, Nebr.; near Wagener, S.C.
WISCONSIN Reedsburg, Sauk County	4	2 a.m.					4	1	Electrical	Lightning destroyed barn and contents. Storm mov eastward.
WISCONSIN Chilton, Calumet County	4	4 a.m.					4	1	Electrical	Storm moved eastward.
GEORGIA Stilson, Bullock County	4	1:44 p.m.	Short	Narrow	0	1	3	2	Tornado (suspected)	Home and chickenhouse demolished and tobacco bar damaged. Some peanuts pulled from ground and trees uprooted.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IOWA Bremer to Dubuque Counties	4	Afternoon					4	1	Electrical	Lightning destroyed barn and contents, and damaged several homes. Storm moved eastward.
TEXAS Williamson and Lee Counties	4	4-5:30 p.m.	50	150	0	0	4		Tornado, wind, and rain	Tornado moving southwestward touched ground at Georgetown and ripped roofs from several buildings. Touched again at Lexington for 10 to 20 seconds, blew small, frame church from its blocks. Heaviest precipitation since May (0.84 inch) fell at Georgetown.
MICHIGAN Macomb County	4	5:30 p.m.			1		3	3	Electrical, rain, and hail	Lightning killed man near Mt. Clemens. Lightning also damaged utility lines, and heavy rains caused flooding in a few areas. Hail damaged some crops.
KANSAS Dickinson, Geary, Clay, Riley, Saline and Marshall Counties	4	6-11 p.m.							Rain, hail, electrical, and wind	Heavy rain estimated at 6 to 8 inches fell in a few hours between Chapman and Abilene, resulting in local flooding from Chapman to Detroit. Light hail fell in various localities, but only marble sized and caused little damage. Lightning struck in Salina, near Navarre, and about 10 miles southeast of Abilene, killing 4 cows and damaging barn slightly. Severe winds of almost tornadic velocity caused local damage of $1,000 near Solomon. South of Vermillion farm buildings, trees, and communication lines damaged. Slight damage occurred in adjoining counties.
KANSAS Nemaha, Brown, Doniphan, and Atchison Counties	4	7-10 p.m.							Electrical and wind	Lightning damaged some electrical transformers in Atchison and near Bendena. High winds caused minor tree and roof damage and breakage of some power- and telephone lines. Near Sabetha bolt of lightning set fire to farm plant, burning all buildings with losses estimated at $35,000.
	4									Minor storms also reported near Fairhope, Ala.; at Haxtun, Colo.; at Pawnee City and near Tekamah, Nebr.; and at Spencer, W. Va.
ENNESSEE Nashville, Davidson County	5	3:40 p.m.					4	1	Wind, electrical, rain, and hail	Wind with gusts to estimated 50 m.p.h., lifted tin roof from tenant house, blew down trees and high voltage wires, and shattered plate-glass windows. Lightning hit 3 houses, causing minor fires. Heavy rainfall resulted in flooding of basements in downtown area and hip-deep water on many streets where drainage was impeded.
ISSOURI Warrensburg (10 to 15 miles northwest of), Johnson County	5	4:30 p.m.			0	0			Tornado (suspected)	
ANSAS Eastern portion	5	Afternoon-evening			2	1	4		Wind, electrical, and hail	Thunderstorm in connection with cold front passage across eastern Kansas extending from Brown County to Harper County resulted in local damage as it moved eastward. Late in afternoon violent winds and lightning reported along much of indicated line and later in evening and early night sporadic damages occurred in more southeastern counties. Lightning damages reported as follows: Near Reserve barn with 3,000 bales of brome-grass hay burned, loss estimated at $2,500. In Topeka 3 homes suffered minor loss from lightning and at Weather Bureau Airport Station radiosonde recording equipment damaged at 4:10 p.m. Near Burlingame 17 windows in 1 house shattered by bolt of lightning. Farm house and contents burned near Oil Hill, west of Eldorado, after being struck by lightning. In northern Johnson County woman killed by lightning while standing in yard. 2 large barns east of Wichita burned after being struck by lightning about 3 p.m., loss estimated at about $15,000. Barn and contents of hay, seed, feed, and 2 calves destroyed 5 miles south of Iola early in night. Most severe winds at Anthony and Wichita. A few minutes before 3 p.m., sudden severe gust of wind hit Anthony and caused roof of business house to collapse, killing man and injuring woman. Minor damages done to other buildings and powerlines in and near town, $10,000 estimated loss. At Cessna plant in Wichita sheet metal torn from roof of building and 17 parked automobiles nearby damaged by pieces of flying sheets which punctured tops, smashed windshields, and pierced metal bodies, damages estimated at about $4,000. Severe gust of wind about 1:40 p.m., at Florence broke a number of plate-glass windows, damaged power- and transmission lines and trees. Light damage from wind reported from several other eastern localities.
OLORADO Larimer County	5								Electrical	12 acres of timber burned in Cache la Poudre Canyon from fire started by lightning. About 30 men sent out to put fire under control. Unable to get estimate of damage.

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	5									Minor storms also reported at Vernon, Ala.; at Council Bluffs and in Cedar County, Iowa; in Lincoln County, Ky.; southwest of Falls City, Nebr.; and at Martinsville, Va.
PENNSYLVANIA Northwestern portion	6	1:30 a.m.					5		Electrical, rain, and hail	Furniture warehouse and contents and another nea by building burned by lightning in Erie County, completely destroying both structures. Some lo flooding in Warren County.
NEW YORK Lords Corners, Erie County	6	3 a.m.					4	1	Electrical	Lightning struck and burned large barn, 2 silos, and milk house with contents which included 7 h of cattle.
NEW YORK Orleans County	6	4 a.m.							Wind, rain, and hail	Wind and rain accompanied by hailstones ranging 1/2 inch in diameter caused thousands of dollar damage to apples, tomatoes, and other crops. So ornamental and fruit trees uprooted. Structures suffered some injury from wind.
MISSOURI Grundy, Livingston, and Linn Counties	6	Late afternoon							Wind, hail, rain, and electrical	In Laredo many roofs damaged and considerable hai damage, with some hailstones as big as baseballs House 3 miles north of Laredo twisted on its fou dation, and 3 miles northeast of Laredo large barn damaged by wind. At Chula, many roofs damage large hailstones. Hail and wind damage general i Livingston and Linn Counties. Hailstones 2-1/2 inches in diameter observed 5-1/2 miles northeas of Chillicothe and near Avalon.
NEW JERSEY Entire State	6	Late afternoon-early evening			1	4	°5	C	Wind, rain, and electrical	Most damage reported in heavily populated northeastern and southwestern counties. Main damage was result of local flooding, fire, and locally strong winds. Many houses struck, automobiles stranded and damaged, cellars flooded, roads was ed out, trees and wires downed, etc. Extensive damage reported in Ridgefield area, Bergen Count where 150-foot roof blown off and large air conditioning unit carried 250 feet, 1-story building collapsed, and carport blown over. Several creeks overflowed and caused minor floods. Storm moved northeastward.
NORTH DAKOTA Barnes County (southwestern portion)	6				0	0	3	3	Tornado	Damage to only 1 farm reported.
	6									Minor storms also reported in Brandwine Hundred area, Del.; in Boone and Fayette Counties, Iowa; in eastern Pennsylvania; and Providence area, Rhode Island.
CONNECTICUT Fairfield and Litchfield Counties	6-7	7 p.m. 6th -2 a.m. 7th							Rain	Main effects of storm centered in Bridgeport area, Fairfield County. Unofficial but reliable weath observer reported 3.7 inches of rain between 10 and 12 p.m., period of heaviest rainfall in affe ed area. Official measurement of 0.83 inch betwe 11 and 12 p.m., at Bridgeport Weather Bureau. Flash flooding along Rooster River forced evacuation of 2 homes. Many basements of homes and factories flooded to depths of 5 feet and street made impassable for several hours in Bridgeport and Torrington. Estimated 4,000 phones out, due to seepage into underground cables.
MASSACHUSETTS	6-7	Evening-night				2	5	1	Rains, electrical and wind	Principal damage in Holyoke-Springfield area of Connecticut Valley with scattered loss in easter Massachusetts from heavy washing and flooding rains. Widespread, but minor, damage from lightning strikes, except 1 major powerline outed by bolt on Mount Tom. Minor damage from wind felli trees and limbs. 2 injured in automobile accide directly attributed to storm in Lynnfield. Huge loss, however, was many times over offset by val of rainfall to agriculture.
MICHIGAN Sumnerville (near), Cass County	7	2 a.m.	Short	Narrow	0	0	2	1	Tornado (suspected)	8 trees toppled and minor property damage done. Persons in vicinity awakened by loud, roaring noise which lasted only a few seconds.
TEXAS Mount Calm, Hill County	7	4-4:30 p.m.	2	500			4		Wind, rain, and hail	High wind, rain, and light hail, caused property damage including roof of bank building blown off another building and several barns blown down. Storm moved northeastward.
TEXAS Zapata, Zapata County	7	5-5:20 p.m.	Short	200	0	0	3		Tornado, wind, and rain	2 tourist courts unroofed, several utility poles knocked down. In 1/2 hour 2.85 inches of rain fell. Tornado moved northeastward.
COLORADO Denver, Denver County	8	3:30-4:30 p.m.				1			Electrical	Man struck by lightning and injured while he was dumping trash after cleaning his backyard. His scalp was singed and hair burned off his body.
MONTANA Clancey (north of), Jefferson County	8	Late afternoon					4	1	Electrical	Lightning strike set fire to dwelling. Storm move westward.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
IDAHO Bancroft, Caribou County	8	Night				1			Electrical	Telegraph operator knocked out by lightning bolt, hospitalized 2 days. Some damage to telephone lines reported.
	8									Minor storms also reported at Payson, Utah; and in Dillingham area, Alaska.
ASSACHUSETTS Cape Cod and Nantucket	9	Noon			0	0			Waterspouts	Several waterspouts seen at sea from Nauset Beach, Cape Cod, and from Nantucket. Spouts did not reach all the way down to sea, but spray columns rose from the sea under them.
	9									Minor storms also reported at Millinocket, Maine; and northeast of Springfield, Nebr.
DAHO Soda Springs, Caribou County	10	7:30 a.m.					4		Electrical	Lightning struck gasoline tank, containing 400 gallons, on service truck standing between 2 combines. Explosion sent flames 400 feet into air and spread burning gasoline over both combines and for 100 feet around. Combines, truck, and equipment destroyed.
	10									Minor storms also reported near Weatherby, Mo.; near Pawnee City, Nebr.; and in Chelan, Kittitas, and Yakima Counties, Wash.
TAH Salt Lake City, Salt Lake County	11	Afternoon							Wind	Strong winds accompanying thunderstorm downed power- and telephone lines, and demolished lumber-storage shed.
DAHO Idaho Falls, Bonneville County	11	7:20 p.m.					4		Wind	Thunderstorm affected mainly city of Idaho Falls where gusts of wind to 77 m.p.h., reported at airport. 3 metal hangars destroyed and 1 plane badly damaged. Wall of church under construction toppled. Trees fell on powerlines, causing outages at several points. Storm moved northeastward.
ASSACHUSETTS Wilbraham, Hampden County	12	1:30 p.m.	2	30	0	0	2	1	Tornado, hail, and electrical	Funnel observed moving northeastward, yet damage relatively small. Felled trees and broke powerlines.
UTH DAKOTA Pennington, ampbell, Dewey, nd Sully ounties	12	5-10 p.m.					3	2	Electrical, hail, and wind	Lightning started fires in northern Black Hills and at Mound City damaged roof of church and appliances in 3 homes. Golf-ball sized hail fell just west of Rapid City with small hail at other locations across State. Granary destroyed by wind northwest of Eagle Butte. Winds in northern Sully County rolled trailer house, caused crop damage, destroyed 2 empty granaries, and demolished end of barn.
NTANA hester (15 to 0 miles north f), Liberty ounty	12	6 p.m.	8	*4-5			1	4	Hail, rain, and electrical	Hailstones 1/8 to 1 inch in diameter. Storm moved northeastward.
	12									Minor storm also reported in Hampden County, Mass.
RTH CAROLINA ockingham ounty	12-15-19-20	Afternoons and evenings						5	Hail	Several hailstorms in county on dates listed. Damage estimates from County Agent's report. No separate figures for various dates.
ASKA illingham area	13	5 a.m.-10 p.m.					3		Wind and rain	Storm essentially straight-line wind locally, but part of widespread gradient circulation affecting most of Alaska mainland. Storm center moved from Nunivak Island area northeastward into north-central Alaska. Winds south-southeast with gusts to 60 m.p.h., during strongest winds. Damages consisted of aircraft, boats, and scows damaged by strong winds and rough water action. Dock structures in Dillingham area also suffered considerable damage.
YORK ewburgh, range County	13	Night					5	1	Rain	Rain of cloudburst proportions caused flooding of streets and basements. One concern alone estimated its loss at $75,000.
	13									Minor storm also reported at Huntsville, Ala.
SACHUSETTS, RMONT, NEW MPSHIRE (south-n portion), and INE (south-stern portion)	14	A.m.-p.m.			1	2	5	5	Electrical, wind, rain, and hail	Severe thundersqualls prior to and thunderstorms associated with passage of cold front caused much loss over widespread area. Minor lightning damage in northern Vermont in early morning and major losses from lightning, wind, washing and flooding rains, hail in many localities elsewhere in afternoon. Principal hail damage to apple crop in Maine and New Hampshire totaling over $50,000. Many fires from lightning damaged homes and barns. Wind felled trees and limbs which, with lightning strikes, broke power- and phone lines, with tens of thousands of homes affected. Some structural damage from wind also, including $15,000 loss to building at Pownal, Vt. Many road and street washouts and property damage from flooded basements due to heavy rains, principally in eastern Massachusetts. Death in Pembroke, N. H., and 2 injuries in Reading, Mass., due to motorists being suddenly blinded by heavy rain.

e reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ARIZONA Phoenix, Maricopa County	14	Afternoon			1				Heat	Heat prostration was listed as possible cause of death of laborer.
CONNECTICUT Southern portion	14	4-6 p.m.	150	*30			°4	C	Electrical, wind and rain	Violent thunderstorms cut wide path of destruction from Danbury to Rhode Island line. Danbury area suffered heaviest damage as city littered with fallen trees, limbs, and broken powerlines. 3 light aircraft damaged by registered 75-m.p.h., wind at Danbury Airport with total loss set at $5,000. Several automobiles and buildings damaged by falling trees, store windows blown in, and streets flooded. Hamden, Newtown, New Haven, and eastern Connecticut areas suffered similar but less serious damage. Lightning-caused fires damaged 2 homes in Middletown area and destroyed barn in Norwich for total damage of $11,000. Power failures extending into next day affected 25,000 homes across State. Damage to crops light, but included some fruit blown off trees. No injuries attributed to storm, although several narrow escapes including capsizing of small craft on Long Island Sound throwing occupants into water. Storm moved east-northeastward.
MAINE Augusta, Kennebec County	14	4:10 p.m.	2	100	0	0	4	1	Tornado, rain, hail, wind, and electrical	Path through grounds of Augusta State Hospital, with some tornado-like characteristics. Storm moved northeastward.
RHODE ISLAND Central portion	14	5-7 p.m.	25	*20		3	°4	C	Electrical, wind, and rain	Continuation of violent thunderstorms moving east-northeastward from Connecticut. Wind gusts of 73 m.p.h., recorded at Providence Weather Bureau. Lightning injured 2 farmers and killed nearby cow in Foster, and 1 person hit by car in blinding rain in Providence. Loss of cow set at $200. Lightning and falling trees damaged several homes, buildings, and automobiles in greater Providence with a few minor fires resulting. Several thousand homes affected by phone and power failures. Crop damage relatively light and confined to frui blown off trees. Northern and southern parts of State relatively unaffected.
NEW YORK Brookfield, Madison County	14						4	1	Electrical	Barn and contents struck and destroyed by lightnin
KENTUCKY Shelby County	14				1	2			Electrical	Lightning struck and killed 1 man and injured 2 others.
	14									Minor storms also reported in Bracken and Pendleto Counties, Ky.; and at Gettysburg, Redfield, Sioux Falls, Timber Lake, and Waubay, S. Dak.
ILLINOIS South-central portion	15	2 a.m.					5		Wind, electrical, and hail	Scattered widespread damage by wind, lightning, an hail in an area extending from Springfield to Belleville and east-southeastward across State.
ILLINOIS Millstadt, St. Clair County	15	2:30 a.m.	1	400	0	0	4		Tornado	Tornado moved south-southeastward.
INDIANA Jennings County	15	Morning	8				3	4	Hail	Hail size of tennis balls struck several fields of crops from western border of Jennings County to within 2 miles of North Vernon. Storm moved eastward.
INDIANA Seymour, Jackson County	15	Afternoon					4	1	Hail	Hail as large as golf balls killed over 100 chickens 8 small pigs, and broke 4,000 windows of greenhouse. Roof of house and several cars damaged.
NORTH DAKOTA Bottineau County (northwestern portion)	15	Late afternoon			0	0	4	3	Tornadoes	3 funnel clouds observed. Granaries, garage, haystacks, and other articles moved and wrecked. Report received that grass was torn out of ground i path of tornado.
INDIANA Switzerland County	15	Evening					1	4	Hail	Large hail damaged many fields of tobacco.
KENTUCKY Trimble County	15	P.m.						3	Hail	Hailstones as large as golf balls damaged unharves ed tobacco.
VIRGINIA King George and Westmoreland Counties	15								Wind and rain	Wind took off part of roof and blew in sidewall of store at Index. Door blown down and rain damaged merchandise in store at Rollins Fork. Fallen trees blocked highways at several points in Rolli Fork-Index-Oak Grove sections.
	15									Minor storms also reported at Hazleton, Lawrencepo Lynnville, and Princeton, Ind.; at Parsons, Kans. and in Gallatin County, Ky.

See reference notes at end of table.

able 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
ISSOURI Central and east-central portions	15-16	Late evening-early morning							Electrical and wind	Thunderstorms moved across central and east-central Missouri, beginning in Saline County, during late evening of 15th and moved through Howard, Boone, Audrain, Calloway, Warren, Montgomery, Lincoln, Gasconade, St. Charles, St. Louis, and Franklin Counties, reaching Mississippi River by early morning of 16th. Barns set afire and destroyed at Marshall, Hatton, New Hope, and Murry, and shoe factory set afire and destroyed at Mexico late in evening of 15th. As thunderstorms approached east-central counties, there was more wind damage. Strong winds blew off roof of ballpark grandstand at Winfield, Lincoln County, and damaged carnival equipment there early in morning of 16th. Some wind damage to trees and a few residences reported in St. Louis, and new church building damaged by lightning at St. Charles early in morning of 16th. Roof blown off barn near Fulton at 1:30 a.m., 16th, and roof blown off home in Hermann. Several barns damaged near Berger.
NTUCKY nderson, Bath, Jessamine, cott, and oodford Counties	15-16	Night-early a.m.				1	5	4	Electrical and wind	Several homes and barns damaged or destroyed by fires caused by lightning. 1 barn contained almost $90,000 in grass and wheat seed. Several trees downed by wind accompanying storm.
NTUCKY helby, Jefferson, and ardin Counties	16	A.m.					4	3	Electrical	Lightning struck school building, several homes, and barns. Resulting fires either destroyed or damaged buildings and their contents. Numerous hogs killed. Hay, feed, and milking equipment lost.
NSAS sage, Franklin, nd Anderson ounties	16	10:30 p.m.-midnight					4		Electrical	3 lightning strikes reported; about 10:30 p.m., 2-1/2 miles south of Homewood, Franklin County, barn and contents of 2,400 bales of hay and large quantity of oats, barley, and seed wheat destroyed by fire; vacant house on farm 4-1/2 miles northeast of Lyndon struck and burned about 11 p.m.; during night barn with contents and chickenhouse with a number of chickens burned from lightning strike near Garnett.
SSOURI ape Girardeau nd Delta, ape Girardeau ounty	16	Late evening							Electrical	Lightning struck large tree which fell on house. Barn destroyed by lightning at Delta.
ORIDA ake City, olumbia County	17	10 a.m.			1				Wind	Person electrocuted by broken high-voltage wire.
LAHOMA orth-central rea	17	A.m.					4	1	Electrical, wind, and rain	9 lightning strikes reported over widely separated areas. At 5:02 a.m., lightning caused $1,000 damage to roof and attic of house in Tulsa; power plant slightly damaged in Stillwater; city hall in Oklahoma City received $350 damage; only minor damage resulted to home and church, and grass fire in Cushing; barns struck and burned at Tecumseh, Guthrie, and Bixby; and home damaged at Bixby. Light damage by winds to small buildings and trees reported near Jefferson, Grant County.
STRICT OF OLUMBIA, etropolitan ashington area	17	4-7 p.m.				4			Wind, rain, hail, and electrical	Violent thunderstorm accompanied by gusts reported up to 60 m.p.h., torrential rains, and some hail. Hailstones "as big as quarters" reported by Park Police in park areas. 2 men employed by roofing firm injured when gust blew section of roof from Poolesville School. Worker suffered cuts and bruises when piece of roof fell with him 18 feet to ground. Youth of Route 1, Rockville, suffered back injuries when hit by flying planks as roof section blew off. Lightning set off blaze in pile of logs at construction project in Glen Echo area, but was extinguished without damage to property. Tree struck by lightning and set afire in Washington. Hail fell in Arlington County, Va., and Prince Georges and Montgomery Counties, Md.
RYLAND napolis area, ne Arundel ounty	17	Afternoon				1			Wind	Operator of small outboard motorboat found lying in bottom of his small craft, suffering from shock and exposure as storm stirred up Chesapeake Bay waters and swamped his boat.
NESSEE astern portion	17	5 p.m.							Rain, hail, and electrical	Heavy rain with hail near Midway caused flash flood. No flood damage reported. 2 barns, 1 in Roane County 4 miles south of Kingston, the other in Meigs County ignited by lightning and destroyed. The former reported loss of 1,400 bales of hay. Power substation at Spring City struck by lightning leaving that city without power for 11 hours.

ee reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

SEPTEMBER 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
PENNSYLVANIA Eastern half	17	5-7 p.m.			0	1	5		Electrical, wind, tornado, hail, and rain	Severe thunderstorms set fire to several dwellings. High winds took their toll of trees, radio and TV antennas, and signs in addition to disrupting power services to many areas. Hail up to 1 inch in diameter fell in most southeastern counties, ruining many acres of tomatoes, tobacco, corn, and apples as well as breaking many windows. Twister hit Lancaster County and cut swath 3 miles long and about 50 yards wide, destroying tobacco shed and damaging several dwellings. Boy injured when struck by piece of roofing material torn from nearby home.
MARYLAND Back River, Baltimore County	17	Late afternoon			2				Wind	2 men drowned when sudden hard-driving storm swamped and capsized their rowboat near mouth of Back River. Storm churned up Chesapeake Bay waters and caused extensive damage on land as well as on the water.
TENNESSEE Athens, McMinn County	17	6 p.m.	5	*1					Electrical, wind hail, and rain	Violent storm with near-continuous lightning and incessant thunder accompanied by wind, hail, and heavy rainfall. Several stores and buildings flooded; many trees uprooted and limbs snapped, causing extensive damage to 1 barn and house. Lesser damage to another home and automobile. Storm moved southward.
NEW JERSEY Monmouth, Ocean, and Atlantic Counties	17	6-9 p.m.				Several	5	1	Wind, electrical, hail, and rain	Principal damage near shore. Atlantic City area hardest hit. Many trees, small signs, electric wires, and TV antennas downed; several houses struck and front portion of 1 house torn off by wind; 1 large sign, valued at $80,000, blown off boardwalk hotel. Atlantic City Weather Bureau Office reported 60-m.p.h., wind, with gust to 75 m.p.h., at 7:14 p.m., 0.25-inch rain fell in 5 minutes, and pressure jump of 0.105 inch recorded.
ALABAMA Morgan and Lawrence Counties	17	8-9:30 p.m.					4	1	Electrical and rain	Lightning burned house about 5 miles west of Decatur, another near Moulton, and third in northeastern Lawrence County.
MARYLAND Ocean City area, Worcester County	17	Evening							Wind, rain, and electrical	Intense wind-and rain storm ripped through Ocean City area, inflicting considerable damage on property. Storm accompanied by violent thunder and lightning. Storm overturned airplane, left boats drifting in Bay, ripped TV antennas, littered streets with porch furniture, trash, cans, and debris. Ocean City's surface drainage system temporarily flooded to overflowing by 1/2-inch rain dumped during 15-minute period.
PENNSYLVANIA Entire State	17	Night					4	1	Wind, hail, electrical, and rain	Severe local thunderstorms accompanied by hail in some sections and strong winds tore shingles from roofs, disrupted power services and felled many trees, etc. A few minor fires in homes and barns resulted from lightning.
	17									Minor storms also reported at Cedar Vale, Kans.; at Baltimore and Snow Hill, Md.; and in Alleghany County, N. C.
OKLAHOMA Lenapah, Nowata County	18	P.m.					4	1	Electrical	Lightning struck and burned barn and contents which included 40 tons of hay, 1,000 bushels of oats, and pickup truck.
	18									Minor storm also reported at Cocoa Beach, Fla.
ARKANSAS El Dorado, Union County	19	6 a.m.							Electrical	55,000-barrel oil-storage tank, believed to have been about one-half full, destroyed by fire after being struck by lightning.
	19									Minor storm also reported at East Prairie, Mo.
Washington Columbia Basin and Grant, Lincoln, Adams, Franklin, Walla Walla, Whitman, and Spokane Counties	20	Afternoon-evening				2			Dust	Duststorm which reduced visibility to zero at times in some localities of Franklin and Adams Counties occurred with passage of rapidly moving frontal system. Several automobile collisions occurred and 2 persons were injured. Highways closed to travel for several hours.
KANSAS Most of State	21	6 a.m.-8 p.m.							Wind, electrical, and dust	Intense low pressure area in its eastward movement across northern Nebraska and South Dakota produced southerly winds over Kansas, reaching gust speeds of 50 to 70 m.p.h., and sustained speeds of 35 to 40 m.p.h., for 5 to 10 hours. Visibility reduced to 5 miles or less at all reporting stations, except Chanute where the lowest visibility 6 miles from 8:30 to 11:30 a.m. From duration of 1 hour with visibility of 5 miles at Emporia, length of time with visibility of 5 miles or less increased to 3 hours at Topeka, 5 to 11 hours in western third of State, and to between 10 and 18 hours in central third. Lowest visibilities occurred in

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4-Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										extreme west, with shift in wind to west together with increase in speed. Goodland reported lowest visibility of zero for an hour and 1-1/2 miles or less for 2-1/2 hours. Hill City's visibility down to 1 mile or less from 3:35 to 6:30 p.m., when thunderstorm began. Highest recorded wind was gust of 69 m.p.h., from southwest at Salina at 9:28 a.m. In connection with thunderstorm and wind shift about 5 to 6 p.m., in Russell, Mitchell, and Jewell Counties severe winds damaged trees and antennas, and power- and telephone lines broken by falling trees. A number of farm buildings damaged near Lucas, Russell County; Glen Elder, Mitchell County; and Jewell, Jewell County. Damage near Lucas estimated at $5,000. Grass fire started about 8 p.m., near Natoma, Osborne County.
OKLAHOMA Jet, Alfalfa County	21	Day				1		2	Wind and dust	Strong wind caused blowing dust which reduced visibility to near zero in northern and western parts of State. Poor visibility due to dust caused automobile accident in which 1 person injured.
	21									Minor storm also reported in Jerome County, Idaho.
MISSOURI Camden County	22	5-6 p.m.							Electrical and wind	Small plane demolished at Camdenton Airport. House set afire by lightning. Many trees and TV antennas damaged.
ISSOURI Hermitage, Hickory County	22	6:30 p.m.					4		Electrical	Damage to store set afire by lightning.
ISSOURI Lamar, Barton County	22	7 p.m.					4		Electrical	Damage to barn hit by lightning.
ICHIGAN Ottawa and Kent Counties	22	Evening					4	1	Electrical and rain	Severe lightning set 11 fires, including 3 barns destroyed. Although storm lasted 2 hours, rainfall generally light.
ISSOURI Jefferson City Cole County	22	Evening					4		Electrical	Lightning set stable afire, killing several horses.
ISSOURI Flat River, St. Francois County	22	Late evening							Electrical	Large barn destroyed by lighting-set fire.
	22									Minor storms also reported at Davenport, Iowa; near Columbus, Kans.; and at Carl Junction, Humansville, Iberia, and Loughboro, Mo.
ENNESSEE Knoxville, Knox County	23	4 p.m.					3	1	Rain, hail, and electrical	Heavy rain with hail; church steeple struck by lightning and burned.
ARYLAND Hagerstown, Washington County	23	Evening							Wind, electrical, hail, and rain	Series of thunderstorms that brought hail, strong winds, and rain resulted in scattered damage to property. In some sections electricity knocked out. At scattered points, heavy hail occurred about 6:30 p.m.
EW YORK Andes, Delaware County	23	Evening							Hail	Hailstones, some size of hens' eggs or larger broke some 500 windows in stores and homes, damaged roofs, slashed tops of convertibles, and battered neon signs into pieces. Streets and lawns littered with foliage torn from trees. Aluminum siding and automobile bodies dented by hailstones. Impossible to estimate monetary value of sustained losses.
EXAS Nueces County	23						3		Hurricane Flossy	Hurricane Flossy caused high tides and rough seas in Corpus Christi area. Highest tide reading was 3.0 feet MLW; beach roads under water, and 2 cars trapped on beach and portion of fishing pier at Port Aransas washed away.
	23									Minor storm also reported in Marietta area, Ohio.
OUISIANA Southeastern portion	23-24	P.m.-a.m.			4		7	6	Hurricane Flossy	Hurricane crossed Mississippi Delta during night of 23d and 24th. Eye of hurricane about 30 miles in diameter and extended from Buras to just south of Burrwood as it crossed Delta. Highest recorded wind 84 m.p.h., at Burrwood at 6:28 a.m., 24th. Heaviest reported rainfall amount 16.70 inches at Golden Meadow. High water covered area from Mississippi Sound to Orleans Parish and Mississippi River levees ranging from 6 to 13 feet. Protection levee in St. Bernard Parish failed to hold sea water back. Water from Lake Pontchartrain came over seawall and flooded parts of Gentilly section of New Orleans. Several hundred persons lost their homes and thousands more housed in emergency shelters. Large herds of cattle east of Mississippi River drowned and muskrat and citrus destroyed.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MISSISSIPPI Coastal section	23-24	P.m.-a.m.					4	6	Hurricane Flossy	Winds 50 to 60 m.p.h., at Bay St. Louis at 5 a.m., 24th; rainfall 6.18 inches and tides 3.5 feet above MLW. At Gulfport; wind 48 m.p.h., at 7:45 a.m., 24th; rainfall 6.49 inches and tide 3.5 feet above MLW. At Pascagoula wind 55 m.p.h., at 9 a.m. 24th; rainfall 8.04 inches and tides 3.2 feet above MLW. At Pass Christian winds 60 m.p.h., and tides 3.5 feet above MLW.
MASSACHUSETTS Eastern portion	23-24	Midnight				4	4	1	Electrical and rain	Lightning damage in many local areas. Cellars and underpasses flooded by heavy rains. Injuries in car accident in Boston blamed on storm.
FLORIDA Wewahitchka, Gulf County	24	2 a.m.	20		0	0	4		Tornado	Apparently associated with a squall line in advance of hurricane Flossy. Path erratic, lifting and lowering. Storm moved north-northeastward.
FLORIDA Suwannee County (southern portion)	24	9 p.m.	3	50	0	0	4		Tornado	Apparently associated with squall line in advance of hurricane Flossy. Buildings demolished. Storm moved north-northeastward.
FLORIDA Eridu, Taylor County	24	Early evening	5	*1	0	0	5		Tornado	Apparently associated with squall line in advance of hurricane Flossy. Buildings damaged, but most damage to surrounding timberlands. Storm moved north-northeastward.
	24									Minor storm also reported at Eldorado, Okla.
FLORIDA Northwestern portion	24-25	2:10 p.m.-5 a.m.			7				Hurricane Flossy	Hurricane moved east-northeastward and passed short distance south of Pensacola where highest winds reported 64 m.p.h., with gusts to 88 m.p.h., when eye of hurricane was over Fort Walton. Navy reconnaissance plane reported winds 93 m.p.h., over Gulf, southeast of center. Tide 4.4 feet above MLW at Pensacola and 5 feet above at St. Marks. Tides battered coast from New Orleans to Tampa Bay area where beach installations battered by tides and wave action. Wind-blown sand along beach area drifted onto highways. Paint literally sand-blasted off automobiles and buildings.
ALABAMA Southeastern and extreme southern portions	24-25				4	1	6	6	Hurricane Flossy	Hurricane moved northeastward into southern and southeastern Alabama during night. Wind speeds reached peak gust of 65 m.p.h., 58 m.p.h., at Mobile, 51 m.p.h., at Dothan, and 54 m.p.h., at Montgomery. Rain heavy from northeast of Montgomery to Gulf, covering area of 21 counties. Heaviest storm total rainfall 16.30 inches at Gulf Shores, heaviest reported 24-hour amount 8.76 inches at Montgomery. High wind speeds throughout most of 24th and 25th coupled with heavy rainfall added materially to crop damage. 2 deaths occurred at Mobile, 1 by touching "live" wire, the other in car wreck. 2 deaths in Dothan area, due to automobile accidents. Damage to boats in Mobile Bay and at Dauphin Island $52,500; plane damaged at Mobile $2,500; damage to roads and bridges $250,000; and damage to buildings, trees, TV antennas, utility lines, etc., $400,000.
GEORGIA Most of State	24-26								Hurricane Flossy	Hurricane moved east-northeastward across Georgia, entering State in extreme southwest and leaving between Savannah and Augusta. Storm moved into State early Tuesday morning September 25 and left late that night. Heavy rains started in southwest on 24th and ended in eastern part of State on 26th Winds generally no higher than 40 to 50 m.p.h., near center of storm as it moved through State, but winds of 25 to 35 m.p.h., extended over large part of State. Wind damage to property confined mostly to uprooted trees and broken branches, many of which fell across utility lines, causing interruptions of service. Greatest damage was at Lake Sinclair, north of Macon, where wind and waves did about $50,000 damage to pleasure boats and dock facilities. Some damage to cotton and peanuts still in fields. However, most of loss is result of lower grades on these commodities that went through storm. Pecan crop damaged an estimated 15 percent in some sections where many premature nuts blown from trees. Much of corn crop blown over, making mechanical harvest more difficult. Rainfall excessive over most of south and central, but except for some local street flooding there was not a great amount of damage from rains. Due to preceding dryness they were welcome in all parts of State.
SOUTH CAROLINA	24-26						4		Hurricane Flossy	Rains beneficial. Storm moved northeastward.
SOUTH CAROLINA Hilton Head, Beaufort County	25	11 a.m.	1/2	35	0	0	1	1	Waterspout and wind	Waterspout moving inland north-northwestward destroyed old shed.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
GEORGIA Candler County	25	Early p.m.	Short	Narrow	0	0	3	1	Tornado	Wrecked tenent house and did some damage to timber.
NEW MEXICO Tatum and McDonald communities, Lea County	26	4 p.m.						4	Hail and rain	Damage to cotton and slight damage to ripe grain. Storm moved southwestward.
NORTH CAROLINA Entire State except western slopes of mountains	26-27				3		5	6	Hurricane Flossy	Remains of hurricane Flossy crossed State. Path of storm center northward through eastern coastal plains, but heaviest rain fell far to west of center, along eastern mountain slopes and foothills. Some trees blown down in same area, probably due to rain-softened ground rather than very high winds. Highest reported wind gusts to 55 m.p.h., at Wilmington. No trees reported down in east, and no significant structural damage there. Property damage due to local washouts, cave-ins, and trees blown down on houses. Several county fairs rained out. Some tidal flooding of lowlands near coast. Crop damage due to cotton blown out and quality reduced, some tobacco blown off stalks, and corn blown down. 1 woman killed near Asheville in traffic accident, 1 man near Charlotte in aircraft crash, girl drowned in swollen creek in Alamance County; all attributed indirectly to storm.
VIRGINIA	26-27						6	4	Hurricane Flossy	Wave action combined with unusually high tides along Virginia coast, in Chesapeake Bay, and along tidal rivers wrought extensive damage to shorelines by erosion and to low-lying beach property by inundation. Several fishing boats and many small pleasure craft destroyed or damaged. In Norfolk, where several thousand homes and business buildings flooded, cost of moving furniture and business equipment out and back, as well as cleaning up after water receded, involved greatest expenditure necessary to repair effects of storm. Beach frontages along York and lower Rappahannock Rivers badly eroded. Crop damage included tangled corn and soybeans, dropped apples, and salt water in low fields. In most of State rainfall brought by tropical storm benefited crops and supplied much-needed soil moisture.
NEW JERSEY Eastern and southeastern coastal areas	26-27-28								Hurricane Flossy	Remnants of hurricane caused significant damage in southeastern coastal areas when some wind damage and flooding occurred. Winds of about 45 m.p.h., reported on 26th at Atlantic City and hourly speeds ranged from 38 to 54 m.p.h., on 27th. On 28th winds gradually slackened from 40 to 28 m.p.m. Peak gust of 69 m.p.h., noted at Atlantic City on 27th. Winds up to 30 to 40 m.p.h., reported as far north as Sandy Hook. Total rainfall not excessive, with largest falls only a little more than 1 inch, chiefly on 27th. Flooding occurred at times of high tide on afternoon and evening of 27th, with only minor flooding at other times of high tide. Highest measured tides 7 to 8 feet above MLW. 4- to 5-foot waves reported on beach and waves estimated at 10 feet offshore. Many moored small craft destroyed or damaged, and piers, boardwalks, and ocean-front structures damaged slightly. Greatest monetary losses probably due to beach erosion from pounding of surf. Storm moved north-northeastward.
WEST VIRGINIA Mercer, Summers, Raleigh, Monroe, Greenbrier, Hardy, and Jefferson Counties	26-28								Rain	Remnant of hurricane Flossy gave local storm total rainfall of as high 2 to 4 inches.
IDAHO Ada and Elmore Counties	27	Late afternoon							Wind and dust	Apparent squall line caused duststorms, some damage to trees, signs, and roofs as it moved from vicinity of Meridian to Atlanta. At Boise extreme wind 43 m.p.h., from northwest about 4:30 p.m., and dust so heavy motorists in and west of city needed lights. Wind hit Atlanta at 5:30 p.m. Storm moved eastward.
MARYLAND and DISTRICT OF COLUMBIA	27								Wind and rain	Whipping winds, heavy rains, and high tides resulting from remnants of hurricane Flossy caused some concern in some Maryland communities. As storm lashed State, shipping tied up at Port of Baltimore and dock activities virtually at a standstill. Fallen trees disrupted telephone services in some Eastern Shore areas and knocked out over 1,000 telephones in Washington-College Park area. Point Lookout, the extreme southern tip of St. Marys County, without road connection to mainland as waters rose. St. George Island jutting into

See reference notes at end of table.

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MARYLAND and DISTRICT OF COLUMBIA (Cont'd)										Potomac River about 10 miles northwest of Point Lookout was two-thirds under water during afternoon as above-normal tides swept up from Chesapeake Bay. Only a few families of island's population of 300 to 400 persons left their homes in the face of the storm. At Ocean City, Coast Guard reported top wind speed of 63 m.p.h.
VIRGINIA Rockingham, Augusta, Shenandoah, and Page Counties	28						5		Rain and low temperatures	Estimated 75,000 young turkeys valued at about $150,000 reported dead as result of low temperatures and rain. Flock losses ranged from 25 to 3,500.
	28									Minor storms also reported in Houghton County and near Williamston, Mich.
	30									Minor storm reported at Mesa, Ariz.
DELAYED REPORTS										
COLORADO Bent County	Aug. 17-19	Evening 17th-19th					4		Rain and hail	Prolonged rain caused flooding which destroyed 2 bridges and washed out approaches to 2 others.

* Miles instead of yards.
** Yards instead of miles.
° Includes both crop and property damage.
C Crop damage included in property damage.
MLW Indicates mean low water
† Storm damaged are placed in categories varying from 1 to 9 as follows:

1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000, 000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000.

HURRICANE FLOSSY, SEPTEMBER 21-28, 1956

HIGHLIGHTS.--Hurricane Flossy crossed the Mississippi River Delta between Grand Isle and Burrwood, La., during the night of September 23-24. Winds between 90 and 110 m.p.h. were experienced at these stations, on opposite sides of the storm center between 3 and 4 a.m., c.s.t., on the 24th. Turning sharply east-northeastward across the northern Gulf of Mexico, the center again entered the U. S. mainland a short distance south of Pensacola, Fla., with sustained winds of 64 m.p.h. and gusts reaching 88 m.p.h. From the Panhandle of Florida, a greatly weakened Flossy moved northeastward over the southeastern corner of Alabama, across Georgia, the Carolinas, and southeastern Virginia to enter the Atlantic on the 28th as a wind and rainstorm.

HISTORY OF THE HURRICANE.--A circulation between Chetumal and Belize on the Yucatan Peninsula during the morning of September 21 moved north-northwestward across the Yucatan Peninsula and entered the Gulf of Mexico near Merida on the 22d. The area of circulation expanded considerably, but the intensity near the center increased rather slowly as it moved northward across the Gulf. The storm reached hurricane intensity about noon on September 23, when it was centered about 125 miles south of the Louisiana coast.

Soon after Flossy reached hurricane force, she turned sharply east-northeastward and crossed the Mississippi Delta just north of Burrwood, La., where the highest winds were estimated between 90 and 110 m.p.h. The hurricane continued east-northeastward and passed a short distance south of Pensacola, Fla. Highest winds reported over land in that area were 64 m.p.h., with gusts to 88 m.p.h. When the eye of the hurricane was over Ft. Walton, Fla., a Navy reconnaissance plane reported winds of 93 m.p.h., over the Gulf southeast of the hurricane center. A tornado, well in advance of the storm center, was observed near Wewahitchka in Gulf County at 3 a.m., on the 24th. A second tornado was reported in Jefferson County and a third in southern Suwannee County during the evening of the 24th. All three tornadoes were associated with a squall line moving eastward within the storm circulation. Tides reached 5 to over 8 feet above normal along most of the extreme southeastern Louisiana coast, 3 to 4 feet above normal along much of the Mississippi coast, and 4 to 5 feet above normal along most of the northwestern Florida coast. Beach installations from the Mississippi Delta to Tampa Bay were damaged by tides and wave action. Wind-blown sand along the beach areas drifted on highways. Paint was literally sandblasted off exposed automobiles and buildings.

As the storm moved across the Florida Panhandle it rapidly lost its hurricane structure. Cold air entered the circulation, and it had assumed extratropical characteristics by 1:30 p.m., e.s.t., when it was in south-central Georgia.

From western Florida, the storm center moved through the southeastern corner of Alabama. Wind speeds reached 58 m.p.h., in peak gusts at Mobile, 51 m.p.h. at Dothan and 52 m.p.h. at Montgomery on the 24th. Rainfall was quite heavy from Montgomery to the Gulf coast, with 13.30 inches at Gulf Shores. Several stations measured over 8 inches of rain in 24 hours.

Flossy moved into the extreme southwestern part of Georgia from Alabama about 6:00 a.m., e.s.t., September 25. When the storm reached Georgia its intensity had decreased to the extent that winds were generally only 40 to 50 m.p.h., with gusts slightly higher. Over 6 inches of badly-needed rain fell over much of the State.

Flossy left Georgia late on the night of the 25th - 26th north of Savannah, with her intensity further reduced and her center poorly defined.

The storm continued to decrease in central intensity and spread outward over ever larger areas as it continued its northeastward progress through the Carolinas and southeastern Virginia. Onshore winds ahead and east of the storm center produced above-normal tides and wave action along the coast.

The indefinite center of the storm passed just west of Charleston, S. C., on the 26th. At that city pressure dropped to 29.54 inches, the strongest winds were 35 m.p.h., with gusts to 43, and rainfall totaled 4.27 inches.

A tornado was reported at Hilton Head Island, near Savannah, Ga., ahead of the storm on the 25th, but caused only negligible damage.

Tides were the most important factor in southeastern Virginia during the passage of the weakened circulation of Flossy. Water flooded 2 1/2 feet deep over several of the principal streets in downtown Norfolk.

The storm circulation moved slowly northeastward off the middle Atlantic coast, producing gusty winds and moderate rain northward through New England, but the storm by now had acquired cold and warm fronts and acted as a typical extratropical Low with winds 30 to 40 m.p.h., gusting to 45 and 50 in some coastal areas.

Flossy was the first hurricane of this season to affect the United States. It was the seventh storm of the season, and the third to reach hurricane intensity. Fifteen deaths are attributed to this storm. The total damage in dollars is not known, and reliable figures may not be available for some time. A preliminary estimate of damages by states is given in the table below:

Table 1

State	Deaths	Damage to Crops	Damage to other Property	Total
Louisiana	4	3,750,000	7,750,000	11,500,000
Mississippi	None	750,000	50,000	800,000
Alabama	4	8,950,000	705,000	9,655,000
Florida	7*	1,754,000	1,065,000	2,819,000
Total	15	15,204,000	9,570,000	24,774,000

*Five of the seven deaths in Florida resulted from the collision of two jet planes in mid-air during evacuation from a military base. One of the planes crashed into a home killing the pilot and four persons in the house.

The track of the storm is shown in Figure 1. Climatological data are contained in Table 2. Figure 2 shows the approximate outer limit of hurricane winds and the path of the center in the Gulf Coastal area.

TROPICAL STORM DATA

FLOSSY

SEPTEMBER 21 – 28, 1956

Station	Date	Pressure (inches)		Wind (m.p.h.)				Rainfall (inches)	Remarks
		Low	Time †	Fastest mile	Time †	Gusts	Time†		
Brownsville, Texas									
Galveston, Texas	23	29.76	1700 c.	21 E	0125 c.	32	0125 c.	0.18	Slight flooding around Island
Port Arthur, Texas	23	29.75	1630 c.	34 NE	1505 c.	37	1505c.		Tide at Sabine Pass 3.5 feet above mean low water at 1900 c. on 23d.
Lake Charles, La.	23	29.73	1828 c.	17 NE	1500 c.			None	
Baton Rouge, La.	23	29.66	0230 c.	23	1428 c.	35			
New Orleans, La. (Airport)	23					70	2325c.	5.40	
	24	29.51	0208 c.	48 ENE	0225 c.				
Grand Isle, La.	24	29.20		90* NW	0300 c.	100*			Tide exceeded 8 feet. Wind shifted southeast to northeast then northwest. Worst from northwest.
Burrwood, La.	24	29.03	0500 c.	90* NW	0605 c.	110*	0605c.	7.05	Tide 1.5 feet above normal.
Bay St. Louis, Miss.	24			60*					Tide 3.5 feet above mean low water. Rain estimated 6 to 7 inches.
Pass Christian, Miss.	24			60 NNE					Tide 3.5 feet above mean low water.
Gulfport, Miss.	24			60 NE					Tide 3.5 feet above mean low water.
Biloxi, Miss.	24			60*		70*			Tide 3.5 feet above mean low water. Waves 7 feet above mean sea level.
Pascagoula, Miss.	24			50* NE	0200 c.	60*	0200c.		Tide 3.4 feet above mean low water.
Mobile, Ala.	24	29.40		50 N	1517 c.	58	1517c.	7.09	
Pensacola, Fla. (Airport)	24	29.07	1410 c.	58 NE	1410 c.	78	1635c.	10.69	Tide 4.4 feet above mean low water. Wind at Naval Air Station 64 m.p.h. with gusts to 88. Minimum pressure 29.01 inches at 1430 c.
Tallahassee, Fla.	24			30 SE	1600 e.	40	1600e.		Tide 5 feet above normal at St. Marks, Fla. Tornado reported 1/2 mile west of Dale Mabry field morning of 24th.
	25	29.47	0500 c.					4.13	
Tampa, Fla.	25	29.71	0330 e.	20 SSW	0502 e.	32	0502e.	1.07	Tide 3.6 feet above normal.
St. Petersburg, Fla.	25			45* SSW	0500 e.	75*	0500e.	1.70	
Savannah, Ga.	24			43 SW	2354 e.	52	2354e.	3.76	Tornado reported near Hilton Head Island. Minor damage.
	25	29.52	1547 e.						
Columbia, S. C.	25	29.61	1930 e.	23 NE	1913 e.	32	1913e.	4.41	
Charleston, S. C.	25	29.54	1550 e.	35 E	1247 e.			2.62	Highest tide (6.8 feet) was 1.7 feet above normal.
Wilmington, N. C.	26	29.61	1326 e.	32 NE	0140 e.	54	0040e.	2.20	
Hatteras, N. C.	26	29.66	1630 e.	52 NE	0243 e.			3.42	Sea tide on highway from Oregon Inlet to Hatteras.
Norfolk, Va.	26			56 NE	2030 e.	61	2025e	2.69	Tide 7.2 feet above mean low water (4.5 feet above normal) sent 2 1/2 feet of water over downtown streets at 0140 e. on 27th.
	27	29.79	0120 e.						
Richmond, Va.	27	29.94	0330 e.	37 NE	0010 e.			1.50	River 4 feet above normal due to tidal action at 8 a.m. on 27th.

† c. Indicates central standard time and e. eastern standard time; i.e. 0230 c. is 2:30 a.m., c.s.t. and 1547 e. is 3:47 p.m., e.s.t.

* Estimated

TABLE 2

TRACK OF HURRICANE FLOSSY
SEPTEMBER 21–28, 1956

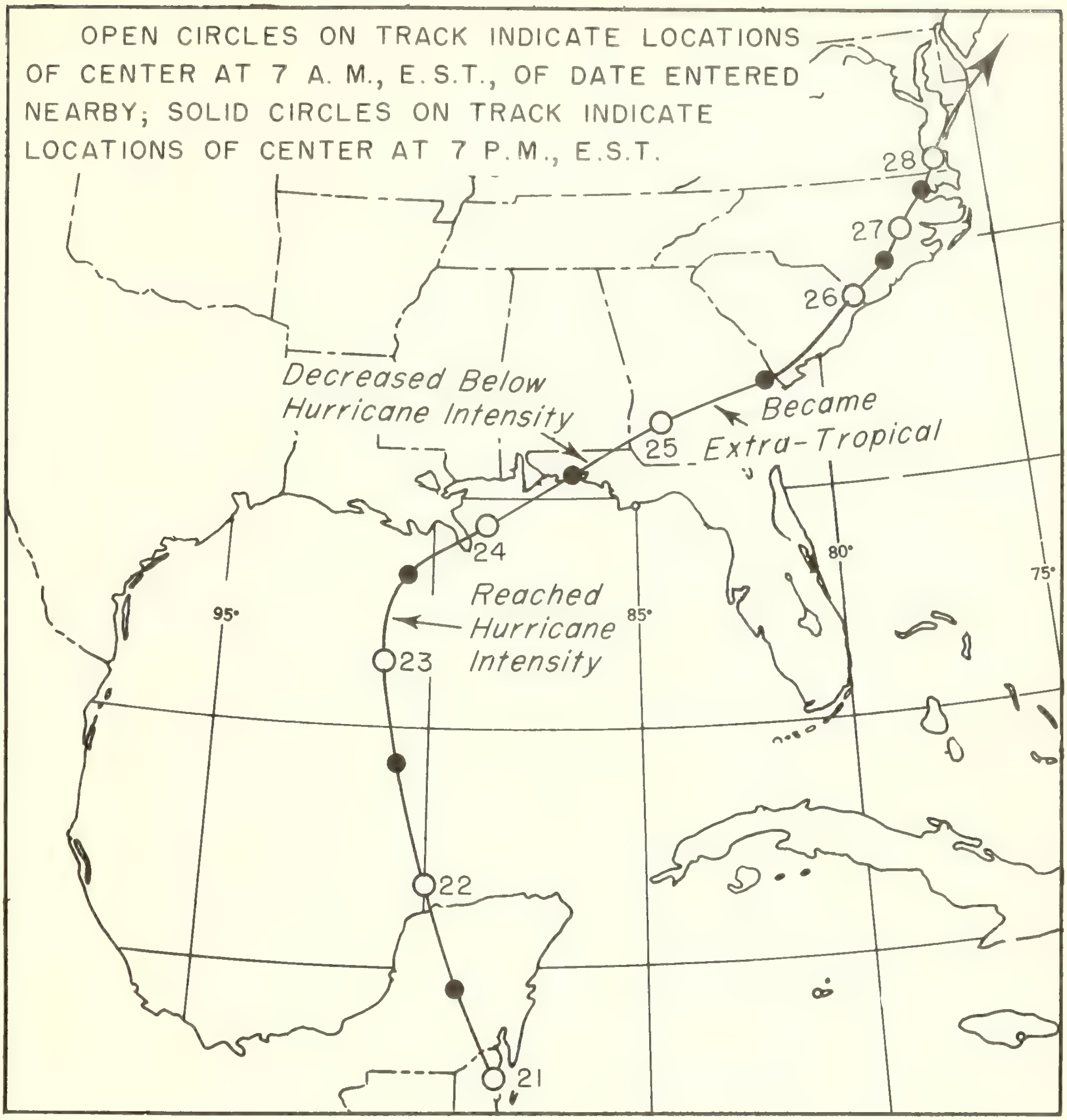
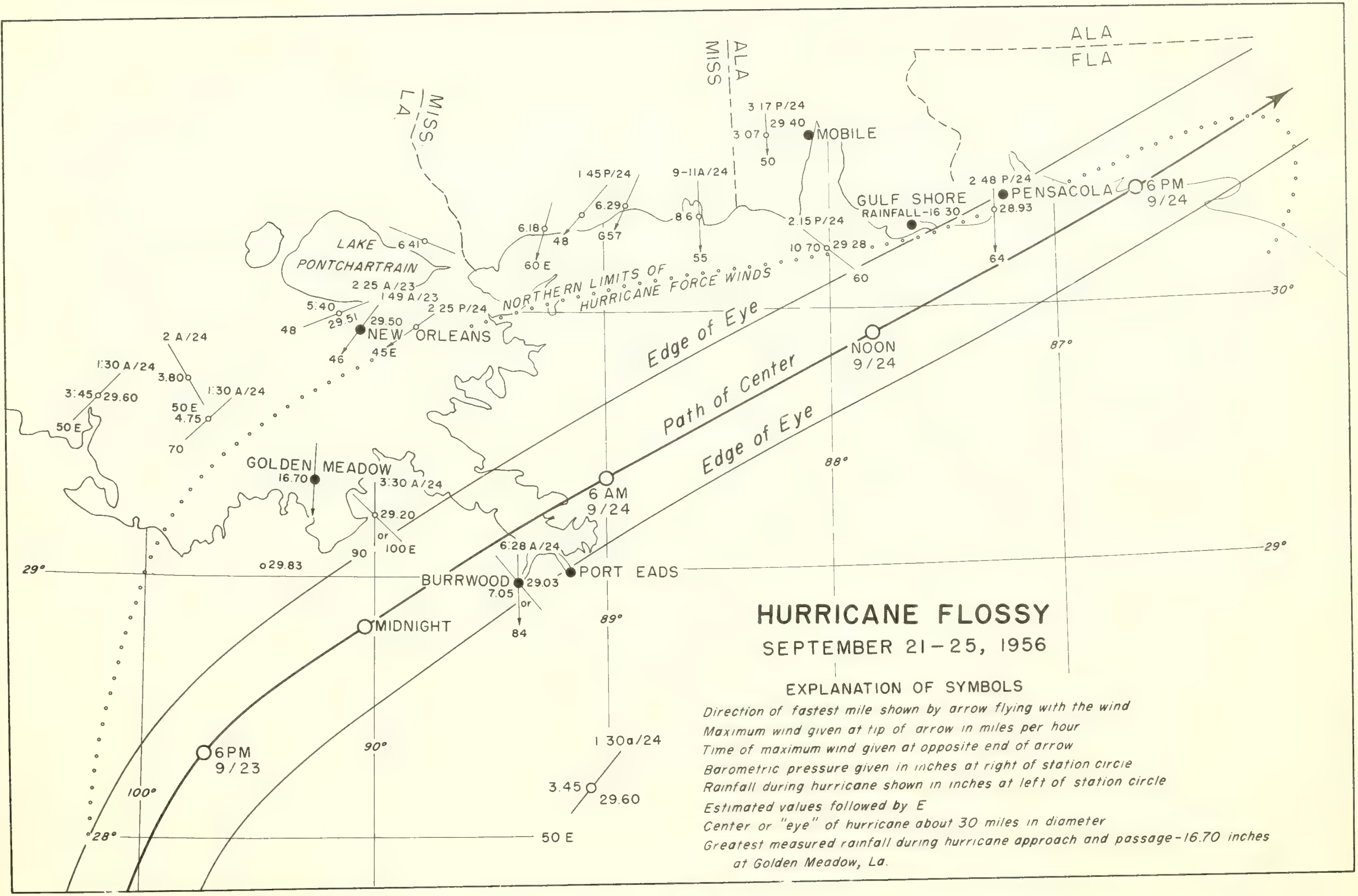

OPEN CIRCLES ON TRACK INDICATE LOCATIONS OF CENTER AT 7 A. M., E.S.T., OF DATE ENTERED NEARBY; SOLID CIRCLES ON TRACK INDICATE LOCATIONS OF CENTER AT 7 P.M., E.S.T.
28
27
26
Decreased Below Hurricane Intensity
Became Extra-Tropical
25
24
Reached Hurricane Intensity
23
22
21
95°
85°
80°
75°

FIGURE 1



HURRICANE FLOSSY

SEPTEMBER 21-25, 1956

EXPLANATION OF SYMBOLS

Direction of fastest mile shown by arrow flying with the wind
Maximum wind given at tip of arrow in miles per hour
Time of maximum wind given at opposite end of arrow
Barometric pressure given in inches at right of station circle
Rainfall during hurricane shown in inches at left of station circle
Estimated values followed by E
Center or "eye" of hurricane about 30 miles in diameter
Greatest measured rainfall during hurricane approach and passage - 16.70 inches at Golden Meadow, La.

FIGURE 2

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

SEPTEMBER 1956

Flooding during September was very minor and sparce. A record low stage was reached on the Arkansas River and near record low stages were reported on the Kansas River during the month.

ATLANTIC SLOPE DRAINAGE

The only significant flood threat during September along the Atlantic coast occurred in connection with hurricane "Flossy" as it moved inland near Burrwood, La., during the night of the 23d-24th, northeastward across the Panhandle of Florida, southern Georgia, and along the coastal sections of the Carolinas.

Near drought conditions existed over most of the Carolinas and Georgia prior to the heavy hurricane rains (3 to 7 inches) of the 24th to the 28th. Streams and reservoirs were unusually low. The dry condition of the soil and the relatively slow rate of rainfall contributed to small runoff. In South Carolina, reservoirs on the Wateree-Catawba Rivers contained the excess with no flood stage being reached on these rivers. On the Broad River some minor tributaries exceeded bankfull stage. The Saluda River exceeded bankfull stage slightly on the 26th at Pelzer, S. C.; however, reservoirs at Lake Greenwood and Lake Murray contained the excess so no further flooding occurred on this stream. The High Rock Reservoir on the Yadkin River stored almost all of the runoff over the Yadkin and South Yadkin Rivers, rising 32 feet to within 2 feet of full pond. The lower reservoirs controlled the remaining runoff and only a moderate rise occurred along the Pee Dee River.

The only flooding in eastern North Carolina from the heavy hurricane rains was on the Cape Fear River at Elizabethtown. The river at that point exceeded bankfull stage by 2.1 feet between the 29th and 30th.

EAST GULF OF MEXICO DRAINAGE

Although the rains were heavy along the path of hurricane "Flossy" between the 24th and the 26th no flooding occurred as the ground was dry prior to the occurrence of the rains. The heavy rains were also spread over a 48-hour period and fell slowly enough so that excessive filling of rivers did not result. Rain totals ranged from about 2.5 inches in the upper reaches of the Chattahoochee River to more than 8.5 inches between West Point and Griffin, Ga., and also around Eufaula, Ala.

MISSISSIPPI SYSTEM

Missouri Basin.--Stages on the Kansas River reached a near record low during September. A discharge measurement at Turner, Kans., showed a flow of 290 c.f.s. while the record low flow for Bonner Springs, Kans., is 260 c.f.s. on February 20, 1939. Many smaller streams in the Kansas River Basin have ceased flow or have only a very slight flow.

Arkansas Basin.--The Arkansas River reached a record low stage of -4.85 feet at Little Rock, Ark., on the 18th.

WEST GULF OF MEXICO DRAINAGE

Locally heavy rains of 2 to 4 inches on the 1st and 2d caused flooding on the Atascosa and lower Frio watersheds in Texas on the 2d and 3d. Flood stage was exceeded by 9.4 feet on the Frio River at Calliham, Tex., between the 2d and 3d. Locally heavy rains of 1 to 3 inches on the 5th and 6th caused flooding in the lower Nueces below Mathis Dam, Tex., from the 3d to the 9th.

FLOOD STAGE DATA

Table 5 (All dates in September unless otherwise specified) SEPTEMBER 1956

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
	Ft.			Ft.	
ATLANTIC SLOPE DRAINAGE					
Cape Fear: Elizabethtown, N. C.	20	29	30	22.1	29
Saluda: Pelzer, S. C.	6	26	26	6.3	26
Broad: Blair, S. C.	14	27	28	15.7	27
Ocmulgee: Macon, Ga.	18	26	26	18.0	26

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
	Ft.			Ft.	
WEST GULF OF MEXICO DRAINAGE					
Frio: Calliham, Tex	12	2	3	21.4	3
Atascosa: Whitsett, Tex.	20	3	3	22.1	3
Nueces: Calallen, Tex.	7	6	8	7.3	7

* Provisional

RAWINSONDE DATA

Average monthly values

Table 20

SEPTEMBER 1956

ALBANY, N. Y.
(1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	86	12.3	86	225	2.5
1,000	30	148	13.9	76	222	1.7
950	30	585	12.8	67	244	6.2
900	30	1,034	10.1	69	265	7.4
850	30	1,507	7.5	66	268	12.2
800	30	2,005	5.2	57	273	12.6
750	30	2,537	2.6	53	262	14.2
700	30	3,085	- .1	49	268	17.1
650	30	3,681	- 3.0		270	20.2
600	30	4,307	- 6.0		268	22.9
550	30	4,986	-10.1		264	26.2
500	29	5,707	-14.7		260	28.7
450	29	6,506	-20.0		259	32.4
400	28	7,366	-26.0		258	34.2
350	28	8,318	-32.9		254	41.2
300	28	9,384	-41.1		256	49.5
250	28	10,597	-49.9		254	55.9
200	28	12,031	-56.3		256	55.2
175	27	12,868	-57.5		256	50.3
150	26	13,840	-59.1		261	45.5
125	26	14,975	-61.0		263	41.0
100	26	16,362	-60.6		261	32.2
80	25	17,755	-58.9		255	21.0
60	23	19,566	-55.8		252	12.8
50	21	20,731	-54.7		250	7.0
40	19	22,163	-53.7		213	1.9
30	17	24,011	-52.8		126	3.7
20	13	26,642	-50.9			

ALBUQUERQUE, N. MEX.
(839 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,619	24.4	21	136	5.6
1,000	30	44				
950	30	512				
900	30	996				
850	30	1,506				
800	30	2,038	23.5		206	5.6
750	30	2,596	18.7		227	6.0
700	30	3,182	13.5	28	257	5.1
650	30	3,801	7.9	34	286	5.4
600	30	4,453	2.2	39	298	7.0
550	30	5,146	- 3.8	40	299	9.1
500	30	5,892	- 9.8	40	293	10.7
450	30	6,707	-15.0		304	9.5
400	30	7,578	-21.1		315	11.7
350	30	8,549	-28.6		306	12.6
300	30	9,632	-37.2		311	12.6
250	30	10,866	46.1		310	19.2
200	30	12,318	-55.1		305	27.6
175	30	13,160	-59.7		301	29.9
150	30	14,110	-64.7		299	27.0
125	30	15,209	-69.4		294	20.2
100	28	16,534	-71.6		294	13.4
80	28	17,858	-68.2		316	7.4
60	25	19,612	-61.2		52	3.5
50	25	20,751	-58.4		85	7.6
40	25	22,163	-55.5		84	9.3
30	25	24,006	-53.3		86	15.9
20	13	26,631	-50.4			

ANCHORAGE, ALASKA
(1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	30	11.5	53	202	1.2
1,000	30	89			201	1.6
950	30	513	7.2	60	139	2.3
900	30	955	4.2	61	149	3.7
850	30	1,418	1.3	62	164	3.7
800	30	1,903	1.8	64	191	3.5
750	30	2,423	- 4.4	62	215	6.0
700	30	2,956	- 7.0	55	242	8.7
650	30	3,537	-10.0	50	245	11.1
600	30	4,144	-13.3	42	250	11.7
550	30	4,802	-17.2	39	251	12.2
500	30	5,508	-22.0	39	253	10.7
450	30	6,283	-27.5	40	259	14.4
400	30	7,112	-33.3	45	258	17.1
350	30	8,037	-39.3		259	22.1
300	30	9,077	-45.6		280	20.8
250	30	10,276	-50.4		287	24.7
200	30	11,726	-50.9		281	19.8
175	30	12,594	-51.2		287	16.9
150	30	13,595	-51.5		271	14.4
125	29	14,765	-51.5		266	12.8
100	28	16,207	-51.4		262	11.7
80	27	17,650	-50.3		266	8.2
60	25	19,513	-51.0		261	7.6
50	24	20,695	-51.8		267	7.6
40	17	22,162	-51.0			
30	9	24,069	-50.0			
20						

ANNETTE, ALASKA
(1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	37	13.1	72	241	1.7
1,000	30	138	12.7	71	266	1.7
950	30	568	10.0	69	286	2.1
900	30	1,014	7.3	69	280	2.3
850	30	1,482	4.7	70	272	3.3
800	30	1,974	2.2	68	272	6.0
750	30	2,499	- .4	61	272	9.9
700	30	3,042	- 3.3	58	273	12.6
650	30	3,630	- 6.7	51	279	13.8
600	30	4,246	-10.4	47	284	14.0
550	30	4,914	-14.4	45	279	16.9
500	30	5,627	-19.0	42	279	19.2
450	30	6,408	-24.2	40	279	22.5
400	30	7,252	-29.8	38	284	24.1
350	30	8,190	-36.7		273	22.3
300	30	9,240	-43.9		280	22.9
250	30	10,445	-50.2		280	19.0
200	29	11,890	-53.5		297	20.8
175	25	12,716	-52.9			
150	23	13,690	-53.2			
125	20	14,851	-54.0			
100	19	16,280	-53.8			
80	17	17,708	-54.0			
60	15	19,534	-54.5			
50	14	20,689	-54.8			
40	12	22,094	-54.6			
30						
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ATHENS, GA.
(989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	246	20.0	77	105	1.6
1,000	30	152				
950	30	598	20.5	63	117	3.7
900	30	1,063	17.7	65	117	2.7
850	30	1,549	14.5	63	148	1.6
800	30	2,059	11.9	56	251	1.4
750	30	2,601	9.0	54	305	.8
700	30	3,166	6.1	48	299	2.3
650	29	3,776	2.9	45	310	3.1
600	39	4,414	- .9	43	307	4.7
550	29	5,105	- 5.1	39	299	6.2
500	27	5,850	- 9.4		289	9.1
450	27	6,664	-14.6		284	11.8
400	27	7,538	-20.9		273	13.6
350	26	8,508	-28.3		266	18.5
300	25	9,596	-36.6		265	23.7
250	24	10,840	-46.1		262	35.5
200	23	12,285	-56.3		261	38.9
175	21	13,120	-61.4		264	38.9
150	20	14,064	-64.8		264	34.6
125	19	15,170	-67.2		267	23.5
100	19	16,510	-67.9		273	20.8
80	17	17,854	-65.2		259	5.4
60	16	19,632	-60.6		103	1.6
50	16	20,771	-58.7		86	9.1
40	14	22,183	-56.0		91	12.6
30	10	24,020	-53.9		96	19.2
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BARROW, ALASKA
(1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	8	0.9	87	94	2.5
1,000	30	100	.7	85	132	2.5
950	30	518	- .4	80	183	4.1
900	30	944	- 1.6	75	201	5.6
850	30	1,397	- 3.5	70	220	6.6
800	30	1,874	- 6.1	66	222	6.6
750	30	2,384	- 8.7	61	226	9.1
700	30	2,908	-11.5	58	226	10.7
650	30	3,482	-14.6	54	217	13.0
600	30	4,075	-18.1	52	214	12.6
550	30	4,724	-22.3	51	215	12.0
500	30	5,414	-27.0	50	215	12.6
450	30	6,172	-32.3	47	222	14.4
400	30	6,986	-38.0		228	15.9
350	30	7,892	44.4		234	16.1
300	29	8,915	-50.5		229	16.7
250	29	10,096	-51.8		242	18.8
200	29	11,551	-49.0		245	20.6
175	28	12,432	-48.4		249	18.5
150	28	13,446	-48.4		252	18.3
125	28	14,644	-48.6		257	16.7
100	28	16,111	-48.6		256	17.9
80	28	17,578	-48.5		254	15.3
60	23	19,492	-49.1		258	9.3
50	22	20,694	-49.6		268	11.3
40	16	22,166	-50.3			
30	8	24,047	-49.8			
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BETHEL, ALASKA
(1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	10.1	72	28	1.2
1,000	30	73			87	.6
950	30	501	6.1	72	124	1.9
900	30	937	3.2	74	161	3.3
850	30	1,398	.5	73	177	3.5
800	30	1,883	- 1.8	66	197	4.5
750	30	2,400	- 4.0	58	209	5.8
700	30	2,936	- 6.7	53	227	5.2
650	30	3,518	- 9.7	49	234	4.7
600	30	4,126	-13.2	46	247	6.6
550	29	4,795	-16.5	43	247	8.0
500	29	5,502	-21.0	41	257	8.9
450	29	6,278	-26.2	41	264	12.2
400	29	7,114	-31.8	42	260	15.3
350	29	8,045	-38.2		250	15.3
300	29	9,090	-45.0		255	19.2
250	28	10,282	-50.5		250	22.1
200	26	11,712	-50.4		254	23.5
175	26	12,584	-49.7		252	25.1
150	26	13,592	-49.7		262	20.8
125	25	14,781	-49.8		256	16.9
100	24	16,235	-49.5		262	17.1
80	21	17,695	-49.2		254	14.6
60	18	19,592	-49.4		235	10.1
50	15	20,785	-49.6		257	12.2
40	9	22,232	-49.7			
30	5	24,147	-49.2			
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BISMARCK, N. DAK.
(956 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	505	12.2	71	114	2.9
1,000	30	124				
950	30	563			105	3.1
900	30	1,016	13.9	52	255	2.1
850	30	1,495	11.1	51	292	8.2
800	30	1,999	8.1	50	297	14.2
750	30	2,535	4.7	50	296	21.8
700	30	3,087	1.2	43	297	24.5
650	30	3,684	- 2.6	43	291	25.3
600	30	4,310	- 6.4	42	293	27.0
550	30	4,986	-10.6	42	292	30.7
500	30	5,711	-15.4	40	290	33.8
450	30	6,509	-20.6	39	290	36.7
400	30	7,359	-26.9	39	284	36.9
350	30	8,307	-34.4		282	43.5
300	30	9,366	-42.7		273	44.9
250	30	10,570	-51.5		255	47.0
200	30	11,999	-56.5			
175	30	12,844	-57.0			
150	30	13,818	-57.8			
125	30	14,964	-58.5			
100	29	16,364	-59.2			
80	28	17,763	-58.5			
60	28	19,579	-56.7			
50	28	20,736	-55.7			
40	27	22,158	-54.2			
30	26	24,012	-51.7			
20	14	26,686	-48.7			
15	6	28,612	-47.3			

BOISE, IDAHO
(915 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	868	19.2	38	259	2.1
1,000	30	90				
950	30	542				
900	30	1,009	22.4	25	296	3.3
850	30	1,504	20.1	22	352	5.6
800	30	2,023	16.2	23	318	5.8
750	30	2,576	11.9	26	288	9.3
700	30	3,139	7.3	28	263	12.8
650	30	3,748	2.8	30	258	17.5
600	30	4,386	- 2.1	33	256	20.2
550	30	5,072	- 7.0	33	255	23.1
500	30	5,808	-11.9		257	26.8
450	30	6,614	-17.3		254	28.7
400	30	7,479	-23.7		254	34.0
350	30	8,439	-31.3		260	34.2
300	30	9,512	-39.8		258	33.2
250	30	10,732	-48.9		270	29.9
200	30	12,170	-56.5		277	38.9
175	29	13,011	-59.1		275	35.9
150	28	13,977	-60.8			
125	27	15,102	-62.7			
100	25	16,475	-63.7			
80	25	17,850	-61.8			
60	25	19,641	-59.2			
50	24	20,790	-57.5			
40	22	22,201	-55.5			
30	20	24,042	-52.0			
20	9	26,689	-48.1			
15						

BROWNSVILLE, TEX.
(1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	7	25.1	85	99	6.0
1,000	29	128	26.3	78	94	8.9
950	29	580	23.7	74	93	13.6
900	29	1,052	21.3	61	89	12.6
850	29	1,545	18.5	53	78	10.1
800	29	2,062	15.2	49	67	9.1
750	29	2,605	11.8	44	62	9.3
700	29	3,180	8.1	45	63	7.8
650	29	3,789	4.6	39	69	8.0
600	28	4,436	1.3		66	9.7
550	28	5,133	- 2.6		75	7.0
500	28	5,881	- 7.3		57	7.6
450	27	6,702	-12.6		44	7.6
400	27	7,582	-18.9		15	6.6
350	26	8,561	-25.8		341	7.0
300	26	9,658	-34.1		316	9.7
250	26	10,909	-43.2		310	13.0
200	26	12,377	-54.0		297	13.8
175	26	13,221	-59.9		313	11.5
150	26	14,169	-65.8		334	10.9
125	25	15,261	-70.6		3	6.4
100	24	16,573	-72.9		36	4.5
80	23	17,889	-70.3		59	8.0
60	22	19,627	-63.2		81	17.1
50	21	20,752	-60.6		89	24.3
40	21	22,150	-57.5		93	31.3
30	20	23,974	-54.2		89	32.4
20	13	26,582	-50.9			
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BUFFALO, N. Y.
(996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	182	13.6	79	245	2.3
1,000	30	144			75	1.9
950	30	577	13.5	68	240	6.8
900	30	1,032	10.3	68	256	10.1
850	29	1,503	7.3	64	262	12.4
800	29	2,000	4.8	56	271	15.9
750	29	2,531	2.2	47	272	17.3
700	29	3,079	- .5	41	271	20.4
650	29	3,671	- 3.5	42	275	23.5
600	29	4,297	- 7.2	39	279	26.0
550	29	4,970	-11.1	40	276	28.4
500	29	5,697	-15.9	37	274	32.1
450	29	6,490	-21.0		271	36.3
400	29	7,343	-27.0	35	272	40.0
350	28	8,285	-34.5		271	42.3
300	28	9,345	-42.2		269	43.9
250	28	10,556	-49.7		268	49.5
200	28	11,994	-55.7		265	51.3
175	28	12,843	-56.7		267	49.3
150	27	13,818	-58.3		268	46.6
125	27	14,961	-59.7		263	34.6
100	26	16,353	-59.7		262	28.0
80	26	17,752	-58.3		262	21.2
60	23	19,569	-55.7		259	10.5
50	22	20,725	-54.6		253	8.4
40	22	22,156	-53.2		248	4.9
30	18	24,016	-52.0		201	2.1
20	14	26,661	-50.2		96	3.9
15	6	28,504	-48.0			

BURRWOOD, LA.
(1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	3	25.3	81	103	6.6
1,000	29	139	24.6	75	89	7.8
950	29	590	21.5	73	79	10.1
900	29	1,056	18.8	68	84	10.3
850	29	1,544	15.9	64	81	9.7
800	29	2,058	13.2	54	74	9.3
750	29	2,599	10.2	51	76	9.3
700	29	3,169	7.1	48	64	6.8
650	29	3,779	3.7	44	60	5.1
600	29	4,421	.3	42	44	4.9
550	29	5,112	- 3.9	41	32	3.3
500	29	5,859	- 8.6		3	2.7
450	29	6,676	-14.1		325	4.3
400	29	7,550	-20.7		293	6.4
350	29	8,523	-27.9		265	8.7
300	28	9,610	-35.9		264	15.2
250	28	10,851	-45.3		248	21.8
200	27	12,304	-55.6		248	25.3
175	26	13,143	-61.3		252	26.0
150	26	14,088	-66.0		258	17.1
125	23	15,184	-69.9		304	7.0
100	17	16,496	-70.8			
80	17	17,824	-67.9			
60	17	19,577	-62.5			
50	17	20,708	-59.5			
40	13	22,120	-56.4			
30	11	23,982	-52.7			
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CARIBOU, ME.
(994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	191	9.1	88	222	3.1
1,000	30	143				
950	30	576	9.7	70	236	9.1
900	30	1,017	7.2	69	257	9.7
850	30	1,486	4.5	71	262	12.4
800	30	1,978	2.1	66	260	13.4
750	30	2,505	- .2	59	257	15.0
700	30	3,047	- 2.7	54	255	17.3
650	30	3,635	- 6.0	50	257	20.8
600	28	4,257	- 8.9	49	256	22.5
550	28	4,930	-12.7	45	257	27.0
500	26	5,639	-17.4		255	31.5
450	26	6,432	-22.5	40	254	37.1
400	26	7,276	-28.2		256	43.3
350	26	8,219	-35.5		254	47.6
300	26	9,274	-43.2		259	51.9
250	24	10,452	-50.6		254	60.8
200	23	11,877	-54.1		258	60.4
175	22	12,734	-55.6		257	53.8
150	22	13,714	-56.3		259	48.2
125	20	14,861	-56.9		257	44.7
100	19	16,274	-56.5		260	29.3
80	17	17,696	-55.5		251	25.4
60	15	19,535	-53.7		255	15.2
50	14	20,701	-52.7		239	10.1
40	13	22,142	-52.4		223	6.4
30	10	24,009	-50.9		215	5.2
20	9	26,676	-48.4			
15	7	28,551	-46.8			

CHARLESTON, S. C.
(1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	13	19.5	91	28	1.0
1,000	30	152	22.1	80	95	2.3
950	30	603	20.5	72	147	3.9
900	30	1,065	17.9	70	163	2.7
850	30	1,553	15.3	66	201	1.7
800	30	2,065	12.7	62	199	1.4
750	30	2,612	10.1	55	208	1.7
700	30	3,177	7.0	45	235	2.9
650	30	3,790	3.7	45	253	5.4
600	30	4,429	.1	39	265	5.6
550	30	5,128	- 3.7		267	7.8
500	30	5,868	- 8.4		253	9.9
450	30	6,691	-13.9		250	13.2
400	30	7,563	-20.1		254	16.9
350	30	8,539	-27.4		257	17.7
300	30	9,630	-35.8		260	22.3
250	30	10,872	-45.2		259	28.7
200	30	12,329	-55.4		257	32.1
175	30	13,171	-60.3		265	34.4
150	30	14,121	-64.7		274	24.3
125	30	15,225	-67.7		275	16.7
100	30	16,561	-68.6		262	13.4
80	29	17,911	-64.8		217	4.3
60	28	19,682	-60.5		68	2.9
50	27	20,824	-58.2		80	10.7
40	27	22,235	-55.9		97	17.7
30	23	24,073	-53.7		95	22.0
20	16	26,718	-49.6			
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COLD BAY, ALASKA
(1006 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	29	10.1	84	161	11.7
1,000	30	78			160	8.0
950	30	505	7.1	83	172	8.0
900	30	946	4.9	83	182	7.8
850	30	1,411	3.1	75	211	11.3
800	30	1,901	1.0	69	219	12.8
750	30	2,425	- 1.1	62	217	15.3
700	30	2,966	- 3.5	53	225	15.0
650	30	3,551	- 6.4	44	227	14.8
600	30	4,170	- 9.9		226	18.1
550	29	4,839	-14.1		233	19.6
500	29	5,552	-18.7		223	25.8
450	29	6,339	-23.8		223	30.9
400	29	7,179	-29.7		233	28.7
350	28	8,124	-36.0		244	29.1
300	28	9,178	-42.8		244	35.9
250	28	10,388	-49.0			
200	27	11,835	-51.9			
175	25	12,689	-52.3			
150	25	13,686	-52.5			
125	25	14,863	-52.6			
100	25	16,304	-52.3			
80	23	17,748	-52.0			
60	19	19,614	-51.7			
50	17	20,789	-51.7			
40	16	22,232	-51.7			
30	15	24,106	-51.3			
20						
15						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	COLUMBIA, MO. (988 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	238	20.3	48	129	2.9
1,000	30	134				
950	30	583	21.6	42	180	5.2
900	30	1,047	19.2	42	233	7.8
850	30	1,536	16.4	39	251	10.3
800	30	2,049	13.3	40	270	12.6
750	30	2,593	9.7	45	279	15.3
700	30	3,158	6.2	46	291	17.7
650	30	3,764	2.4	42	297	20.4
600	30	4,404	- 1.8	41	300	22.5
550	29	5,087	- 6.5	39	301	22.7
500	29	5,827	-11.5	35	299	24.9
450	29	6,634	-16.9		299	26.8
400	29	7,501	-22.9		295	28.6
350	29	8,463	-30.7		292	30.9
300	29	9,537	-39.3		295	33.6
250	29	10,759	-48.5		290	35.7
200	29	12,195	-57.1		287	37.7
175	29	13,033	-59.9		288	37.3
150	29	13,989	-62.3		286	36.3
125	28	15,104	-64.6		285	31.1
100	28	16,462	-65.0		288	23.3
80	28	17,826	-62.9		287	13.2
60	26	19,612	-58.6		297	4.7
50	24	20,758	-56.7		277	1.7
40	21	22,177	-54.7		105	2.5
30	16	24,036	-52.3		84	3.7
20						
15						

Standard pressure surface (mb.)	DAYTON, OHIO (983 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	29	297	16.5	66	159	1.2
1,000	29	154				
950	29	595	17.2	55	202	3.9
900	29	1,052	14.4	55	252	7.2
850	29	1,533	11.5	53	275	11.8
800	29	2,037	9.0	43	286	15.0
750	29	2,576	6.5	37	287	15.7
700	29	3,132	3.5		286	17.9
650	29	3,735	.3		287	20.8
600	29	4,367	- 3.6	35	285	25.4
550	29	5,051	- 7.8		286	25.3
500	28	5,787	-12.3		283	27.6
450	28	6,592	-17.7		283	28.6
400	28	7,455	-23.9		280	30.1
350	28	8,415	-31.2		279	32.2
300	28	9,488	-39.4		276	37.3
250	28	10,711	-48.5		269	44.7
200	27	12,149	-56.6		265	50.5
175	27	12,989	-59.4		270	48.0
150	26	13,951	-61.8		272	43.3
125	26	15,073	-63.7		271	35.0
100	26	16,441	-63.6		271	25.4
80	26	17,818	-61.0		272	14.4
60	24	19,625	-57.6		266	7.2
50	23	20,780	-55.4		59	.6
40	22	22,202	-53.9		102	5.8
30	15	24,049	-52.6		80	9.7
20						
15						

Standard pressure surface (mb.)	DENVER, COLO. (840 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	29	1,608	17.7	35	164	2.9
1,000	29	77				
950	29	537				
900	29	1,008				
850	29	1,506				
800	29	2,029	19.5	31	161	5.2
750	29	2,583	15.4	33	201	4.5
700	29	3,160	10.8	37	237	7.2
650	29	3,773	6.0	38	261	10.5
600	29	4,422	.7	41	271	14.8
550	29	5,109	- 5.3	48	269	18.8
500	29	5,853	-11.3	51	271	22.0
450	28	6,658	-17.2	42	279	25.3
400	28	7,524	-23.3		290	29.3
350	28	8,485	-30.9		296	31.7
300	28	9,559	-39.4		299	35.4
250	28	10,780	-48.8		300	38.9
200	27	12,215	-57.3		299	44.3
175	27	13,053	-59.9		297	46.0
150	27	14,007	-63.1		294	39.8
125	27	15,121	-65.8		289	32.2
100	26	16,474	-67.5		289	24.3
80	25	17,823	-64.5		296	15.0
60	23	19,600	-59.8		293	5.1
50	23	20,743	-57.6		311	4.1
40	23	22,157	-55.4		343	1.4
30	23	24,004	-52.5		107	2.7
20	17	26,649	-49.4		55	6.2
15	8	28,519	-48.3			

Standard pressure surface (mb.)	DODGE CITY, KANS. (925 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	792	22.9	29	138	8.2
1,000	30	102				
950	30	560				
900	30	1,032	24.2	31	155	13.6
850	30	1,529	21.2	33	177	14.2
800	30	2,050	18.1	37	205	13.0
750	30	2,600	14.5	37	241	11.7
700	30	3,178	10.3	34	271	11.7
650	30	3,792	5.7	32	277	12.6
600	30	4,438	.5	32	292	15.0
550	30	5,128	- 4.9	32	292	17.1
500	30	5,871	-10.2		299	19.8
450	30	6,677	-15.8		300	18.8
400	30	7,551	-22.3		303	22.0
350	30	8,516	-30.1		303	23.1
300	29	9,593	-38.7		299	25.6
250	29	10,819	-47.9		301	27.2
200	29	12,259	-56.9		299	33.6
175	29	13,096	-60.5		295	32.8
150	28	14,048	-63.9		294	29.3
125	28	15,154	-67.1		292	28.9
100	28	16,494	-68.2		293	21.8
80	28	17,840	-65.6		298	16.1
60	22	19,614	-59.6		310	5.6
50	21	20,756	-57.2		284	5.1
40	18	22,176	-54.8		62	2.3
30	6	23,975	-54.0			
20						
15						

Standard pressure surface (mb.)	EL PASO, TEX. (882 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,195	25.9	28	130	5.1
1,000	30	65				
950	30	531				
900	30	1,015				
850	30	1,522	26.7	22	144	9.3
800	30	2,053	22.3	24	137	7.4
750	30	2,612	17.5	27	140	7.4
700	30	3,192	12.3	33	125	5.6
650	30	3,811	7.1	38	103	5.2
600	30	4,460	1.8	39	44	5.2
550	30	5,154	- 3.3	36	36	7.2
500	30	5,902	- 8.4		25	6.2
450	30	6,721	-13.7		36	6.0
400	30	7,596	-20.3		11	5.2
350	30	8,572	-27.3		320	7.6
300	30	9,663	-35.4		310	12.4
250	30	10,907	-44.3		305	18.3
200	29	12,369	-54.5		321	18.5
175	29	13,212	-60.0		308	16.9
150	28	14,160	-66.0		310	17.3
125	26	15,250	-71.1		324	9.5
100	25	16,558	-73.7		316	3.7
80	22	17,873	-70.1		41	2.9
60	21	19,616	-62.0		85	11.5
50	21	20,752	-59.0		86	15.7
40	21	22,158	-56.6		96	16.3
30	16	23,988	-53.7		90	16.9
20	7	26,608	-49.7			
15						

Standard pressure surface (mb.)	ELY, NEV. (811 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,908	17.2	24	193	5.1
1,000	30	68				
950	30	523				
900	30	1,001				
850	30	1,500				
800	30	2,024	20.9	21	197	5.8
750	30	2,585	17.3	23	224	8.0
700	30	3,161	12.1	26	227	9.5
650	30	3,780	6.6	32	233	10.9
600	30	4,425	.9	37	242	10.9
550	30	5,121	- 4.5	39	252	11.3
500	30	5,861	- 9.6		259	13.8
450	30	6,677	-14.9		263	20.0
400	30	7,546	-21.3		258	23.1
350	30	8,516	-28.9		259	24.9
300	30	9,599	-37.6		262	27.2
250	30	10,831	-46.7		275	27.4
200	30	12,280	-55.5		280	35.9
175	30	13,123	-59.4		279	39.8
150	29	14,079	-63.0		279	38.9
125	29	15,191	-66.3		272	29.9
100	29	16,538	-67.5		276	18.6
80	29	17,889	-64.6		305	10.7
60	28	19,670	-59.8		359	5.1
50	28	20,816	-57.2		15	4.5
40	27	22,239	-54.5		37	4.5
30	22	24,097	-52.0			
20						
15						

Standard pressure surface (mb.)	FAIRBANKS, ALASKA (996 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	135	9.9	63	305	1.6
1,000	30	98				
950	30	519	6.8	55	286	1.4
900	30	963	3.5	59	211	1.0
850	30	1,423	.0	64	205	2.9
800	30	1,906	- 3.0	65	222	4.9
750	30	2,420	- 5.7	63	207	4.5
700	30	2,953	- 8.4	58	219	6.0
650	30	3,529	-11.9	54	235	7.6
600	30	4,132	-15.5	47	232	8.4
550	30	4,784	-19.5	47	236	10.3
500	30	5,484	-24.0	45	243	14.8
450	30	6,253	-29.7	41	240	16.7
400	30	7,074	-35.1		245	13.0
350	30	7,990	-42.2		248	14.2
300	29	9,022	-48.5		260	14.6
250	29	10,211	-50.9		267	11.5
200	29	11,665	-49.8		280	12.6
175	29	12,537	-49.8		277	11.8
150	29	13,543	-50.2		275	10.5
125	28	14,739	-50.5		253	11.7
100	24	16,209	-50.7		251	11.3
80	22	17,676	-50.6		194	7.6
60	21	19,565	-50.4		265	10.1
50	21	20,753	-50.6		232	9.5
40	20	22,197	-50.7			
30	15	24,093	-49.7			
20						
15						

Standard pressure surface (mb.)	1/ FLINT, MICH. (991 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	12	234	9.4		152	2.7
1,000	12	157				
950	12	587	13.4		220	6.0
900	12	1,040	10.2		231	10.9
850	12	1,513	7.4		259	14.0
800	12	2,009	4.6		271	18.3
750	12	2,537	1.8		280	18.5
700	12	3,086	- .4		287	21.4
650	12	3,678	- 3.6		291	25.8
600	12	4,302	- 7.9		290	27.8
550	12	4,973	-12.3		292	28.9
500	12	5,693	-17.2		289	29.5
450	12	6,479	-22.9		295	36.3
400	12	7,327	-28.9		293	40.2
350	12	8,269	-35.5		300	42.7
300	12	9,323	-42.0		298	44.7
250	12	10,532	-50.2		291	44.7
200	12	11,961	-56.1		280	49.0
175	12	12,806	-56.5		277	49.0
150	12	13,778	-58.1		285	44.3
125	9	14,906	-59.1			
100	7	16,268	-58.3			
80	7	17,671	-57.4			
60	6	19,488	-55.1			
50	5	20,652	-53.9			
40						
30						
20						
15						

Standard pressure surface (mb.)	FORT WORTH, TEX. (994 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	178	27.2	43	136	4.1
1,000	30	127				
950	30	584	27.1	34	141	13.4
900	30	1,057	23.3	39	154	10.7
850	30	1,552	19.2	45	163	8.0
800	30	2,069	15.0	50	182	3.5
750	30	2,620	11.9	40	135	.2
700	30	3,187	8.6	37	9	4.3
650	30	3,804	4.6	32	5	7.8
600	30	4,442	.0	28	12	9.9
550	30	5,138	4.3		7	11.3
500	30	5,878	- 9.1		356	12.0
450	30	6,697	-14.9		349	12.6
400	30	7,563	-21.5		333	11.1
350	30	8,531	-29.3		303	10.7
300	30	9,611	-37.5		303	13.6
250	30	10,843	-46.3		288	18.8
200	30	12,292	-55.6		298	23.5
175	30	13,133	-59.9		300	23.3
150	30	14,083	-64.5		299	20.4
125	30	15,185	-68.5		293	18.3
100	30	16,511	-70.3		299	13.0
80	29	17,847	-67.1		310	3.9
60	29	19,607	-60.6		72	5.1
50	29	20,747	-58.2		94	9.9
40	29	22,159	-55.7		89	14.0
30	29	24,002	-52.9		84	18.6
20	20	26,646	-49.5		87	25.6
15	12	28,543	-46.6			

Standard pressure surface (mb.)	GLASGOW, MONT. (934 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	695	14.5	50	73	3.1
1,000	30	107				
950	30	552				
900	30	1,010	16.0	44	27	2.1
850	30	1,492	13.0	46	292	5.4
800	30	1,999	9.0	50	283	10.1
750	30	2,534	5.3	51	292	15.5
700	30	3,090	1.5	53	288	22.5
650	30	3,685	- 2.2	52	293	26.6
600	30	4,314	- 6.2	52	292	27.2
550	30	4,988	-10.4	48	289	27.8
500	30	5,715	-15.4	44	291	33.2
450	29	6,506	-21.1	44	290	37.1
400	29	7,356	-27.5	41	287	37.7
350	29	8,303	-34.4		288	37.3
300	29	9,362	-42.2		283	40.6
250	29	10,571	-50.7		272	41.8
200	29	12,001	-56.5		280	39.4
175	29	12,847	-56.5		286	35.9
150	27	13,823	-57.1		277	46.8
125	25	14,968	-58.5			
100	24	16,365	-58.0			
80	23	17,772	-57.4			
60	21	19,603	-56.2			
50	19	20,759	-55.5			
40	16	22,186	-54.5			
30	12	24,038	-51.2			
20						
15						

Standard pressure surface (mb.)	GRAND JUNCTION, COLO. (852 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,474	23.1	16	32	1.2
1,000	30	46				
950	30	506				
900	30	988				
850	30	1,494			354	1.7
800	30	2,025	23.3		273	4.7
750	30	2,587	18.4	19	272	7.4
700	30	3,166	13.0	23	271	7.4
650	30	3,788	7.4	28	261	7.6
600	30	4,435	1.5	34	254	10.3
550	30	5,128	- 4.4	39	258	11.7
500	30	5,871	- 9.8	37	271	14.4
450	30	6,686	-15.1		275	19.6
400	30	7,556	-21.6		275	23.5
350	30	8,523	-29.5		276	25.8
300	30	9,603	-38.3		285	29.9
250	30	10,831	-47.4		292	34.2
200	30	12,275	-56.1		297	40.4
175	30	13,116	-59.8		297	46.0
150	29	14,071	-63.1		291	46.8
125	28	15,187	-66.6		293	37.5
100	27	16,525	-68.0			
80	25	17,872	-65.0			
60	23	19,651	-59.1			
50	23	20,800	-56.7			
40	21	22,222	-54.5			
30	14	24,059	-52.0			
20						

Standard pressure surface (mb.)	GREAT FALLS, MONT. (888 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,123	15.2	47	295	1.4
1,000	30	96				
950	30	542				
900	30	1,003				
850	30	1,493	15.0	41	270	2.5
800	30	2,002	11.5	43	275	8.4
750	30	2,539	7.6	46	268	13.4
700	30	3,102	3.1	51	269	17.7
650	30	3,698	- 1.3	53	275	21.0
600	30	4,331	- 5.4	53	279	25.4
550	30	5,006	- 9.9	49	276	30.1
500	30	5,736	-14.7	45	273	32.4
450	30	6,529	-20.0	43	271	33.2
400	30	7,388	-26.1	41	274	34.8
350	29	8,336	-33.6		274	37.9
300	29	9,399	-41.9		273	44.5
250	29	10,611	-49.7		278	45.3
200	29	12,048	-56.3		277	52.8
175	29	12,894	-57.3		279	48.2
150	29	13,867	-58.0		278	44.1
125	29	15,013	-59.4		280	36.3
100	27	16,414	-59.1		281	28.7
80	26	17,818	-59.0		291	18.5
60	25	19,627	-57.1		305	9.5
50	24	20,788	-56.1		325	5.4
40	23	22,204	-54.9		309	5.1
30	16	24,072	-52.3		279	3.3
20						

Standard pressure surface (mb.)	GREEN BAY, WIS. (991 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	210	11.8	85	273	2.7
1,000	30	131				
950	30	565	13.4	62	259	6.4
900	30	1,016	10.9	60	273	10.1
850	30	1,491	8.2	59	276	13.4
800	30	1,989	5.4	57	276	17.7
750	30	2,519	2.6	52	279	19.6
700	30	3,069	- .4	48	288	21.4
650	30	3,661	- 4.2	50	288	25.1
600	30	4,285	- 7.8	44	285	27.2
550	30	4,958	-11.6	39	285	31.5
500	30	5,680	-16.3	38	288	35.5
450	30	6,477	-21.5	34	282	34.2
400	30	7,323	-27.6		284	30.9
350	30	8,268	-34.9		283	32.6
300	30	9,325	-42.8		291	40.0
250	30	10,531	-50.9		288	32.8
200	30	11,963	-56.1			
175	30	12,810	-56.4			
150	30	13,785	-57.7			
125	30	14,932	-58.7			
100	30	16,331	-59.1			
80	30	17,732	-57.9			
60	30	19,554	-56.0			
50	28	20,713	-54.9			
40	25	22,147	-53.0			
30	19	24,012	-51.1			
20						

Standard pressure surface (mb.)	GREENSBORO, N. C. (987 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	273	17.8	83	65	1.4
1,000	30	161				
950	30	606	19.2	68	194	4.1
900	30	1,068	16.6	69	230	4.5
850	30	1,553	14.0	71	266	5.2
800	30	2,063	11.6	69	276	7.0
750	30	2,607	8.9	61	275	7.6
700	30	3,170	5.8	57	279	8.9
650	30	3,782	2.2	53	281	10.5
600	30	4,415	- 1.5	50	276	10.1
550	29	5,108	- 6.0	48	266	10.7
500	29	5,844	-10.2	39	272	13.4
450	29	6,661	-15.3		272	17.7
400	29	7,528	-21.6		266	21.2
350	29	8,498	-28.7	33	267	24.7
300	29	9,583	-37.0		264	26.6
250	29	10,819	-46.3		260	34.2
200	29	12,270	-55.5		261	38.7
175	29	13,113	-59.5		261	39.6
150	27	14,075	-62.8		265	30.3
125	26	15,193	-65.3		264	24.1
100	26	16,545	-66.4		270	15.9
80	25	17,904	-62.9		265	10.1
60	25	19,695	-58.3		207	2.3
50	24	20,848	-56.6		106	4.1
40	23	22,268	-54.8		96	8.9
30	22	24,118	-52.7		93	13.0
20	14	26,748	-49.8			

Standard pressure surface (mb.)	HATTERAS, N. C. (1017 MB.)				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	3	22.5	81	118	1.7
1,000	30	153	21.6	78	153	2.5
950	30	598	19.2	68	193	3.3
900	30	1,061	16.5	68	209	4.5
850	30	1,546	14.3	61	230	4.3
800	30	2,056	11.7	56	263	4.3
750	30	2,598	8.9	54	261	6.4
700	30	3,162	5.8	50	256	8.4
650	30	3,769	2.4	45	253	10.5
600	30	4,408	- 1.3	40	250	10.9
550	29	5,099	- 5.2	36	264	13.0
500	29	5,841	- 9.4		254	16.7
450	29	6,654	-14.6		254	20.0
400	29	7,529	-21.0		258	23.7
350	29	8,501	-28.2		255	27.0
300	29	9,587	-36.5		259	30.7
250	28	10,824	-45.6		256	36.1
200	28	12,277	-55.4		257	42.7
175	28	13,119	-59.8		260	40.8
150	27	14,072	-63.7		260	35.7
125	26	15,184	-66.9		263	26.4
100	26	16,526	-67.5		263	15.3
80	25	17,878	-64.1		234	9.5
60	25	19,661	-59.5		176	1.7
50	24	20,806	-57.7		88	5.8
40	24	22,220	-55.5		93	12.6
30	22	24,065	-53.0		96	14.2
20	8	26,672	-50.2			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

1/ Observations began September 19, 1956

RAWINSONDE DATA

Average monthly values

Table 20—Continued

SEPTEMBER 1956

HILO, T. H. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	25.6	73	41	3.9
1,000	30	125	24.1	74	49	4.7
950	30	579	20.5	82	66	6.4
900	30	1,038	17.2	85	61	6.4
850	30	1,525	14.2	86	53	6.2
800	30	2,035	11.6	79	58	6.6
750	30	2,589	11.1	46	58	7.8
700	30	3,149	9.1	37	68	7.2
650	30	3,767	6.1		67	6.0
600	30	4,411	2.7		86	4.7
550	30	5,109	- 1.4		98	3.9
500	30	5,862	6.3		167	3.3
450	30	6,687	-12.0		218	6.2
400	30	7,569	-18.4		219	11.1
350	30	8,551	-25.6		231	14.8
300	30	9,648	-34.1		234	20.4
250	30	10,897	-43.9		240	24.7
200	30	12,356	-55.7		255	30.3
175	30	13,194	-62.0		260	29.9
150	30	14,131	-68.0		262	24.3
125	29	15,216	-70.9		249	13.0
100	26	16,531	-72.9		142	2.7
80	18	17,844	-70.2		103	15.7
60	17	19,581	-63.8		90	26.2
50	16	20,705	-60.6		91	32.1
40	15	22,103	-57.7		89	36.9
30	7	23,930	-53.8			
20						
15						

IDLEWILD INT. AP, N. Y[1] (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	12	5	13.8		342	5.2
1,000	12	157	13.4		10	5.2
950	12	590	11.4		15	6.4
900	12	1,039	8.9		29	3.9
850	12	1,510	6.8		285	4.5
800	12	2,006	4.8		263	10.3
750	12	2,538	3.3		257	8.4
700	12	3,089	1.3		241	9.7
650	12	3,683	- 1.5		237	15.7
600	12	4,316	- 5.1		237	22.5
550	12	4,993	- 9.3		234	24.3
500	12	5,725	-13.5		247	29.3
450	11	6,525	-18.8		246	34.8
400	10	7,399	-24.6			
350	8	8,368	-31.5			
300	8	9,441	-39.7			
250	8	10,661	-49.1			
200	8	12,100	-55.8			
175	8	12,946	-58.1			
150	8	13,909	-60.7			
125	7	15,036	-62.9			
100	5	16,414	-63.0			
80	5	17,793	-60.8			

INTERNAT. FALLS, MINN. (973 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	360	8.8	80	296	0.2
1,000	30	126				
950	30	557	9.9	70	243	.6
900	30	1,002	7.7	66	281	7.8
850	30	1,471	4.7	64	291	10.7
800	30	1,963	2.2	60	294	13.0
750	30	2,486	- .2	56	296	15.5
700	30	3,032	- 2.7	47	300	19.2
650	30	3,616	- 5.8	49	300	22.9
600	30	4,239	- 9.7	47	301	25.6
550	30	4,904	-13.5	43	301	29.5
500	39	5,625	-18.1	42	298	33.8
450	28	6,407	-23.7	39	298	38.7
400	28	7,251	-29.9	39	299	42.0
350	28	8,187	-37.0		297	44.9
300	28	9,234	-44.7		296	49.3
250	28	10,434	-51.0		297	52.8
200	25	11,874	-53.7		297	50.5
175	24	12,732	-53.8		295	45.1
150	23	13,715	-54.0		294	40.2
125	18	14,870	-54.4		295	35.4
100	17	16,299	-55.2		292	29.7
80	15	17,724	-55.2		292	17.9
60	10	19,542	-54.3		289	9.5
50	8	20,730	-53.8			

JACKSON, MISS. (1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	101	22.5	65	85	1.6
1,000	30	146	23.3	57	106	2.7
950	30	597	22.8	45	90	6.0
900	30	1,063	19.4	48	92	4.9
850	30	1,552	16.2	47	100	4.3
800	30	2,065	13.6	41	95	4.1
750	30	2,608	10.6	34	58	4.7
700	30	3,178	7.5		33	5.4
650	30	3,787	4.2		24	7.0
600	30	4,430	.3		19	8.2
550	30	5,123	- 4.1		[illegible]	8.4
500	30	5,867	- 9.0		346	8.0
450	30	6,683	-14.4		333	7.8
400	30	7,557	-20.7		311	9.1
350	30	8,529	-27.9		288	11.7
300	30	9,617	-36.3		274	15.2
250	30	10,856	-45.4		263	18.6
200	29	12,315	-55.0		261	24.5
175	29	13,158	-60.1		268	25.4
150	29	14,108	-64.8		275	23.7
125	28	15,208	-68.8		283	16.9
100	28	16,536	-70.2		284	11.5
80	28	17,871	-66.6		272	5.2
60	26	19,637	-60.7		79	5.8
50	25	20,775	-58.7		87	11.3
40	25	22,185	-55.7		101	16.3
30	22	24,026	-53.0		87	19.0
20	13	26,667	-49.9			

JACKSONVILLE, FLA. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	6	22.5	88	90	2.1
1,000	29	152	22.7	82	105	4.7
950	29	600	20.8	72	102	5.1
900	29	1,065	17.9	71	91	3.9
850	29	1,552	14.8	69	86	2.7
800	29	2,063	11.9	65	96	2.5
750	29	2,606	9.9	52	185	1.6
700	29	3,172	7.0	47	216	3.5
650	29	3,782	3.8	44	237	4.1
600	29	4,424	.0	40	226	4.5
550	29	5,114	- 4.0		235	6.2
500	29	5,861	- 8.7		242	5.8
450	29	6,676	-14.1		242	7.8
400	29	7,553	-20.2		257	9.7
350	28	8,531	-27.6		257	13.0
300	28	9,620	-35.9		254	18.6
250	28	10,860	-45.5		257	26.8
200	27	12,311	-56.4		258	32.6
175	27	13,147	-62.1		261	29.7
150	27	14,087	-66.9		261	19.2
125	26	15,177	-70.1		259	14.6
100	25	16,497	-71.0		265	7.8
80	24	17,832	-66.7		117	.6
60	23	19,590	-62.1		81	7.2
50	22	20,725	-60.1		83	14.8
40	22	22,125	-57.4		88	21.4
30	20	23,959	-54.6		94	24.3
20	16	26,575	-50.7		90	26.6
15	5	28,479	-47.4			

KING SALMON, ALASKA (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	15	11.3	64	250	1.4
1,000	30	88	10.9	62	239	1.7
950	30	511	7.1	70	222	2.1
900	30	955	4.0	74	197	4.3
850	30	1,418	1.2	74	208	6.6
800	30	1,904	- 1.0	70	217	7.4
750	30	2,426	- 2.9	63	231	8.5
700	30	2,962	- 5.7	56	229	10.3
650	30	3,545	- 8.7	54	228	14.6
600	29	4,154	-12.1	50	235	18.5
550	29	4,818	-16.2	46	240	20.2
500	29	5,526	-20.8	45	243	21.6
450	29	6,306	-25.9	48	245	24.9
400	29	7,141	-31.3	48	246	26.4
350	29	8,072	-37.8		249	28.7
300	29	9,118	-44.7		251	33.8
250	29	10,320	-50.4		250	37.5
200	29	11,765	-52.4		250	41.0
175	28	12,635	-52.9		247	37.9
150	28	13,628	-53.0		249	31.9
125	28	14,802	-53.6		250	27.4
100	27	16,234	-53.0		257	21.4
80	27	17,673	-52.8		250	18.6
60	26	19,530	-52.1		255	15.0
50	25	20,711	-52.2		260	10.5
40	25	22,153	-52.1		260	9.7
30	19	24,035	-51.5		247	5.1
20	12	26,646	-49.2			

KOTZEBUE, ALASKA (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	7.0	78	147	3.3
1,000	30	94			145	4.7
950	30	517	3.5	73	155	4.3
900	30	949	.6	72	169	3.7
850	30	1,405	- 2.1	72	197	4.1
800	30	1,884	- 4.6	68	217	5.2
750	30	2,392	- 7.3	66	210	5.6
700	30	2,924	-10.2	59	232	7.2
650	30	3,496	-13.2	53	222	8.7
600	30	4,097	-16.6	50	238	11.5
550	30	4,748	-20.5	47	240	10.9
500	29	5,443	-25.3	45	253	14.2
450	29	6,203	-30.6	44	254	15.2
400	28	7,026	-36.6	45	254	18.1
350	28	7,937	-42.8		253	20.8
300	25	8,953	-48.5		269	23.7
250	25	10,140	-51.5		264	22.3
200	24	11,596	-49.7		249	21.4
175	24	12,471	-49.0		254	15.9
150	23	13,476	-48.5		241	15.9
125	23	14,674	-48.8		243	15.0
100	23	16,138	-48.6		240	15.7
80	22	17,598	-48.7		247	13.6
60	21	19,489	-49.5		254	13.8
50	21	20,681	-49.9		247	12.2
40	20	22,143	-50.7		254	11.8
30	15	24,038	-50.7			
20	5	26,839	-47.7			

LAKE CHARLES, LA. (1015 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	24.2	76	99	2.7
1,000	30	140	25.0	70	98	5.6
950	30	590	23.2	63	101	8.2
900	30	1,060	20.0	64	88	8.4
850	30	1,551	16.8	62	81	7.4
800	30	2,065	13.9	52	70	7.6
750	30	2,611	11.1	44	51	7.8
700	30	3,180	8.1	41	40	7.8
650	30	3,792	4.5	39	43	8.0
600	30	4,435	.8		34	7.4
550	30	5,128	- 3.5		10	5.6
500	30	5,876	- 8.4		2	5.6
450	30	6,693	-13.9		356	7.0
400	29	7,569	-20.0		332	6.6
350	29	8,545	-27.4		312	10.7
300	29	9,634	-35.7		299	7.8
250	29	10,877	-44.6		285	16.5
200	28	12,339	-54.4		274	18.1
175	28	13,184	-59.4		271	15.7
150	28	14,136	-64.5		283	18.8
125	28	15,237	-68.8		302	15.2
100	25	16,564	-70.4		310	8.9
80	23	17,900	-66.6		8	5.2
60	22	19,660	-61.2		71	10.9
50	22	20,798	-58.9		95	15.9
40	21	22,203	-56.4		96	20.2
30	21	24,039	-53.7		87	20.2
20	13	26,661	-50.4			

LANDER, WYO. (830 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,696	16.8	33	255	6.2
1,000	30	71				
950	30	526				
900	30	997				
850	30	1,494				
800	30	2,014	18.2	24	294	4.7
750	30	2,564	14.1	26	288	6.6
700	30	3,139	9.5	28	274	9.5
650	30	3,750	4.4	30	268	12.2
600	30	4,393	- 1.1	34	272	16.9
550	30	5,075	- 6.4	35	276	22.5
500	30	5,818	-11.8		279	26.4
450	30	6,622	-17.4		281	27.6
400	30	7,487	-24.3		278	31.1
350	30	8,446	-31.9		279	35.5
300	30	9,516	-40.4		284	39.6
250	29	10,738	-49.1		287	44.1
200	29	12,175	-56.8		283	50.3
175	29	13,015	-59.7		288	52.1
150	28	13,973	-61.0		286	44.7
125	28	15,100	-63.3		288	41.2
100	26	16,472	-64.2			
80	26	17,846	-62.1			
60	26	19,641	-58.1			
50	25	20,794	-56.1			
40	25	22,219	-54.2			
30	16	24,076	-51.3			

LAS VEGAS, NEV. (935 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	660	30.5	15	244	7.2
1,000	30	49				
950	30	511				
900	30	1,000	30.9		241	8.5
850	30	1,507	26.6		237	8.7
800	30	2,036	21.9		229	10.1
750	30	2,593	16.8	27	221	9.5
700	30	3,173	11.5	32	215	8.9
650	30	3,789	6.3	36	214	7.6
600	30	4,437	1.3	34	219	8.2
550	30	5,132	- 3.2		228	8.4
500	30	5,880	- 8.0		232	8.5
450	30	6,702	-13.5		238	10.9
400	28	7,575	-20.0		240	16.1
350	28	8,549	-27.9		241	19.8
300	28	9,637	-36.2		253	25.4
250	28	10,877	-45.3		261	30.9
200	28	12,334	-54.8		264	38.9
175	28	13,178	-59.7		264	39.8
150	26	14,126	-64.5		262	36.1
125	25	15,228	-68.8		257	27.8
100	24	16,558	-70.4		247	18.3
80	20	17,890	-66.9		258	7.0
60	18	19,652	-60.8		14	5.8
50	18	20,795	-57.6		63	4.5
40	17	22,211	-55.1		88	8.2
30	15	24,061	-52.7		87	9.5

LITTLE ROCK, ARK. (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	79	21.5	62	121	1.6
1,000	30	142	23.3	51	112	2.1
950	30	594	22.6	40	111	5.1
900	30	1,058	19.4	42	111	3.3
850	30	1,548	16.8	39	92	1.4
800	30	2,062	14.2	34	2	2.3
750	30	2,608	11.0	33	352	4.5
700	30	3,175	7.9	29	352	6.4
650	30	3,785	4.0	29	357	9.1
600	30	4,428	- .4		345	11.5
550	30	5,118	- 5.0		335	10.7
500	30	5,860	- 9.6		335	13.6
450	29	6,673	-15.3		320	12.0
400	29	7,545	-21.9		309	14.8
350	28	8,513	-29.2		306	16.7
300	28	9,596	-37.3		294	20.0
250	27	10,830	-46.3		286	24.5
200	27	12,282	-55.1		275	27.2
175	27	13,127	-58.7		269	29.1
150	25	14,081	-62.6		281	27.2
125	23	15,191	-66.3		280	28.4
100	23	16,534	-67.8		278	23.5
80	22	17,881	-65.4		276	8.0
60	21	19,661	-58.9		48	5.1
50	20	20,814	-56.3		69	8.4
40	20	22,237	-54.5		94	11.1
30	17	24,081	-52.5			
20	8	26,698	-49.6			

MAZATLAN, MEXICO (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	14	29.3	78		
1,000	30	78	28.7	77		
950	30	535	25.1	73		
900	30	1,009	23.0	68		
850	30	1,506	20.2	64		
800	30	2,027	17.3	59		
750	30	2,584	14.0	58		
700	29	3,156	10.2	61		
650	28	3,776	5.7	66		
600	28	4,418	1.1	67		
550	27	5,116	- 3.0	68		
500	27	5,865	- 6.5			
450	26	6,688	-11.1			
400	26	7,576	-17.1			
350	26	8,564	-23.9			
300	23	9,668	-32.1			
250	13	10,936	-41.8			

MC GRATH, ALASKA (999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	103	9.5	60	102	0.2
1,000	30	96			358	1.0
950	30	518	6.0	63	120	1.7
900	30	959	2.7	67	177	2.9
850	30	1,418	- .6	72	209	3.3
800	30	1,900	- 3.1	73	219	3.5
750	30	2,413	- 5.4	63	261	3.7
700	30	2,947	- 8.0	58	293	5.6
650	30	3,525	-11.3	57	288	7.8
600	30	4,130	-14.8	55	294	10.1
550	30	4,787	-18.7	50		
500	30	5,487	-23.0	47		
450	29	6,262	-28.2	46		
400	29	7,089	-33.8	47		
350	29	8,012	-39.9			
300	29	9,049	-46.4			
250	29	10,244	-50.9			
200	29	11,694	-50.8			
175	29	12,565	-50.0			
150	26	13,582	-50.3			
125	26	14,770	-50.4			
100	26	16,224	-50.3			
80	25	17,676	-49.9			
60	23	19,552	-49.9			
50	23	20,743	-49.9			
40	21	22,203	-50.1			
30	13	24,110	-49.9			

MEDFORD, OREG. (967 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	401	20.8	47	315	2.1
1,000	30	111				
950	30	562	22.3	40	313	4.7
900	30	1,025	19.1	42	310	7.2
850	30	1,513	15.5	45	310	4.7
800	30	2,023	11.8	47	273	1.9
750	30	2,567	8.2	44	199	4.1
700	30	3,127	4.6	41	203	8.4
650	29	3,731	1.0	38	223	12.6
600	29	4,366	- 2.7	29	227	15.9
550	29	5,053	- 7.2		232	18.5
500	29	5,787	-12.1		232	22.1
450	29	6,595	-17.7		239	23.9
400	29	7,455	-24.2		234	29.9
350	29	8,414	-31.6		230	32.8
300	29	9,486	-40.3		229	34.6
250	29	10,706	-48.9		236	34.6
200	29	12,148	-56.0		248	22.5
175	29	12,993	-58.0		246	25.1
150	29	13,961	-59.5		252	28.2
125	29	15,096	-61.6			
100	29	16,475	-62.2			
80	29	17,856	-61.4			
60	29	19,651	-59.1			
50	29	20,799	-57.4			
40	29	22,215	-55.6			
30	24	24,060	-52.2			
20	5	26,725	-48.8			

MERIDA, MEXICO (1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	27	25.8	85		
1,000	26	115	25.3	84		
950	26	567	23.5	79		
900	26	1,038	21.0	79		
850	26	1,531	18.1	79		
800	26	2,049	15.3	75		
750	26	2,595	12.2	73		
700	26	3,169	8.9	67		
650	25	3,784	5.4	68		
600	25	4,431	1.7	67		
550	25	5,128	- 2.2	66		
500	23	5,880	- 6.4	62		
450	20	6,705	-11.1	59		
400	20	7,594	-16.8	55		
350	18	8,580	-23.8			
300	17	9,685	-32.0			
250	14	10,943	-42.0			
200	9	12,410	-54.8			
175	9	13,249	-61.8			
150	[illegible]	14,187	-68.5			
125	7	15,268	-73.2			
100	6	16,556	-76.1			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

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[1] Observations began September 18, 1956

RAWINSONDE DATA

Average monthly values

Table 20—Continued

MIAMI, FLA. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	4	25.8	84	77	4.1
1,000--	29	135	25.3	80	86	6.2
950----	29	589	22.2	81	93	9.7
900----	29	1,055	19.3	77	104	9.7
850----	29	1,545	16.3	74	111	8.4
800----	29	2,059	13.4	69	121	5.8
750----	29	2,602	10.4	65	156	4.3
700----	29	3,172	7.2	65	171	4.7
650----	28	3,784	3.6	64	173	3.5
600----	28	4,426	.0	61	168	3.7
550----	27	5,118	- 3.8	59	177	3.9
500----	27	5,865	- 8.3	55	180	4.3
450----	27	6,685	-13.4	55	203	4.3
400----	27	7,563	-19.1	58	216	6.0
350----	26	8,544	-25.9	53	236	7.0
300----	26	9,640	-34.4	51	247	8.9
250----	26	10,887	-44.6		256	10.7
200----	26	12,339	-56.7		272	13.6
175----	26	13,173	-63.0		279	13.8
150----	26	14,108	-68.7		292	11.1
125----	26	15,187	-72.1		321	3.7
100----	25	16,501	-71.4		80	5.4
80-----	25	17,831	-67.6		96	10.7
60-----	25	19,577	-63.3		92	15.3
50-----	25	20,705	-60.6		86	24.3
40-----	25	22,103	-57.7		91	28.9
30-----	25	23,932	-53.9		89	32.2
20-----	25	26,559	-50.0		96	39.4
15-----	17	28,449	-47.5		96	40.0

MIDLAND, TEX. (917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	871	25.8	34	142	5.2
1,000--	30	98				
950----	30	563				
900----	30	1,037	26.0	34	150	10.3
850----	30	1,537	22.4	38	160	14.6
800----	30	2,061	18.3	41	160	10.3
750----	30	2,613	14.5	37	148	5.4
700----	30	3,189	10.7	33	86	4.1
650----	30	3,807	6.0	36	63	5.8
600----	30	4,452	1.3	33	36	8.5
550----	30	5,149	- 3.4		28	9.1
500----	30	5,893	- 8.3		20	9.1
450----	30	6,714	-14.0		359	7.2
400----	30	7,584	-20.6		342	8.2
350----	30	8,557	-28.0		327	10.5
300----	30	9,645	-36.0		314	14.4
250----	29	10,889	-44.8		305	18.8
200----	29	12,349	-54.4		308	24.7
175----	29	13,194	-59.3		314	26.2
150----	25	14,146	-64.6		315	24.9
125----	19	15,244	-69.2		318	15.0
100----	17	16,566	-71.8		294	9.7
80-----	13	17,891	-69.5		294	4.9
60-----	12	19,647	-61.0		87	5.8
50-----	12	20,788	-57.8		98	9.9
40-----	12	22,201	-55.9		91	12.4
30-----	11	24,042	-53.2			
20-----	8	26,667	-49.8			
15-----						

MONTGOMERY, ALA. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	61	21.5	85	47	1.4
1,000--	29	145	23.8	69	93	1.6
950----	29	595	22.5	59	83	5.8
900----	29	1,063	19.2	62	72	5.4
850----	29	1,552	15.9	64	64	5.2
800----	29	2,065	12.7	62	64	3.5
750----	29	2,609	9.8	55	57	4.9
700----	29	3,175	6.6	53	48	5.4
650----	29	3,786	3.4	49	37	5.6
600----	29	4,425	.0	41	18	7.2
550----	29	5,118	- 4.0		346	7.0
500----	29	5,863	- 8.8		331	6.0
450----	29	6,679	-14.1		320	7.6
400----	28	7,553	-20.6		292	10.1
350----	28	8,526	-28.1		275	12.0
300----	28	9,612	-36.7		275	14.4
250----	28	10,851	-45.7		261	20.2
200----	28	12,302	-55.8		260	28.7
175----	27	13,140	-60.0		261	28.7
150----	26	14,090	-64.0		270	22.9
125----	24	15,193	-67.5		278	20.0
100----	22	16,529	-68.7		279	13.4
80-----	19	17,872	-65.6		301	7.8
60-----	19	19,642	-60.7		104	4.7
50-----	17	20,783	-58.4		82	8.2
40-----	16	22,192	-55.8		94	17.3
30-----	15	24,037	-53.1		99	20.2
20-----						
15-----						

NANTUCKET, MASS. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	14	15.0	85	163	0.4
1,000--	30	158	15.9	79	243	2.5
950----	30	592	14.1	75	267	6.6
900----	30	1,048	11.7	71	269	9.9
850----	30	1,524	9.1	68	269	10.9
800----	30	2,025	7.6	51	259	14.2
750----	30	2,560	5.1	45	251	15.5
700----	30	3,115	2.6	44	254	19.8
650----	30	3,713	- .5	43	255	23.3
600----	30	4,347	- 4.1	38	252	26.2
550----	30	5,028	- 7.9		253	26.2
500----	30	5,763	-12.7	38	252	28.2
450----	30	6,564	-18.2	34	256	29.7
400----	30	7,428	-24.3		256	32.2
350----	30	8,386	-31.1		257	35.2
300----	30	9,460	-39.1		262	33.0
250----	30	10,683	-48.4		271	29.3
200----	30	12,121	-56.6		270	44.1
175----	29	12,965	-58.8		273	46.0
150----	29	13,926	-61.2		275	42.0
125----	28	15,054	-62.8			
100----	28	16,425	-62.4			
80-----	27	17,810	-60.4			
60-----	26	19,616	-56.9			
50-----	24	20,775	-55.8			
40-----	23	22,196	-54.7			
30-----	21	24,040	-53.2			
20-----	12	26,666	-50.7			
15-----						

NASHVILLE, TENN. (998 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	177	20.7	63	101	0.4
1,000--	30	151				
950----	30	603	20.6	48	130	2.3
900----	30	1,066	17.5	50	192	1.1
850----	30	1,552	14.8	47	268	2.9
800----	30	2,062	12.4	42	292	5.1
750----	30	2,606	9.7	36	307	7.6
700----	30	3,170	6.5	35	317	10.9
650----	30	3,779	2.7	31	317	12.0
600----	30	4,417	- 1.4	30	317	11.2
550----	30	5,105	- 5.7		314	15.7
500----	30	5,845	-10.6		307	16.5
450----	30	6,657	-15.8		298	17.5
400----	30	7,525	-21.9		292	18.8
350----	30	8,492	-29.4		285	22.1
300----	30	9,573	-37.8		278	25.6
250----	30	10,804	-46.9		268	29.7
200----	30	12,250	-55.7		260	36.1
175----	30	13,092	59.7		260	38.7
150----	29	14,047	-63.3		270	36.1
125----	29	15,159	-65.8		271	29.1
100----	29	16,510	-66.4		271	20.6
80-----	28	17,867	-63.2		275	9.5
60-----	26	19,660	-58.5		176	2.5
50-----	26	20,811	-56.5		85	7.8
40-----	25	22,232	-54.8		102	9.1
30-----	22	24,083	-52.4		93	11.3
20-----	12	26,718	-49.5			
15-----						

NOME, ALASKA (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	7.7	79	135	0.6
1,000--	30	87			177	2.1
950----	30	503	4.3	79	193	.8
900----	30	945	1.3	79	195	1.6
850----	30	1,403	- 1.4	78	213	4.1
800----	30	1,883	- 4.0	74	209	5.1
750----	30	2,396	- 5.9	63	212	6.0
700----	30	2,929	- 8.4	59	218	7.6
650----	30	3,504	-11.3	54	229	7.2
600----	30	4,111	-14.7	49	245	6.0
550----	30	4,766	-18.6	48	253	9.1
500----	30	5,468	-23.3	46	264	10.5
450----	30	6,236	-28.7	44	260	13.0
400----	30	7,064	-34.4	46	253	13.8
350----	30	7,984	-40.6		260	18.6
300----	29	9,012	-47.0		250	22.7
250----	29	10,205	-51.2		256	27.8
200----	29	11,655	-49.7		251	24.3
175----	29	12,531	-48.5		242	18.5
150----	29	13,545	-48.2		252	18.1
125----	29	14,743	-48.7		252	16.5
100----	28	16,213	-48.2		249	16.7
80-----	28	17,682	-48.3		255	13.0
60-----	25	19,566	-48.8		249	13.0
50-----	24	20,765	-49.1		254	13.8
40-----	24	22,227	-49.4		250	6.6
30-----	22	24,122	-49.0			
20-----	11	26,842	-47.7			
15-----						

NORFOLK, VA. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	20.0	78	77	2.5
1,000--	30	161	20.4	67	74	2.5
950----	30	604	18.2	63	277	.6
900----	30	1,064	15.6	64	302	1.9
850----	30	1,548	13.2	61	289	4.7
800----	30	2,056	10.8	55	272	5.6
750----	30	2,595	7.9	52	261	7.4
700----	30	3,157	4.9	50	262	10.9
650----	30	3,763	1.6	50	262	12.4
600----	30	4,399	- 2.2	47	261	14.4
550----	30	5,088	- 6.3	38	260	18.5
500----	29	5,823	-10.7		258	21.4
450----	29	6,636	-15.8		255	24.9
400----	29	7,504	-21.8		255	27.2
350----	29	8,472	-29.3		253	33.6
300----	29	9,555	-37.7		255	38.3
250----	29	10,787	-46.8		255	45.8
200----	28	12,245	-55.9		251	54.8
175----	28	13,085	-60.1		256	54.2
150----	27	14,037	-63.7		257	47.2
125----	25	15,142	-66.2		262	36.3
100----	24	16,496	-65.7		263	24.1
80-----	23	17,859	-62.6		253	13.4
60-----	22	19,653	-58.3		252	5.6
50-----	22	20,804	-56.8		105	4.5
40-----	22	22,223	-55.1		99	8.7
30-----	17	24,069	-52.7		86	12.6
20-----						
15-----						

NORTH PLATTE, NEBR. (918 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	848	17.2	53	118	4.5
1,000--	30	101				
950----	30	553				
900----	30	1,018	20.8	39	126	7.4
850----	30	1,511	19.0	37	168	7.6
800----	30	2,029	16.0	39	220	8.2
750----	30	2,579	12.7	37	261	10.1
700----	30	3,150	8.7	35	278	16.3
650----	30	3,763	4.4	33	286	22.1
600----	29	4,406	- .5	34	290	24.7
550----	29	5,098	- 5.6	37	292	25.8
500----	29	5,837	-10.8		293	27.4
450----	29	6,647	-16.6		290	30.5
400----	29	7,514	-23.2		294	31.9
350----	29	8,476	-30.8		295	36.3
300----	28	9,547	-39.5		301	36.9
250----	28	10,768	-49.0		298	40.8
200----	28	12,203	-57.0		294	40.4
175----	28	13,041	-59.5		288	38.5
150----	28	14,001	-61.4		288	39.4
125----	28	15,122	-64.2		283	29.7
100----	28	16,482	-64.8		279	19.2
80-----	26	17,852	-62.2		285	15.7
60-----	26	19,643	-58.2		45	5.4
50-----	25	20,792	-56.4		113	1.4
40-----	22	22,214	-54.1			
30-----	16	24,060	-51.7			
20-----						
15-----						

OAKLAND, CALIF. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	17.3	75	296	8.0
1,000--	30	118	16.9	74	290	8.5
950----	30	569	20.0	47	288	8.2
900----	30	1,025	20.0	35	259	6.2
850----	30	1,515	18.0	27	227	6.4
800----	30	2,031	15.2	24	208	9.1
750----	30	2,581	12.3		208	10.7
700----	30	3,149	8.7		206	9.9
650----	30	3,763	4.5		209	11.8
600----	30	4,404	.2	30	213	14.4
550----	30	5,096	- 4.4		218	17.3
500----	30	5,840	- 9.5		224	19.8
450----	30	6,654	-15.4		224	22.5
400----	30	7,524	-21.8		230	27.0
350----	29	8,488	-29.5		233	30.7
300----	29	9,569	-38.1		235	38.9
250----	29	10,799	-47.2		235	45.5
200----	29	12,247	-55.5		237	51.3
175----	29	13,090	-59.0		239	49.5
150----	29	14,049	-62.5		238	46.2
125----	29	15,164	-65.6		238	33.2
100----	29	16,515	-67.1		241	18.6
80-----	27	17,867	-65.3		241	8.4
60-----	25	19,633	-60.8		71	2.1
50-----	24	20,770	-58.0		69	3.7
40-----	22	22,184	-55.6		72	3.5
30-----	21	24,031	-52.2		68	6.0
20-----	18	26,661	-49.2		79	8.7
15-----	10	28,556	-47.6			

OKLAHOMA CITY, OKLA. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	391	24.2	40	151	5.8
1,000--	30	119				
950----	30	572	26.8	32	157	9.5
900----	30	1,048	23.7	33	177	14.0
850----	30	1,544	20.1	37	200	13.2
800----	30	2,063	16.7	41	219	11.1
750----	30	2,614	13.3	41	251	7.2
700----	30	3,186	9.6	39	291	6.8
650----	30	3,801	5.3	35	315	9.1
600----	30	4,444	.5	35	324	10.7
550----	30	5,136	- 4.5	30	324	12.0
500----	30	5,878	- 9.3		319	13.6
450----	30	6,693	-14.7		316	14.8
400----	30	7,565	-21.5		313	14.4
350----	30	8,533	-29.1		306	15.5
300----	30	9,614	-37.7		308	17.5
250----	30	10,845	-46.7		306	23.3
200----	30	12,294	-55.4		303	29.1
175----	30	13,137	-59.1		298	30.5
150----	29	14,090	-62.8		290	28.2
125----	29	15,201	-66.7		288	24.5
100----	28	16,544	-67.9		291	20.0
80-----	28	17,891	-65.0		287	7.0
60-----	26	19,665	-59.5		30	.8
50-----	26	20,813	-56.8		96	4.9
40-----	25	22,235	-54.7		95	8.0
30-----	23	24,084	-52.2		89	12.6
20-----	10	26,749	-49.1			
15-----						

OMAHA, NEBR. (968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	403	18.9	51	84	1.9
1,000--	30	119				
950----	30	567	20.7	43	74	1.9
900----	30	1,030	18.7	42	207	2.7
850----	30	1,517	15.4	44	248	9.1
800----	30	2,029	12.6	46	267	13.4
750----	30	2,573	9.6	43	276	17.5
700----	30	3,137	5.6	43	278	21.6
650----	30	3,744	1.4	40	283	24.7
600----	30	4,378	- 2.6	36	291	28.9
550----	30	5,064	- 7.2	37	293	31.3
500----	30	5,798	-12.6		288	33.4
450----	28	6,603	-18.1		288	37.1
400----	28	7,463	-31.2		287	42.0
350----	28	8,420	-32.1		287	44.7
300----	28	9,490	-40.3		289	43.9
250----	28	10,707	-49.5		287	48.2
200----	27	12,138	-57.5		290	50.1
175----	27	12,976	-59.6		291	49.5
150----	27	13,936	-61.3		286	45.6
125----	26	15,059	-63.7		288	36.9
100----	26	16,426	-63.6		285	27.4
80-----	23	17,801	-62.0		288	18.1
60-----	22	19,598	-58.0		299	10.1
50-----	20	20,746	-56.5		296	3.9
40-----	19	22,169	-53.8		227	2.3
30-----	11	24,033	-51.4			
20-----						

1/ PEORIA, ILL. (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	18	201	17.0	64	27	1.9
1,000--	18	118				
950----	18	565	18.5	47	229	1.2
900----	18	1,021	15.9	46	273	9.5
850----	18	1,504	13.9	45	268	15.7
800----	18	2,013	10.9	46	279	18.6
750----	18	2,554	7.5		283	22.3
700----	18	3,113	4.1	50	287	23.9
650----	18	3,716	.7		289	28.4
600----	18	4,351	- 3.4		298	32.2
550----	18	5,033	- 7.9		293	36.3
500----	18	5,766	-13.1		294	37.7
450----	18	6,567	-18.7		292	41.2
400----	18	7,429	-24.8		294	39.6
350----	18	8,385	-32.2		288	45.1
300----	17	9,448	-40.6		288	49.9
250----	17	10,663	-49.6		288	56.3
200----	17	12,093	-57.7		275	52.4
175----	17	12,930	-59.8		274	55.0
150----	17	13,887	-61.5		275	50.9
125----	17	15,009	-63.1		272	42.0
100----	16	16,376	-62.7		279	33.2
80-----	14	17,751	-60.5		279	19.8
60-----	14	19,554	-57.5		295	13.0
50-----	14	20,709	-55.9		265	13.4
40-----	13	22,145	-52.7		262	9.3
30-----	12	24,014	-50.9		54	2.9
20-----	6	26,701	-49.0			

PHOENIX, ARIZ. (969 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	341	31.7	26	297	1.9
1,000--	30	57				
950----	30	524	34.8	19	279	5.8
900----	30	1,010	31.4	20	275	9.7
850----	30	1,519	27.3	22	280	8.0
800----	30	2,050	22.7	26	270	4.9
750----	30	2,609	17.8	31	203	2.9
700----	30	3,192	12.8	35	165	4.9
650----	30	3,810	7.6	36	149	6.4
600----	30	4,463	2.4	36	134	7.0
550----	30	5,164	- 3.1	35	150	6.8
500----	30	5,908	- 7.6		175	5.1
450----	30	6,731	13.1		212	5.1
400----	30	7,608	-19.1		216	4.5
350----	30	8,588	-26.5		263	6.8
300----	30	9,682	-34.9		283	7.6
250----	30	10,930	-43.8		295	15.2
200----	30	12,398	-53.6		283	19.6
175----	30	13,245	-59.3		284	17.1
150----	30	14,198	-64.9		287	15.5
125----	30	15,296	-69.7		274	10.5
100----	26	16,612	-72.6		278	5.4
80-----	26	17,932	-69.0		24	3.1
60-----	25	19,681	-61.2		69	9.3
50-----	24	20,821	-58.0		93	11.1
40-----	22	22,229	-55.0		86	13.0
30-----	12	24,074	-52.8			
20-----						

PITTSBURGH, PA. (978 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	353	15.0	78	244	1.2
1,000--	29	159				
950----	29	600	15.8	69	248	2.1
900----	29	1,053	12.8	73	260	7.0
850----	29	1,531	9.8	72	260	10.5
800----	29	2,032	7.4	58	267	12.8
750----	29	2,566	4.8	51	273	15.3
700----	29	3,122	2.3	46	276	19.2
650----	29	3,721	- .9	45	275	21.6
600----	29	4,352	- 4.4		272	24.9
550----	29	5,032	- 8.7		275	27.4
500----	29	5,763	-13.7		275	29.7
450----	29	6,563	-19.2		271	33.6
400----	29	7,421	-25.5		268	37.1
350----	28	8,380	-32.6		269	39.2
300----	27	9,448	-40.6		266	41.4
250----	26	10,664	-49.4		264	47.2
200----	25	12,099	-57.2		263	54.2
175----	25	12,938	-59.3		261	49.3
150----	22	13,887	-61.7		262	46.4
125----	10	14,956	-62.2			
100----	6	16,290	-61.9			
80-----	5	17,672	-59.3			
60-----						
50-----						
40-----						
30-----						
20-----						

PORTLAND, ME. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	20	11.5	87	266	1.6
1,000--	30	155	13.4	71	238	3.9
950----	30	590	12.1	65	258	5.8
900----	30	1,038	9.5	66	266	8.4
850----	30	1,510	7.1	66	267	10.9
800----	30	2,007	4.7	64	263	12.2
750----	30	2,537	2.4	58	257	16.1
700----	30	3,086	- .5	51	260	18.6
650----	29	3,680	- 3.5	44	261	20.8
600----	29	4,303	- 6.4		255	25.8
550----	28	4,985	- 9.8		254	30.3
500----	28	5,712	-14.3		255	34.0
450----	28	6,510	-19.5		254	38.1
400----	28	7,368	-25.6		257	40.8
350----	28	8,321	-32.9		252	45.1
300----	28	9,388	-40.8		253	49.0
250----	28	10,604	-49.2		253	63.1
200----	27	12,035	-55.8		258	59.4
175----	26	12,879	-56.6		263	57.3
150----	26	13,853	-57.7		264	50.5
125----	26	14,997	-59.6		262	43.5
100----	25	16,380	-59.7		258	35.0
80-----	23	17,783	-57.9		257	26.4
60-----	22	19,608	-55.3		254	11.7
50-----	22	20,773	-54.2		240	13.2
40-----	22	22,205	-53.3		222	7.0
30-----	19	24,064	-52.3		125	6.0
20-----	8	26,709	-50.0			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

1/ Observations began September 12, 1956

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	RAPID CITY, S. DAK. (905 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	966	15.8	43	34	5.1
1,000	30	105				
950	30	551				
900	30	1,017	16.6	41	39	5.1
850	30	1,504	16.0	40	349	3.9
800	30	2,016	12.3	44	296	6.6
750	30	2,557	8.9	47	278	11.5
700	30	3,121	5.1	46	275	17.9
650	30	3,724	1.1	41	285	26.0
600	29	4,360	- 3.3	42	285	32.2
550	29	5,042	- 8.1	42	286	34.4
500	29	5,775	-13.3	41	286	34.0
450	29	6,578	-19.1	38	286	36.9
400	29	7,434	-25.4		290	38.7
350	29	8,387	-32.9		290	44.1
300	29	9,452	-41.4		292	47.6
250	29	10,663	-50.5		292	50.3
200	29	12,091	-57.9		292	55.2
175	29	12,927	-59.6		292	52.3
150	26	13,881	-60.5		291	46.2
125	19	15,015	-62.1		291	46.0
100	10	16,386	-62.1			
80						
60						
50						
40						
30						
20						
15						

Standard pressure surface (mb.)	ST. CLOUD, MINN. (978 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	316	11.7	79	0	0.0
1,000	30	128				
950	30	567	13.5	66	277	1.2
900	30	1,016	11.5	63	266	7.4
850	30	1,493	9.4	57	280	12.2
800	30	1,993	6.9	51	285	15.7
750	30	2,526	3.9	47	288	20.8
700	30	3,079	.7	45	292	23.3
650	30	3,674	- 2.9	45	294	25.6
600	30	4,300	- 6.6	45	295	30.1
550	30	4,976	-10.5	39	293	33.8
500	30	5,703	-15.2	40	295	37.3
450	30	6,495	-21.0	42	293	36.7
400	30	7,350	-27.2	39	289	37.7
350	30	8,297	-34.5		289	37.3
300	29	9,353	-42.5		292	36.7
250	28	10,566	-50.8		283	38.1
200	28	12,000	-55.3		280	36.9
175	28	12,850	-56.0		285	34.2
150	28	13,828	-56.9		274	33.8
125	28	14,979	-58.1		277	23.7
100	28	16,381	-58.6		282	19.2
80	27	17,786	-57.9		269	13.4
60	26	19,606	-55.6			
50	25	20,762	-54.8		303	4.9
40	25	22,192	-53.5		262	4.5
30	21	24,054	-50.7			
20						
15						

Standard pressure surface (mb.)	ST. PAUL IS., ALASKA (1006 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	10	7.7	87	137	4.5
1,000	30	55			168	4.7
950	30	479	5.1	86	155	8.4
900	30	916	2.7	86	170	8.5
850	30	1,377	1.4	78	167	8.2
800	30	1,864	- .6	70	172	8.7
750	30	2,384	- 2.6	65	178	8.4
700	30	2,922	- 4.9	56	189	8.2
650	30	3,510	- 8.6	53	200	8.2
600	30	4,117	-12.0	46	201	9.7
550	30	4,780	-16.1	41	208	9.7
500	30	5,489	-20.8		218	11.1
450	30	6,263	-26.3	39	221	15.3
400	30	7,100	-32.3	37	224	14.2
350	29	8,032	-38.7		229	18.5
300	29	9,072	-45.5		234	15.7
250	29	10,270	-50.7		228	16.3
200	29	11,721	-50.7		251	21.8
175	29	12,591	-49.8		251	22.5
150	29	13,597	-50.2		249	22.1
125	29	14,785	-50.6		250	19.4
100	29	16,237	-50.7		247	18.5
80	29	17,690	-50.6		240	16.3
60	27	19,564	-50.7		248	10.5
50	25	20,757	-50.8		242	9.9
40	25	22,208	-51.2		245	9.7
30	20	24,089	-50.5			
20	7	26,763	-48.5			
15						

Standard pressure surface (mb.)	SALEM, OREG. (1008 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	61	18.4	63	323	3.5
1,000	30	130	18.4	61	324	4.7
950	30	576	16.8	56	348	7.6
900	30	1,028	14.0	55	346	5.6
850	30	1,508	11.2	54	288	2.9
800	30	2,012	8.7	48	247	6.4
750	30	2,551	5.8	43	230	11.8
700	30	3,105	2.5	43	226	17.5
650	30	3,703	- 1.1	43	223	18.8
600	30	4,334	- 5.3	44	232	18.3
550	30	5,012	- 9.5	42	236	20.6
500	30	5,743	-13.9	36	243	22.1
450	30	6,542	-19.8	35	247	24.3
400	30	7,398	-26.2	36	249	27.4
350	30	8,348	-33.5		248	32.2
300	30	9,411	-41.6		245	35.0
250	30	10,624	-49.9		245	39.0
200	30	12,058	-56.3		251	41.2
175	30	12,902	-58.0		249	38.1
150	30	13,871	-59.0		251	34.6
125	30	15,010	-60.2		251	27.8
100	30	16,399	-60.5		255	21.2
80	28	17,786	-59.8		263	10.9
60	25	19,589	-58.6		278	7.0
50	23	20,733	-57.4		307	4.5
40	23	22,148	-55.5		310	4.1
30	19	23,992	-52.5		320	1.7
20	13	26,623	-48.6		262	5.8
15	6	28,498	-45.1			

Standard pressure surface (mb.)	SALT LAKE CITY, UTAH (872 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,288	18.9	35	160	3.5
1,000	30	81				
950	30	539				
900	30	1,007				
850	30	1,508	22.2	24	98	1.9
800	30	2,031	18.9	22	176	.2
750	30	2,589	14.7	24	264	4.9
700	30	3,159	10.2	26	245	9.9
650	30	3,778	5.3	30	247	13.0
600	30	4,418	.2	35	250	16.5
550	30	5,116	- 5.2	40	253	19.4
500	30	5,851	-10.4		262	20.8
450	30	6,665	-15.8		269	24.1
400	30	7,532	-22.2		269	26.8
350	30	8,498	-30.0		271	31.9
300	30	9,576	-38.6		271	37.1
250	29	10,798	-47.9		275	42.2
200	29	12,239	-56.7		275	45.1
175	29	13,079	-59.7		277	44.1
150	29	14,036	-62.6		275	43.1
125	28	15,151	-65.1		270	35.4
100	26	16,505	-66.7		276	26.2
80	25	17,859	-63.7		287	13.4
60	24	19,634	-59.9		315	4.5
50	24	20,778	-57.4		11	1.6
40	23	22,198	-55.2		347	.4
30	19	24,052	-52.1		303	1.4
20	13	26,684	-49.4			
15						

Standard pressure surface (mb.)	SAN ANTONIO, TEX. (988 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	243	26.1	49	139	3.7
1,000	30	129				
950	30	588	25.8	49	129	9.9
900	30	1,059	22.4	53	127	8.7
850	30	1,553	18.6	57	116	7.0
800	30	2,070	14.6	61	114	5.6
750	30	2,614	11.2	54	99	5.4
700	30	3,186	8.3	41	77	6.8
650	30	3,803	4.9	33	64	8.2
600	30	4,443	1.3		56	8.0
550	30	5,136	- 3.2		39	8.4
500	30	5,885	- 8.1		33	9.3
450	30	6,704	-13.5		15	7.4
400	30	7,581	-20.0		351	7.4
350	30	8,556	-27.4		315	8.4
300	30	9,646	-35.6		296	11.7
250	30	10,889	-44.5		289	18.5
200	30	12,349	-54.8		292	15.7
175	30	13,192	-59.9		304	17.1
150	30	14,142	-65.2		310	16.3
125	29	15,239	-69.8		317	12.0
100	25	16,554	-72.6		336	5.4
80	24	17,871	-69.6		32	2.3
60	24	19,614	-62.4		72	11.8
50	24	20,746	-59.8		85	15.0
40	24	22,148	-57.0		84	29.9
30	21	23,984	-54.1		85	26.0
20	11	26,581	-51.2			
15						

Standard pressure surface (mb.)	SAN DIEGO, CALIF. (997 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	124	20.3	74	324	4.5
1,000	30	98				
950	30	552	24.3	32	336	6.6
900	30	1,017	24.4	26	322	6.6
850	30	1,515	22.1	25	299	4.3
800	30	2,038	18.6	28	259	3.3
750	30	2,589	14.3	33	215	4.3
700	30	3,165	9.8	37	201	7.0
650	30	3,780	5.3	37	202	8.0
600	30	4,426	1.3	28	206	7.2
550	30	5,121	- 3.1		210	5.2
500	30	5,869	- 7.7		228	7.4
450	30	6,688	-13.1		216	7.0
400	30	7,569	-19.3		222	8.7
350	30	8,547	-26.6		236	12.8
300	29	9,643	-34.8		245	15.9
250	27	10,890	-44.1		253	20.2
200	27	12,355	-54.2		258	25.3
175	27	13,199	-59.9		260	29.3
150	27	14,148	-65.7		256	26.6
125	27	15,241	-70.5		251	18.8
100	25	16,561	-72.7		229	12.2
80	25	17,878	-69.2		256	.6
60	23	19,627	-61.7		75	8.7
50	23	20,763	-58.5		76	10.7
40	21	22,176	-56.1		89	15.7
30	19	24,010	-53.2		85	18.8
20	9	26,678	-49.7			
15						

Standard pressure surface (mb.)	SAN JUAN, P. R. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	25.0	86	128	3.7
1,000	30	134	25.8	74	110	9.7
950	30	590	22.8	79	97	17.1
900	30	1,054	19.8	79	98	16.5
850	30	1,546	16.9	75	96	15.9
800	30	2,061	14.5	65	90	15.2
750	30	2,605	11.8	57	87	13.6
700	30	3,179	8.9	47	85	12.6
650	30	3,792	5.4	40	84	12.2
600	30	4,439	1.6	36	84	10.5
550	30	5,132	- 2.6	35	91	8.9
500	30	5,884	- 7.1	29	98	7.8
450	30	6,706	-12.8	27	102	6.0
400	30	7,586	-19.3		111	7.4
350	30	8,563	-26.7		141	6.0
300	30	9,654	-35.3		159	5.2
250	30	10,896	-45.2		191	2.9
200	30	12,347	-56.6		282	4.5
175	30	13,182	-62.5		276	4.5
150	30	14,118	-68.4		288	5.6
125	27	15,201	-71.3		309	1.6
100	27	16,514	-72.5		108	6.8
80	26	17,829	-69.9		94	15.9
60	22	19,560	-64.7		87	26.2
50	21	20,677	-61.8		89	33.0
40	21	22,068	-58.3		90	40.0
30	18	23,893	-55.2		92	44.7
20	14	26,515	-50.8		98	53.6
15	5	28,407	-46.1			

Standard pressure surface (mb.)	SANTA MARIA, CALIF. (1005 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	74	15.4	76	303	4.3
1,000	30	116	15.5	76	307	4.5
950	30	571	20.4	54	339	5.8
900	30	1,025	22.8	28	349	5.2
850	30	1,520	20.3	29	14	3.7
800	30	2,040	17.2	28	36	1.0
750	30	2,592	13.8	27	215	2.1
700	30	3,164	9.7	26	236	5.1
650	30	3,778	5.7		233	9.5
600	30	4,425	1.6		223	12.6
550	30	5,122	- 3.2		228	13.0
500	30	5,867	- 8.3		229	15.5
450	30	6,690	-13.9		225	16.9
400	30	7,561	-20.3		229	21.2
350	30	8,535	-27.7		239	24.5
300	30	9,624	-35.9		239	27.0
250	30	10,866	-44.7		242	29.5
200	30	12,327	-54.4		252	34.0
175	30	13,172	-59.2		250	33.4
150	29	14,124	-64.2		247	28.7
125	28	15,228	-68.6		235	16.5
100	27	16,561	-69.3		221	8.5
80	27	17,899	-66.8		174	3.9
60	27	19,659	-61.0		61	3.1
50	27	20,802	-57.8		66	8.2
40	27	22,216	-55.3		88	9.5
30	24	24,061	-53.1		84	15.3
20	13	26,681	-50.4			
15						

Standard pressure surface (mb.)	SANTA MONICA, CALIF. (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	38	19.2	78	221	2.5
1,000	30	99	19.2	76	226	2.7
950	30	553	26.1	33	265	4.7
900	30	1,022	24.8	25	262	4.3
850	30	1,520	22.4	22	237	4.9
800	30	2,044	18.7	25	214	5.2
750	30	2,595	14.5	31	204	7.0
700	30	3,171	10.3	34	183	7.6
650	30	3,787	5.7	34	194	7.6
600	30	4,432	1.2		208	7.2
550	30	5,128	- 3.4		223	8.5
500	30	5,872	- 8.2		225	10.3
450	30	6,692	-13.4		228	10.9
400	30	7,567	-19.9		227	14.0
350	30	8,543	-27.4		240	16.1
300	30	9,634	-35.9		244	22.3
250	30	10,875	-44.8		249	28.9
200	30	12,334	-54.7		254	34.2
175	30	13,177	-60.0		253	36.5
150	30	14,127	-65.1		251	32.4
125	28	15,221	-69.5		246	24.1
100	22	16,534	-70.8		234	15.7
80	20	17,859	-68.4		242	3.7
60	19	19,606	-61.5		56	3.3
50	19	20,745	-58.2		67	6.8
40	18	22,151	-55.2		93	7.4
30	17	23,998	-52.8		87	9.9
20	15	26,630	-50.0		90	9.3
15	10	28,500	-47.4			

Standard pressure surface (mb.)	S. STE. MARIE, MICH. (990 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	221	9.9	90	294	1.0
1,000	30	137				
950	30	564	9.8	76	235	3.1
900	30	1,013	7.6	73	247	6.8
850	30	1,482	5.2	71	263	12.0
800	30	1,975	2.9	69	270	14.8
750	30	2,501	.1	62	276	16.9
700	30	3,046	- 2.6	57	278	19.4
650	30	3,631	- 5.9	48	278	21.8
600	30	4,253	- 9.4	43	275	23.5
550	30	4,923	-13.4	37	269	26.0
500	30	5,639	-18.2	34	269	28.2
450	30	6,427	-23.7	34	270	30.5
400	29	7,276	-29.3	32	274	33.6
350	27	8,215	-36.3		270	37.5
300	26	9,273	-43.7		269	41.0
250	26	10,477	-50.8		267	47.6
200	26	11,911	-55.4		264	49.0
175	26	12,761	-55.8		265	45.3
150	25	13,743	-56.7		268	39.4
125	23	14,902	-57.6		265	31.3
100	23	16,308	-57.9		268	25.8
80	21	17,713	-57.2		272	17.5
60	18	19,544	-55.4		264	11.5
50	18	20,709	-54.0		264	7.6
40	15	22,153	-53.3		255	6.0
30	14	24,021	-50.7		260	3.5
20	13	26,669	-48.9		290	.6
15	8	28,564	-47.6			

Standard pressure surface (mb.)	SEATTLE, WASH. (1002 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	124	15.6	73	320	2.7
1,000	30	144			349	4.9
950	30	582	14.5	63	227	2.3
900	30	1,035	12.3	59	248	4.5
850	30	1,512	10.0	55	235	7.4
800	30	2,013	6.8	57	231	8.9
750	30	2,548	3.4	53	229	9.9
700	30	3,098	.5	44	236	12.6
650	30	3,695	- 2.7	38	241	15.3
600	30	4,320	- 6.3	35	247	17.7
550	30	4,998	-10.4	34	250	19.8
500	30	5,722	-15.4	37	250	22.0
450	30	6,516	-21.0	40	252	24.5
400	30	7,369	-27.3	43	250	26.2
350	30	8,315	-34.7	41	256	29.1
300	30	9,373	-42.6		258	33.2
250	30	10,580	-50.7		253	36.5
200	30	12,014	-56.1		258	39.2
175	30	12,860	-57.4		256	36.1
150	27	13,843	-57.9		256	28.6
125	21	15,003	-58.6		258	26.2
100	19	16,405	-59.2		260	18.5
80	11	17,790	-57.5		265	11.5
60	8	19,629	-56.2			
50	7	20,807	-55.3			
40	5	22,236	-53.2			
30						
20						
15						

Standard pressure surface (mb.)	SHREVEPORT, LA. (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	28	76	24.4	52	102	4.7
1,000	28	136	25.0	50	100	7.0
950	28	589	23.6	43	114	10.5
900	28	1,056	20.0	48	119	7.4
850	28	1,545	16.4	50	99	2.5
800	28	2,059	13.3	45	22	2.3
750	28	2,601	10.4	34	24	4.5
700	28	3,169	7.0		36	7.8
650	28	3,781	3.4		34	9.5
600	28	4,418	- 1.0		19	10.1
550	28	5,106	- 5.2		20	9.7
500	27	5,850	- 9.8		10	9.3
450	27	6,663	-15.4		348	7.8
400	27	7,534	-21.8		326	8.4
350	27	8,503	-29.0		303	12.0
300	27	9,587	-37.1		290	13.2
250	27	10,822	-46.1		276	18.1
200	27	12,273	-55.4		272	22.1
175	26	13,118	-59.9		271	23.9
150	26	14,070	-64.6		277	22.9
125	24	15,169	-68.5		276	18.1
100	21	16,495	-70.2		280	12.6
80	19	17,831	-68.2		292	4.5
60	18	19,585	-61.9		94	4.9
50	18	20,720	-58.8		93	9.1
40	17	22,125	-56.4		99	12.2
30	15	23,963	-53.9		87	14.6
20	6	26,618	-51.2			
15						

Standard pressure surface (mb.)	SPOKANE, WASH. (931 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	722	17.2	38	231	4.3
1,000	30	109				
950	30	557				
900	30	1,016	17.3	35	251	6.4
850	30	1,500	13.4	39	255	7.2
800	30	2,007	9.6	41	251	10.1
750	30	2,545	5.7	45	259	13.2
700	30	3,099	1.5	49	252	14.6
650	30	3,695	- 2.3	45	250	17.5
600	30	4,324	- 6.4	42	255	19.0
550	30	4,999	-10.7	42	259	22.1
500	30	5,725	-15.4	42	263	23.3
450	29	6,527	-20.6	38	267	25.1
400	29	7,380	-26.9	40	271	32.1
350	29	8,328	-34.2	40	271	35.7
300	29	9,388	-42.3		274	40.8
250	29	10,596	-51.0		266	41.0
200	29	12,025	-56.6		270	47.2
175	29	12,869	-57.1		270	42.7
150	29	13,842	-58.0		269	36.3
125	28	14,984	-59.6		270	30.5
100	27	16,377	-59.7		275	23.1
80	24	17,770	-58.5		279	14.6
60	23	19,579	-57.0		288	9.1
50	23	20,735	-56.3		312	6.2
40	23	22,156	-54.5		321	3.5
30	23	24,009	-51.8		299	3.9
20	16	26,648	-47.9		276	7.4
15						

Standard pressure surface (mb.)	SWAN ISLAND, W. I. (1012 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	10	27.5	81	111	7.6
1,000	30	113	26.7	82	102	8.5
950	30	571	23.4	86	108	12.4
900	30	1,037	20.6	82	115	15.0
850	30	1,530	17.7	74	116	14.6
800	30	2,047	14.8	69	116	14.0
750	30	2,598	11.9	63	118	12.8
700	30	3,166	8.8	56	118	11.5
650	29	3,787	5.1	51	116	10.9
600	29	4,425	1.3	48	117	10.7
550	29	5,122	- 2.8	49	118	10.1
500	29	5,870	- 7.3	50	115	8.9
450	29	6,696	-12.0	37	105	8.4
400	29	7,576	-18.1	32	103	6.6
350	28	8,560	-25.0		109	5.6
300	28	9,660	-33.6		90	3.5
250	28	10,910	-43.8		70	1.9
200	28	12,368	-55.8		49	2.7
175	28	13,204	-62.5		41	4.7
150	27	14,139	-69.2		34	7.0
125	25	15,210	-74.3		54	8.5
100	23	16,508	-74.6		64	9.5
80	22	17,815	-71.0		89	18.1
60	21	19,541	-65.1		92	27.2
50	21	20,659	-62.3		91	31.9
40	20	22,050	-57.4		92	35.7
30	15	23,873	-54.2		94	42.2
20	12	26,492	-51.0			
15						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

TACUBAYA, MEXICO (774 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	2,306	15.8	68		
1,000	30	69				
950	30	525				
900	30	998				
850	30	1,498				
800	30	2,026				
750	30	2,576	13.9	68		
700	30	3,151	9.6	74		
650	30	3,770	5.4	80		
600	30	4,414	1.1	85		
550	30	5,111	2.6	78		
500	30	5,861	6.7	73		
450	30	6,686	-11.3	59		
400	30	7,573	16.8	45		
350	30	8,562	-23.4	38		
300	30	9,671	-31.9	35		
250	30	10,932	-42.1			
200	29	12,406	-54.2			
175	25	13,256	-61.0			
150	24	14,196	-68.1			
125	14	15,279	-74.1			
100	8	16,569	-77.7			
80						
60						
50						
40						
30						
20						
15						

TAMPA, FLA. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	7	23.6	82	69	4.7
1,000	29	143	23.6	77	81	8.2
950	29	591	21.5	73	102	10.9
900	29	1,058	18.5	73	107	8.4
850	29	1,547	15.8	69	111	5.6
800	29	2,060	13.0	61	103	4.7
750	29	2,603	10.4	53	86	3.1
700	29	3,172	7.1	53	91	1.7
650	29	3,783	3.7	52	133	2.9
600	29	4,424	.1	52	125	3.3
550	29	5,114	- 3.9	52	152	1.4
500	29	5,863	- 8.3	47	262	1.9
450	29	6,680	-13.8	47	252	3.7
400	29	7,558	-19.5	47	245	9.3
350	29	8,535	-26.7	51	251	13.0
300	29	9,629	-35.0	49	247	18.8
250	28	10,874	-45.1		247	24.1
200	28	12,327	-56.9		251	24.7
175	27	13,160	-62.6		258	21.8
150	26	14,098	-67.8		261	17.1
125	26	15,184	70.9		265	11.7
100	24	16,501	-71.8		270	1.0
80	23	17,830	-67.5		91	4.1
60	23	19,580	-62.7		91	12.4
50	23	20,710	-60.2		79	19.2
40	22	22,110	-57.8		87	27.6
30	19	23,936	-54.2		91	30.9
20	12	26,574	-49.4			
15	5	28,475	-45.7			

TATOOSH ISLAND, WASH. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	31	12.4	90	190	5.2
1,000	30	140	12.7	83	203	5.1
950	30	572	11.6	73	233	7.2
900	30	1,021	10.2	68	235	7.0
850	30	1,495	8.0	64	227	7.2
800	30	1,994	5.6	60	241	8.0
750	30	2,522	3.1	52	250	9.3
700	30	3,075	.3	47	255	11.8
650	30	3,664	2.7	43	258	13.4
600	30	4,297	6.1	39	263	15.5
550	30	4,971	-10.4	39	261	17.3
500	30	5,699	15.2	39	265	18.5
450	30	6,491	-20.7	39	267	21.8
400	30	7,346	27.2	40	270	22.9
350	30	8,294	-34.3	38	266	26.6
300	30	9,354	-42.0		269	30.7
250	28	10,571	-50.0		254	34.4
200	28	12,009	55.1		257	35.5
175	28	12,860	-55.7		253	29.7
150	28	13,840	56.2		253	27.8
125	27	14,998	57.5		260	22.0
100	27	16,404	-58.1		263	16.5
80	27	17,812	-57.1		269	15.5
60	27	19,632	-56.6		285	7.8
50	27	20,789	-55.9		306	5.1
40	24	22,207	-55.0		324	5.6
30	20	24,036	-53.7		355	5.2
20	6	26,625	-50.6			
15						

TOPEKA, KANS. (984 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	270	21.8	45	162	4.3
1,000	30	124				
950	30	573	23.6	33	171	8.9
900	30	1,043	20.8	34	201	11.3
850	30	1,533	17.8	34	225	12.0
800	30	2,048	14.5	36	250	12.6
750	30	2,594	10.9	41	268	14.4
700	30	3,162	7.0	43	287	17.3
650	30	3,771	2.8	37	292	20.0
600	30	4,409	1.4	35	291	21.0
550	30	5,098	- 6.2	35	302	22.7
500	30	5,834	11.3		298	25.3
450	29	6,640	-16.8		300	27.0
400	28	7,508	-23.0		297	28.2
350	27	8,470	30.7		298	28.4
300	27	9,543	-39.4		298	31.7
250	26	10,761	48.6		294	34.0
200	26	12,195	-57.3		293	38.7
175	26	13,031	59.8		293	36.3
150	26	13,986	-62.6		291	35.0
125	25	15,100	-64.5		293	30.9
100	24	16,456	65.8		292	23.9
80	24	17,814	63.8		292	12.8
60	24	19,594	58.9		276	3.3
50	22	20,742	56.9		280	2.3
40	19	22,159	-54.5		310	4
30	17	24,013	-52.3		84	4.7
20	6	26,658	-50.5			
15						

TUCSON, ARIZ. (923 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	781	30.6	23	359	1.7
1,000	30	52				
950	30	517				
900	30	1,004	30.7	20	337	9.3
850	30	1,511	26.7	21	339	8.0
800	30	2,042	22.4	25	333	5.2
750	30	2,600	17.5	31	284	1.2
700	30	3,182	12.4	36	157	1.9
650	30	3,796	6.9	42	133	1.5
600	30	4,450	1.6	45	126	6.6
550	30	5,143	- 3.6	42	119	7.0
500	29	5,892	- 8.2		103	3.7
450	29	6,711	-12.9		7	1.0
400	29	7,592	-19.2		315	2.7
350	29	8,572	-26.2		304	5.6
300	29	9,668	-34.5		293	9.7
250	28	10,918	-43.5		292	15.7
200	27	12,387	-53.8		292	22.9
175	27	13,233	-59.3		290	24.1
150	27	14,185	-65.1		291	22.3
125	27	15,280	-70.3		288	15.2
100	27	16,594	-72.7		284	7.0
80	24	17,913	-69.5		348	1.6
60	22	19,665	-61.2		72	8.5
50	22	20,805	-58.1		82	13.4
40	20	22,219	-55.5		97	14.0
30	12	24,051	-52.5		86	17.1
20						
15						

VERA CRUZ, MEXICO (1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	13	27.6	76		
1,000	29	100	26.9	76		
950	29	550	23.2	76		
900	29	1,022	20.4	71		
850	29	1,514	17.3	69		
800	29	2,029	14.2	70		
750	29	2,586	10.9	70		
700	29	3,145	7.9	63		
650	29	3,760	4.5	62		
600	28	4,403	1.2	58		
550	28	5,104	- 2.6	54		
500	27	5,849	- 6.8	52		
450	26	6,682	-11.3	42		
400	24	7,564	-16.8	41		
350	21	8,550	-23.9			
300	21	9,657	-32.2			
250	18	10,916	-42.1			
200	17	12,385	-54.5			
175	13	13,227	-61.4			
150	8	14,167	-68.6			
125						
100						
80						
60						
50						
40						
30						
20						

WASHINGTON, D. C. (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	88	17.8	77	85	0.6
1,000	30	159	18.4	70	27	.8
950	30	603	17.0	63	266	2.9
900	30	1,058	13.9	67	274	5.1
850	30	1,538	11.4	67	279	10.5
800	30	2,043	8.9	60	277	13.2
750	30	2,585	6.5	51	270	15.0
700	30	3,140	3.4	50	273	16.3
650	30	3,743	.4	48	271	19.0
600	30	4,376	- 3.3	49	269	20.6
550	30	5,059	- 7.2	46	272	22.0
500	30	5,796	-11.9	42	268	22.9
450	30	6,602	-17.3	42	267	25.6
400	30	7,468	-23.6	42	269	30.1
350	30	8,428	-30.9	42	267	29.3
300	30	9,503	-39.1		262	34.0
250	30	10,725	-48.5		262	35.4
200	30	12,162	-56.5		260	37.1
175	30	13,002	-59.3		263	38.9
150	30	13,959	-62.4		267	38.3
125	25	15,059	-64.1		273	33.8
100	23	16,426	-63.3		271	20.0
80	20	17,793	-61.2			
60	17	19,599	-57.5		255	5.2
50	16	20,756	-55.6		154	2.5
40	16	22,178	-54.7		168	4.3
30	14	24,044	-52.5		101	10.3
20	10	26,696	-49.8			

WINNEMUCCA, NEV. (869 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,310	19.8	27	260	3.3
1,000	30	71				
950	30	524				
900	30	1,000				
850	30	1,501	22.3	24	277	6.0
800	30	2,024	18.3	25	279	7.8
750	30	2,580	13.7	28	262	8.0
700	30	3,148	8.7	33	239	8.0
650	30	3,759	3.8	37	230	11.8
600	30	4,400	- 1.0	40	227	13.8
550	30	5,087	- 5.8	34	238	19.0
500	29	5,826	-10.8		243	22.5
450	27	6,635	-16.4		246	23.3
400	27	7,501	-23.1		248	28.0
350	27	8,463	-30.8		250	31.1
300	27	9,538	-39.5		250	36.3
250	27	10,761	-48.4		254	43.5
200	27	12,199	-56.9		255	50.9
175	26	13,037	-59.5		257	45.5
150	26	13,995	-62.0		255	41.0
125	24	15,115	-64.4		255	35.0
100	22	16,476	-65.5		258	23.3
80	21	17,841	-63.0		295	13.2
60	20	19,631	-59.3		304	5.2
50	20	20,778	-57.2		350	4.7
40	19	22,198	-54.5		3	3.5
30	16	24,047	-51.7		211	4
20	13	26,695	47.7			

YAKUTAT, ALASKA (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	12	10.4	82	147	1.6
1,000	30	118	9.9	78	203	.8
950	30	543	7.7	74	148	3.5
900	30	987	5.0	75	175	4.7
850	30	1,451	2.6	75	194	5.6
800	30	1,940	1	74	217	7.0
750	30	2,462	- 2.4	67	254	8.0
700	30	3,000	- 5.5	59	266	9.1
650	30	3,582	- 9.1	54	263	8.5
600	30	4,192	-13.0	49	264	12.4
550	30	4,851	-17.4	45	280	12.0
500	30	5,558	-21.9	41	284	14.4
450	30	6,332	-27.0	38	277	18.1
400	30	7,166	-32.6	40	299	18.5
350	30	8,094	-39.0		311	16.7
300	30	9,137	-44.5		306	22.0
250	29	10,344	-48.3		300	24.1
200	26	11,803	-50.5		304	22.9
175	26	12,672	-51.2		308	22.5
150	26	13,671	-52.1		302	20.6
125	15	14,824	-51.7		308	17.5
100	12	16,237	-50.2			
80	12	17,693	-50.5			
60	7	19,672	-50.8			
50	6	20,863	-50.3			
40						
30						
20						

YUMA, ARIZ. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	105	35.6	23	268	2.9
1,000	30	53				
950	30	517	33.7	21	257	6.2
900	30	1,003	29.9	23	264	3.7
850	30	1,508	25.6	26	269	2.7
800	30	2,036	21.0	29	266	2.5
750	30	2,594	16.1	34	254	3.5
700	30	3,171	11.1	37	216	3.9
650	30	3,791	6.2	40	192	5.1
600	30	4,434	1.5	39	183	5.8
550	30	5,128	- 3.3		184	5.2
500	30	5,876	- 7.8		183	6.6
450	30	6,695	-13.5		189	7.0
400	30	7,572	-19.6		199	5.8
350	28	8,547	-27.1		248	8.0
300	26	9,636	-35.5		261	10.5
250	26	10,880	-44.5		276	15.0
200	25	12,341	-54.8		270	22.3
175	23	13,183	-60.3		275	25.1
150	22	14,129	-65.7		280	20.4
125	20	15,225	-70.7		274	16.7
100	7	16,542	-71.9			
80						
60						
50						
40						
30						
20						

*DENVER, COLO. (831 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,661	15.6	46	43	0.4
1,000	29	57				
950	29	516				
900	29	982				
850	29	1,473				
800	29	1,988	15.1	45	225	1.2
750	29	2,532	11.2	48	225	4.5
700	29	3,103	7.2	48	244	7.0
650	29	3,709	2.6	50	248	11.8
600	29	4,349	- 2.5	53	253	15.7
550	29	5,031	- 8.2	56	251	19.2
500	29	5,764	-13.9	56	254	21.0
450	29	6,564	-19.7	49	260	26.0
400	29	7,420	-25.8	45	264	31.1
350	29	8,372	-33.1		268	34.6
300	29	9,436	-41.4		263	39.6
250	29	10,647	-50.3		260	41.8
200	29	12,074	-58.2		260	42.2
175	29	12,911	-59.7		257	44.1
150	29	13,874	-60.0		260	40.0
125	29	15,007	-61.6		264	35.5
100	29	16,382	-63.7		261	19.2
80	29	17,747	-63.7		276	11.7
60	25	19,526	-59.4		3	1.9
50	24	20,672	-56.7		51	3.7
40	22	22,088	-55.0		97	6.0
30	21	23,928	-53.0		66	4.1
20	15	26,578	-49.6		62	2.9
15	11	28,500	-46.7		73	4.5

* OGDEN, UTAH (853 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,450	15.6	42	64	3.1
1,000	31	69				
950	31	522				
900	31	988				
850	31	1,475			88	3.7
800	31	1,988	13.0	42	251	2.1
750	31	2,534	8.8	47	262	4.9
700	31	3,092	4.3	51	245	6.8
650	31	3,695	- .5	54	245	8.5
600	31	4,325	- 5.4	54	237	12.4
550	31	5,003	-10.4	57	234	16.5
500	31	5,727	-15.6	52	238	18.8
450	31	6,521	-21.5	52	243	18.6
400	31	7,370	-27.8	50	244	21.4
350	31	8,315	-35.0	48	245	25.1
300	31	9,372	-42.5		241	30.3
250	31	10,579	-50.8		246	37.3
200	30	12,005	-56.1		251	38.3
175	30	12,850	-57.3		254	37.9
150	30	13,824	-57.0		256	34.0
125	30	14,974	-58.7		257	27.2
100	29	16,367	-60.3		258	19.6
80	29	17,756	-60.5		248	10.3
60	26	19,561	-58.2		246	3.3
50	25	20,716	56.1		299	.8
40	23	22,140	-54.6		73	3.9
30	21	23,995	-52.6		96	7.6
20	13	26,659	-48.7		107	5.2
15	9	28,543	-46.6			

* RANTOUL, ILL. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	227	15.9	70	183	3.9
1,000	31	135				
950	31	583	16.1	63	215	9.7
900	31	1,032	13.9	61	239	12.8
850	31	1,513	12.0	54	264	16.5
800	31	2,019	9.7	51	280	16.5
750	31	2,564	6.6	57	281	22.1
700	31	3,116	3.3	54	284	24.1
650	31	3,715	- .5	55	283	27.0
600	31	4,349	- 4.4	52	282	28.9
550	31	5,030	- 8.7	49	283	31.3
500	31	5,762	13.3	45	284	34.6
450	31	6,563	-18.6	40	285	36.9
400	31	7,423	-24.9	36	285	39.0
350	31	8,380	-32.0		282	43.7
300	31	9,451	-40.0		280	48.2
250	31	10,671	-49.3		281	53.2
200	31	12,102	-58.4		281	56.1
175	31	12,935	-61.8		281	55.6
150	31	13,884	-62.9		282	53.4
125	30	15,004	-63.3		286	41.8
100	25	16,354	-63.1		286	31.5
80	19	17,739	-62.1		292	18.5
60	17	19,530	-58.7		299	7.2
50	17	20,682	-56.3		304	4.7
40	16	22,102	-53.9		335	3.9
30	14	23,956	-52.0		67	2.1
20	10	26,612	-49.3		69	3.1
15	7	28,503	-46.8			

* Air Force data for May 1956. June data will be included in the October issue of this publication.

Note: All observations scheduled at 0300, G C T except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. SEPTEMBER 1956

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°

ALBUQUERQUE, N. MEX.

Date	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Sept.									
1------	0.61	0.71	0.83	1.00	1.23	1.07	0.88	0.73	0.63
2------	.61	.73	.96	1.07	1.27	1.11	.79	.67	.58
3------	----	----	----	1.12	1.29	1.12	.98	.86	.75
4------	.71	.82	.93	1.07	1.25	1.08	----	----	----
5------	.65	.77	.89	1.05	1.24	----	.94	.85	.72
6------	D.36	D.53	D.66	----	----	----	----	----	----
7------	----	----	----	----	1.26	1.10	.94	.82	.70
8------	----	----	----	.98	----	1.03	----	----	----
9------	.73	.82	.92	1.07	1.25	1.13	.95	.84	.73
10-----	.74	.83	.96	1.06	1.27	1.08	.94	.83	.73
11-----	.82	.93	1.03	1.15	1.33	1.25	1.15	1.04	.96
12-----	.83	.94	1.04	1.17	1.35	1.20	1.06	.95	.85
13-----	.85	.94	1.03	1.16	H1.27	H1.11	1.04	.95	.81
14-----	.75	.85	.97	1.11	1.27	1.17	1.03	.89	.80
15-----	.75	.87	.98	1.13	1.29	1.20	1.08	.97	.87
16-----	.86	.94	1.05	1.19	1.36	1.22	1.10	.98	.90
17-----	----	----	- --	----	1.26	1.03	.90	.78	.68
18-----	.70	.81	.93	1.08	1.29	1.15	1.04	.87	.81
19-----	.75	.85	.97	1.12	1.25	1.17	1.03	.91	.81
20-----	.70	.75	.87	1.03	1.25	1.06	----	----	----
21-----	----	----	----	1.09	----	1.10	.98	.86	.74
22-----	.81	.91	1.01	1.14	1.32	----	----	----	.84
23-----	- --	H.67	H.80	H.96	H1.20	1.10	.99	.85	.70
24-----	----	----	----	H.95	H1.21	----	----	----	----
25-----	----	.71	.85	----	1.24	----	----	----	----
26-----	----	----	----	----	1.27	----	----	----	----
27-----	----	----	----	----	Cloudy	----	----	----	----
28-----	.65	.77	.90	1.06	----	----	----	----	----
29-----	.64	.76	.90	1.07	1.25	1.16	.88	.72	.61
30-----	----	----	----	----	Cloudy	----	----	----	----
Averages	.71	.81	.93	1.08	1.27	1.13	.98	.86	.76

TABLE MOUNTAIN, CALIF.

Date	Air mass								
	5.0	4.0	3.0	2.0	*0.75	2.0	3.0	4.0	5.0
Sept.									
1------	----	----	----	HI1.34	----	----	----	----	----
3------	----	----	----	HM1.39	----	----	----	----	----
6------	----	----	----	HI1.31	----	----	----	----	----
8------	----	----	----	HI1.33	----	----	----	----	----
12-----	----	----	----	HS1.45	----	----	----	----	----
13-----	----	----	----	HS1.46	----	----	----	----	----
14-----	----	----	----	HS1.43	----	----	----	----	----
15-----	----	----	----	HS1.48	----	----	----	----	----
16-----	----	----	----	HS1.51	----	----	----	----	----
17-----	----	----	----	HI1.32	----	----	----	----	----
18-----	1.07	1.16	1.39	HM1.39	----	----	----	----	----
21-----	----	----	----	HI1.40	----	----	----	----	----
24-----	----	----	----	HM1.39	----	----	----	----	----
30-----	----	----	----	HM1.39	----	----	----	----	----
Averages	1.07	1.16	1.27	1.40	----	----	----	----	----

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°

MADISON, WIS.

Date	Air mass								
	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0
Sept.									
2-----	0.81	0.93	1.06	1.22	1.39	1.18	0.96	0.80	0.76
3-----	.62	.71	.88	1.06	1.12	----	----	----	----
7-----	.89	.97	1.09	1.26	1.38	----	----	----	----
14----	.86	.99	Fc<45°	- --	----	----	----	----	----
17----	1.01	1.09	1.19	1.29	----	----	----	----	----
20----	.92	1.00	1.12	----	----	----	----	----	----
23----	.76	.86	1.06	1.23	Cu	1.21	1.04	.89	.75
24----	.86	.98	1.09	1.29	1.37	Ci	----	----	----
25----	.62	.76	.96	1.16	Ac	----	----	----	----
27----	.46	.59	.68	.93	1.09	----	----	----	----
30----	----	----	----	----	1.44	.44	----	----	----
Averages	.78	.89	1.01	1.18	1.30	.94	1.00	.85	.76

BLUE HILL, MASS.

Date	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
Sept.									
3-----	----	----	1.05	1.17	----	----	----	0.91	0.69
6-----	----	----	.78	.97	-- -	----	----	----	----
9-----	0.76	0.87	.98	1.11	----	----	----	----	----
10----	.84	.93	1.06	1.19	----	1.16	----	----	----
11----	----	.82	.95	1.11	----	----	----	----	----
15----	----	----	1.03	1.17	----	----	----	----	----
18----	----	----	1.06	1.20	----	1.20	1.04	----	----
19----	.83	.91	1.01	1.19	----	----	----	----	----
21----	.93	1.01	1.12	1.27	1.37	1.20	1.01	.87	.76
25----	.67	.79	.95	1.08	----	----	----	----	----
30----	----	----	1.09	1.24	----	----	----	----	----
Averages	.81	.89	1.01	1.15	(1.37)	1.19	.99	(.83)	(.73)

WASHINGTON, D. C. (WBCO)

Date	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Sept.									
17----	----	----	SK0.80	SK1.02	----	----	----	----	----
19----	----	----	1.06	----	----	----	----	----	----
21----	----	0.96	1.07	----	----	----	SK1.00	----	SK0.70
Averages	----	.96	.98	1.02	----	----	1.00	----	.70

HI	Intense haze	H	Haze	* Extrapolated
HM	Moderate haze	D	Dust	
HS	Slight haze	SK	Slight smoke	

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

SEPTEMBER 1956

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

								Avg								Avg								Avg
											Discontinued September 2, 1956													

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

								Avg								Avg								Avg
											Discontinued September 2, 1956													

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date------------	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys--- --	69	356	293	344	37	367	322	241	370	364	151	250	252	315	33	248	38	431	466	77	490	460	89	293
Date----- --- --	24	25	26	27	28	29	30																	
Langleys- ---- -	77	291	293	124	39	363	314	215																

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

								Avg								Avg								Avg
											Discontinued September 2, 1956													

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date------------	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys-------	76	126	106	191	120	114	116	121	70	181	175	212	176	184	63	151	56	115	104	81	61	94	138	93
Date------------	24	25	26	27	28	29	30																	
Langleys--------	126	162	192	182	58	179	96	142																

Note: Langley is the unit used to denote one gram calorie per square centimeter

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month SEPTEMBER 1956

Date.	**1**	**2**	**3**	**4**	**5**	**[illegible]**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**Avg.**
Langleys. . .	296	255	272	*230	*136	*286	*106	277	297	142	270	248	**	276	266	257	151	212	*244	*250	225	233	252	*65	*10	*0	*36	87	124	234		205

* Estimated values owing to occurrence of rain during period While rain is falling, radiation is assumed to be zero

** Radiometer inoperative.

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of Bermuda grass. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh The instrument with which they were measured has not been checked by the Weather Bureau

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. SEPTEMBER 1956

	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.	Dodge City, Kans.
1956																			
Sept. 3-----	154	689	485	574	609	297	82	600	583	611	565	558	334	575	434	663	581	574	638
Sept. 4-----	353	679	196	449	600	334	---	153	501	598	458	294	540	455	332	646	560	571	634
Sept. 5-----	342	670	98	376	587	256	334	392	512	581	491	420	622	379	352	556	529	539	552
Sept. 6-----	332	617	165	252	412	201	352	568	408	558	445	511	668	475	555	338	603	542	561
Sept. 7-----	258	659	129	147	327	222	100	556	170	373	173	327	639	417	382	447	609	556	641
Sept. 8-----	302	642	158	287	440	71	61	419	413	528	429	287	663	429	425	622	591	559	632
Sept. 9-----	221	647	395	415	160	---	212	471	493	390	363	149	679	461	584	537	560	551	(633)
Average------	280	658	232	357	448	230	190	451	440	520	418	364	592	456	438	544	576	556	(613)
Sept. 10-----	167	641	446	475	465	112	(83)	318	544	508	543	220	678	497	632	255	533	551	(644)
Sept. 11-----	153	664	408	635	429	193	251	515	433	523	467	566	635	59	579	490	271	539	616
Sept. 12-----	125	665	457	625	523	113	189	191	263	369	258	559	646	387	586	589	514	475	631
Sept. 13-----	207	648	434	617	529	104	46	169	343	515	438	530	635	348	574	494	513	521	(628)
Sept. 14-----	90	648	437	617	199	97	138	105	349	514	330	535	679	143	568	413	399	517	609
Sept. 15-----	108	648	453	617	184	126	132	345	428	506	401	467	639	452	565	125	502	526	618
Sept. 16-----	192	658	---	498	392	175	170	474	64	505	59	624	696	248	571	318	523	521	614
Average------	149	653	439	583	389	132	(144)	302	346	491	357	500	665	305	582	383	465	521	(623)
Sept. 17-----	165	619	149	164	366	150	347	514	77	506	48	561	704	121	310	448	553	436	609
Sept. 18-----	57	628	126	608	496	135	266	505	468	448	422	570	680	262	376	560	478	265	606
Sept. 19-----	135	630	266	581	---	65	280	485	517	466	479	583	666	522	425	163	530	481	625
Sept. 20-----	49	614	289	579	---	137	217	475	126	417	106	586	573	103	560	378	519	497	604
Sept. 21-----	153	611	89	576	412	78	363	438	539	497	512	583	674	277	393	482	450	535	512
Sept. 22-----	86	624	96	323	404	86	265	445	481	496	474	587	700	258	505	250	450	517	(561)
Sept. 23-----	79	604	330	95	428	108	330	442	163	491	104	576	682	446	395	270	438	502	440
Average------	103	619	192	418	421	109	296	472	339	475	306	578	668	284	423	364	488	462	(566)
Sept. 24-----	51	521	158	98	269	104	307	452	145	466	115	573	693	115	98	565	510	495	537
Sept. 25-----	(78)	593	242	323	275	78	237	431	300	450	272	522	684	161	98	442	489	498	537
Sept. 26-----	42	597	357	588	176	94	269	443	346	440	339	503	696	499	---	473	485	474	(537)
Sept. 27-----	61	566	53	581	350	90	249	389	224	319	235	548	651	479	384	520	477	390	505
Sept. 28-----	162	505	358	565	270	76	37	152	72	211	77	570	689	480	500	487	437	487	504
Sept. 29-----	199	591	362	332	97	101	84	282	398	437	378	281	698	470	287	501	409	468	(553)
Sept. 30-----	50	526	223	460	320	73	141	417	336	443	318	479	656	393	514	325	503	459	540
Average------	(92)	557	250	421	251	88	189	367	260	395	248	497	681	371	314	473	473	467	(530)

	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.	Glasgow, Mont.	Grandby, Col.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N C.	Indianapolis, Ind.	Inyokern, Calif.	Lake Charles, La	Lander, Wyo.
1956																		
Sept. 3-----	581	584	173	673	625	380	586	561	446	434	543	387	550	(677)	569	709	470	620
Sept. 4-----	471	540	279	638	634	365	470	570	232	468	240	291	---	636	511	705	406	567
Sept. 5-----	480	510	403	627	621	366	539	569	558	621	619	298	376	482	506	690	558	534
Sept. 6-----	430	500	344	626	401	360	(383)	548	539	601	(569)	429	478	563	486	687	620	643
Sept. 7-----	531	134	437	292	566	349	588	565	534	442	505	171	137	633	532	705	619	619
Sept. 8-----	183	491	377	277	566	261	650	561	470	481	480	576	460	231	538	691	612	288
Sept. 9-----	559	570	400	661	420	84	626	510	---	359	529	564	684	553	535	---	616	430
Average------	462	475	345	542	548	309	(549)	555	463	486	(498)	388	448	(546)	525	698	557	529
Sept. 10-----	201	576	402	(690)	523	264	604	559	---	501	368	575	687	647	342	673	617	455
Sept. 11-----	505	433	401	666	571	133	594	565	---	556	490	528	668	636	346	660	624	552
Sept. 12-----	523	453	221	662	607	57	588	564	395	540	266	459	644	648	476	700	614	408
Sept. 13-----	365	308	310	652	607	96	592	563	360	437	449	516	641	631	477	694	583	573
Sept. 14-----	465	359	250	(641)	605	---	589	553	344	454	499	524	645	611	361	696	564	599
Sept. 15-----	220	429	345	639	600	173	583	550	---	575	504	477	642	615	305	677	586	601
Sept. 16-----	247	121	392	628	582	139	578	542	---	475	509	485	557	611	489	681	522	565
Average------	361	383	331	(654)	585	144	590	556	---	505	441	509	641	629	400	683	587	536
Sept. 17-----	454	93	359	596	578	183	506	523	452	555	494	387	218	476	528	653	334	574
Sept. 18-----	439	488	349	630	578	66	(561)	501	---	542	485	538	634	469	462	639	565	580
Sept. 19-----	282	458	194	627	560	81	556	350	---	539	482	425	514	311	387	639	543	572
Sept. 20-----	478	142	284	622	255	114	536	530	---	510	427	523	602	468	474	646	568	558
Sept. 21-----	256	512	98	613	526	65	555	505	---	230	399	525	636	559	481	624	572	517
Sept. 22-----	232	436	368	605	576	---	515	504	---	413	506	487	431	598	450	619	469	577
Sept. 23-----	328	249	203	(542)	565	72	534	502	---	521	427	463	280	580	244	611	325	574
Average------	353	340	265	(605)	520	97	(538)	488	---	473	460	478	473	495	432	633	482	564
Sept. 24-----	499	---	231	595	535	61	515	484	---	516	220	138	50	---	501	603	569	568
Sept. 25-----	386	406	256	579	515	142	(482)	514	---	493	461	136	42	44	456	606	594	551
Sept. 26-----	485	283	136	575	428	---	560	402	---	487	460	22	631	315	439	567	570	524
Sept. 27-----	475	251	202	574	384	---	547	301	---	351	207	62	629	280	459	---	539	514
Sept. 28-----	469	101	185	563	526	209	538	496	---	297	315	165	615	251	467	546	523	393
Sept. 29-----	433	272	232	562	519	(106)	529	498	---	408	276	155	506	194	448	555	499	547
Sept. 30-----	471	335	279	515	353	123	391	488	---	410	406	434	399	208	402	602	114	332
Average------	460	275	217	566	466	(128)	(509)	455	---	423	335	159	410	215	453	580	487	490

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued

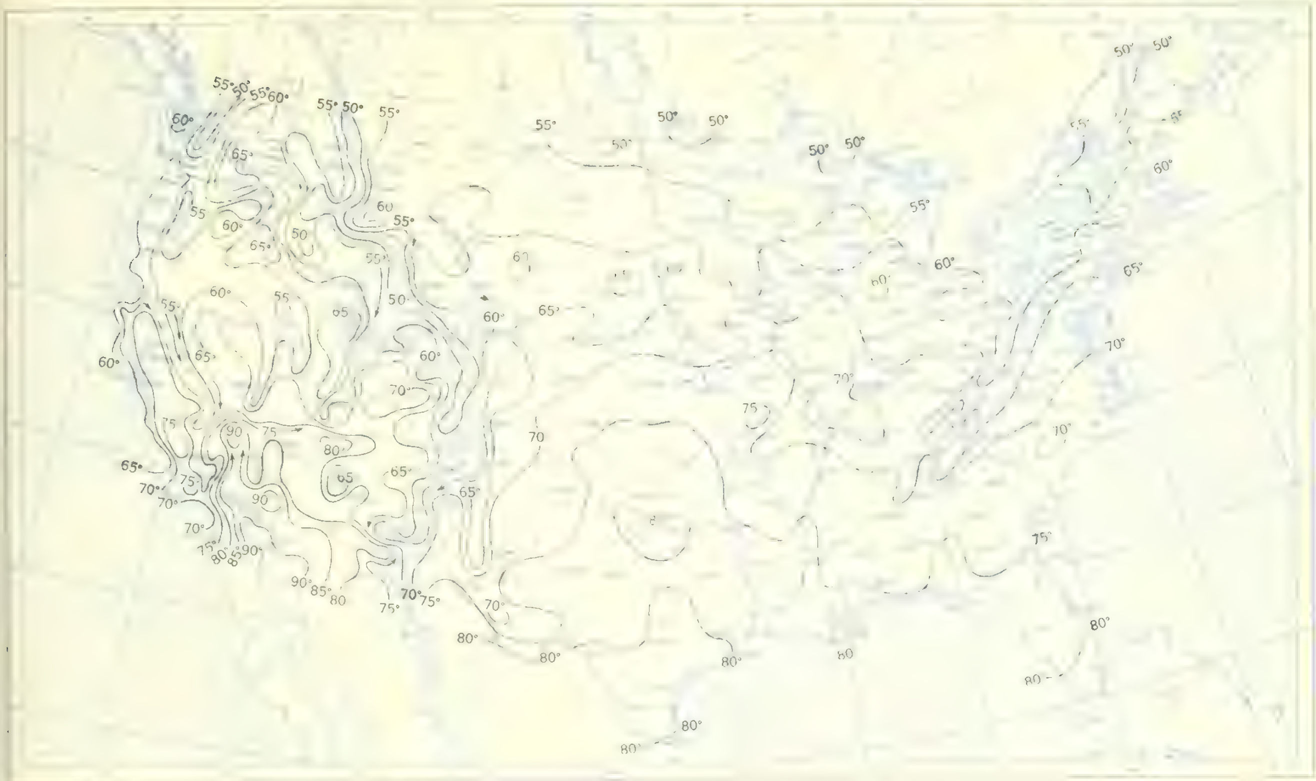
SEPTEMBER 1956

	Las Vegas, Nev.	Lemont, Ill.	Los Angeles, Calif (urban)	Los Angeles, Calif.	Madison, Wis.	Matanuska, Wis.	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Prosser 4 NE, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island Pacific Area	Washington, D. C (Silver Hill Obs.)	Winnipeg, Manitoba
1956																																					
Sept. 3-----	647	602	591	472	524	166	586	336	606	569	584	594	608	608	532	633	599	---	305	586	562	422	573	585	620	450	(510)	455	574	611	453	497	687	616	674	463	299
Sept. 4-----	664	333	588	519	416	353	564	435	482	396	578	479	545	576	507	611	482	---	164	617	299	543	605	451	580	404	508	536	572	514	446	437	656	590	---	443	307
Sept. 5-----	616	412	593	534	170	236	543	342	607	308	551	358	423	563	398	553	528	---	486	602	207	556	618	46	515	418	453	498	574	452	386	436	534	497	460	446	319
Sept. 6-----	352	591	631	614	361	396	437	329	---	279	426	156	89	587	282	(406)	422	---	611	590	524	355	574	353	266	238	271	451	509	132	424	366	591	257	(661)	389	299
Sept. 7-----	632	632	634	609	545	385	543	427	433	607	132	187	553	582	451	588	216	---	605	612	503	501	642	408	128	324	164	383	321	502	443	355	612	173	462	240	434
Sept. 8-----	562	551	624	599	352	323	537	420	578	627	443	574	656	617	(421)	593	470	---	480	589	594	645	640	529	559	410	560	462	497	552	355	382	629	565	647	595	530
Sept. 9-----	578	455	580	585	216	78	391	532	639	609	514	621	646	612	554	592	434	512	569	581	444	645	593	532	610	396	578	188	503	490	142	419	657	603	681	572	219
Average------	579	511	606	562	369	277	514	403	558	485	461	424	503	592	(450)	(568)	450	---	460	597	448	524	606	415	468	377	(435)	425	507	465	378	413	624	472	(598)	450	344
Sept. 10-----	597	471	584	583	424	232	396	254	631	575	594	556	610	594	263	601	534	491	477	590	542	568	609	(185)	566	452	557	157	378	489	536	291	679	614	662	576	232
Sept. 11-----	515	339	592	578	379	106	496	364	616	442	439	281	533	592	---	609	371	460	547	613	358	623	601	355	362	145	419	329	455	276	313	235	678	366	690	422	388
Sept. 12-----	621	501	595	580	411	181	518	354	619	497	437	293	537	584	---	578	433	539	488	587	352	595	642	57	235	282	496	344	461	390	575	396	649	228	639	---	394
Sept. 13-----	619	402	602	593	310	105	505	389	609	551	336	407	579	571	439	572	894	547	366	614	303	623	643	118	510	297	447	411	498	370	632	379	643	475	651	485	224
Sept. 14-----	608	403	---	609	368	318	493	593	608	547	381	407	580	550	289	(572)	250	536	543	607	470	574	632	560	484	186	410	292	485	248	586	410	639	466	642	449	446
Sept. 15-----	607	386	612	607	291	97	499	394	595	532	360	267	516	548	237	567	298	522	537	613	98	597	615	97	336	284	261	101	---	69	605	217	636	301	635	287	103
Sept. 16-----	615	548	576	574	377	205	429	626	592	557	75	123	571	542	---	565	52	506	517	590	427	584	611	---	48	39	254	359	486	300	526	177	639	71	456	372	369
Average------	597	436	593	589	366	178	477	425	610	529	374	333	561	569	307	(580)	404	514	497	602	364	595	622	(229)	363	241	406	285	461	306	539	301	652	360	625	432	308
Sept. 17-----	610	586	559	540	443	115	484	344	453	476	135	229	420	193	144	588	34	506	533	564	489	615	533	400	217	43	---	163	407	232	277	400	---	228	561	458	481
Sept. 18-----	588	473	536	552	383	176	305	235	581	558	551	539	609	537	398	578	404	388	541	552	489	571	591	308	540	351	---	154	389	373	397	388	---	561	474	495	380
Sept. 19-----	569	513	536	548	407	55	44	319	577	289	490	447	453	577	174	574	523	427	535	555	490	597	(559)	---	504	357	---	229	390	409	458	81	---	449	534	430	437
Sept. 20-----	579	577	505	495	495	317	118	227	565	571	127	377	594	536	477	565	98	384	533	552	470	590	594	---	270	347	381	389	180	409	592	296	---	204	644	523	454
Sept. 21-----	574	440	514	525	296	91	478	192	552	545	551	480	564	526	288	577	497	515	316	537	325	573	579	428	522	354	529	400	314	537	357	442	---	554	649	539	405
Sept. 22-----	571	294	531	497	204	148	486	299	546	521	433	206	512	510	493	566	443	496	419	535	272	553	558	310	319	398	321	403	444	381	498	337	---	314	642	247	312
Sept. 23-----	553	511	539	517	456	318	487	556	551	155	320	418	199	463	147	560	154	418	512	537	503	552	535	83	445	71	---	334	364	449	330	75	---	412	656	490	373
Average------	578	485	531	525	383	174	343	310	546	445	373	385	479	477	303	573	308	448	484	547	434	579	(564)	306	402	274	---	296	355	399	415	288	---	389	594	454	406
Sept. 24-----	577	541	533	531	464	308	462	564	524	315	187	274	226	520	55	545	125	458	508	553	472	473	(559)	193	208	330	---	235	341	459	452	292	---	219	526	246	360
Sept. 25-----	557	497	536	530	394	314	450	453	452	443	450	483	114	517	459	547	339	434	508	---	448	436	504	412	492	149	---	129	397	470	335	422	---	499	611	379	411
Sept. 26-----	456	435	503	518	404	293	443	508	468	501	331	369	417	535	471	539	486	420	497	553	427	486	532	477	407	350	236	83	333	392	597	456	---	431	597	232	389
Sept. 27-----	539	508	504	505	383	305	275	255	547	511	286	105	---	536	---	450	203	439	476	537	420	565	443	528	151	152	88	276	305	150	552	473	---	190	615	54	247
Sept. 28-----	527	499	470	512	364	261	386	408	549	508	83	44	332	496	(473)	504	358	421	421	544	306	558	(499)	464	---	191	67	96	171	134	491	454	---	49	520	75	62
Sept. 29-----	552	409	501	497	282	---	441	530	516	505	429	448	443	493	426	519	465	358	420	560	185	550	553	191	---	388	186	65	168	99	519	317	---	498	---	141	321
Sept. 30-----	552	353	520	472	(422)	---	427	563	477	454	367	130	477	461	88	442	426	465	405	558	446	285	476	370	---	168	174	281	329	351	331	168	---	294	573	381	104
Average------	537	463	510	509	(388)	296	412	469	505	462	305	265	335	508	(329)	507	343	428	462	551	386	479	(509)	376	315	247	150	166	292	301	468	369	---	311	574	215	271

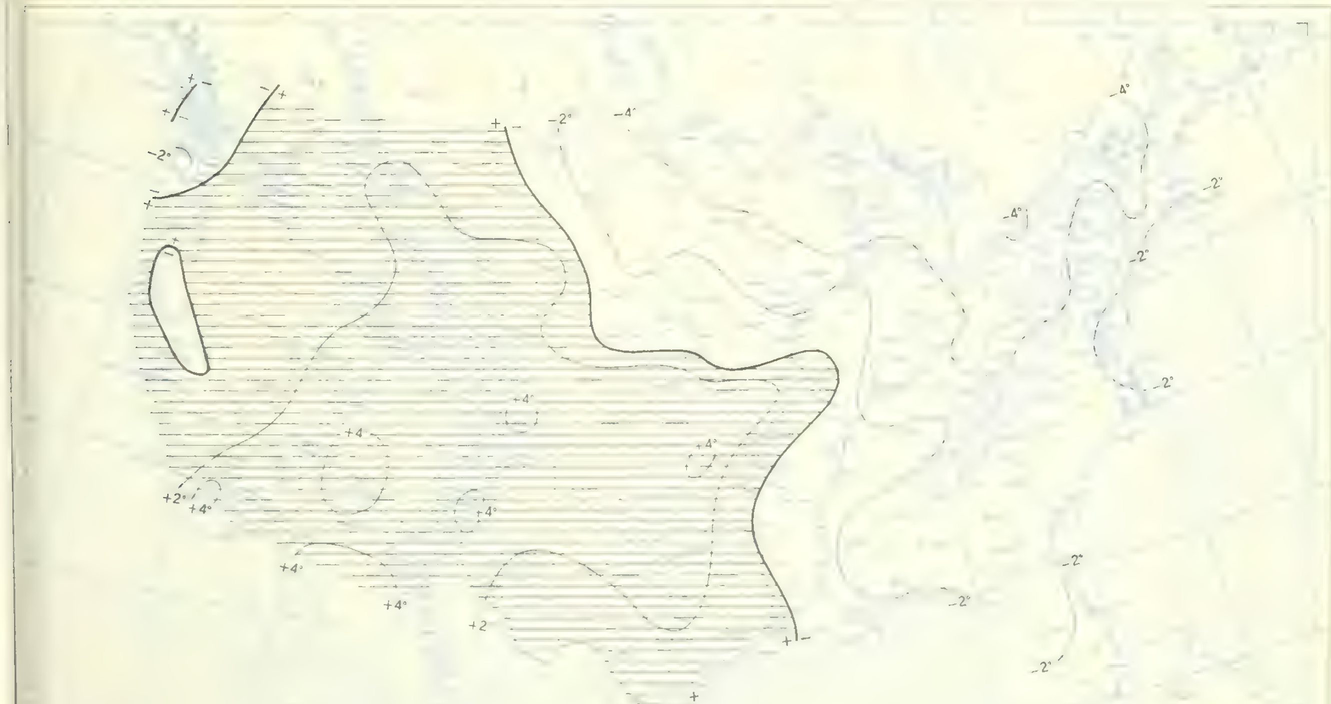
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

NWRC, Asheville, N.C. --- 12/5/56 --- 1900

Chart I. A. Average Temperature (F.) at Surface, September 1956.



B. Departure of Average Temperature from Normal (°F.), September 1956.



A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), September 1956.

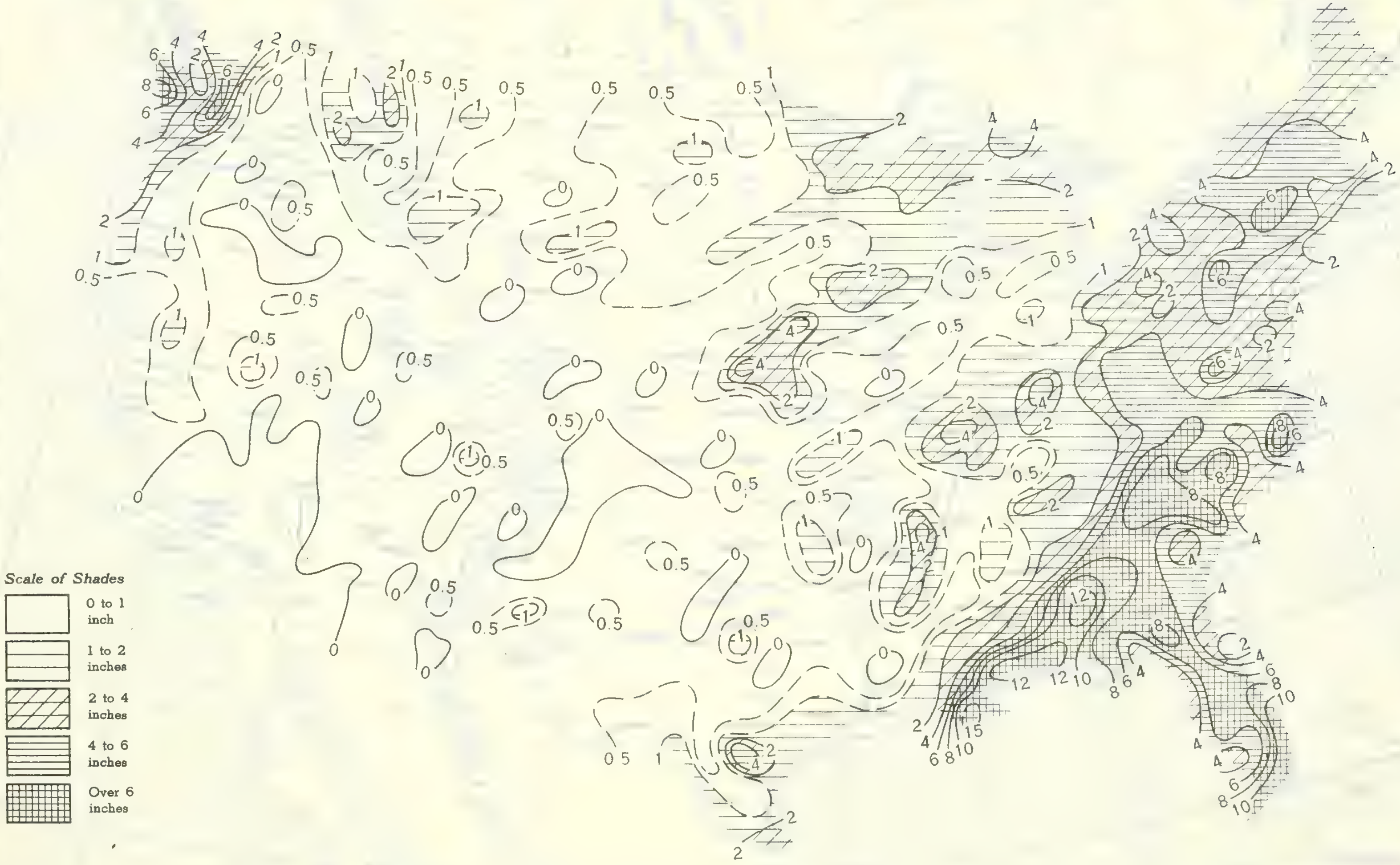
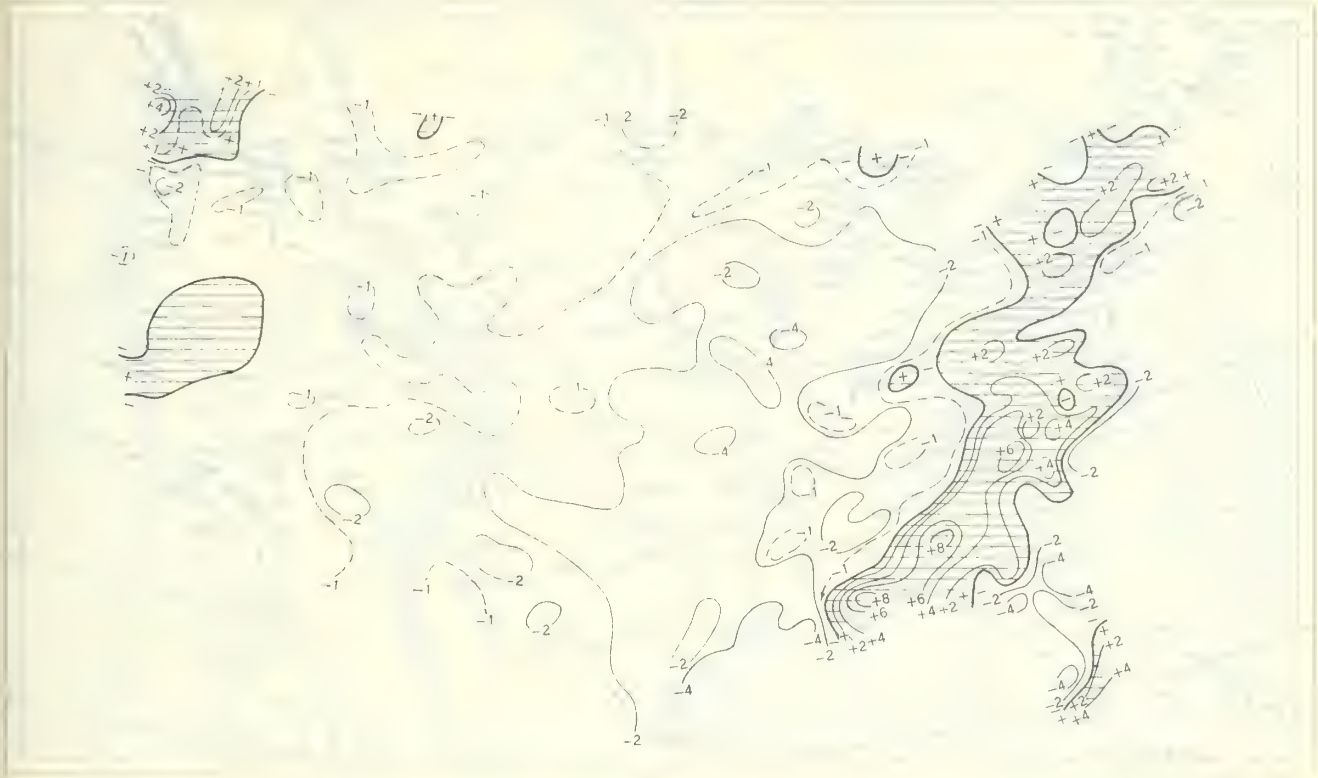
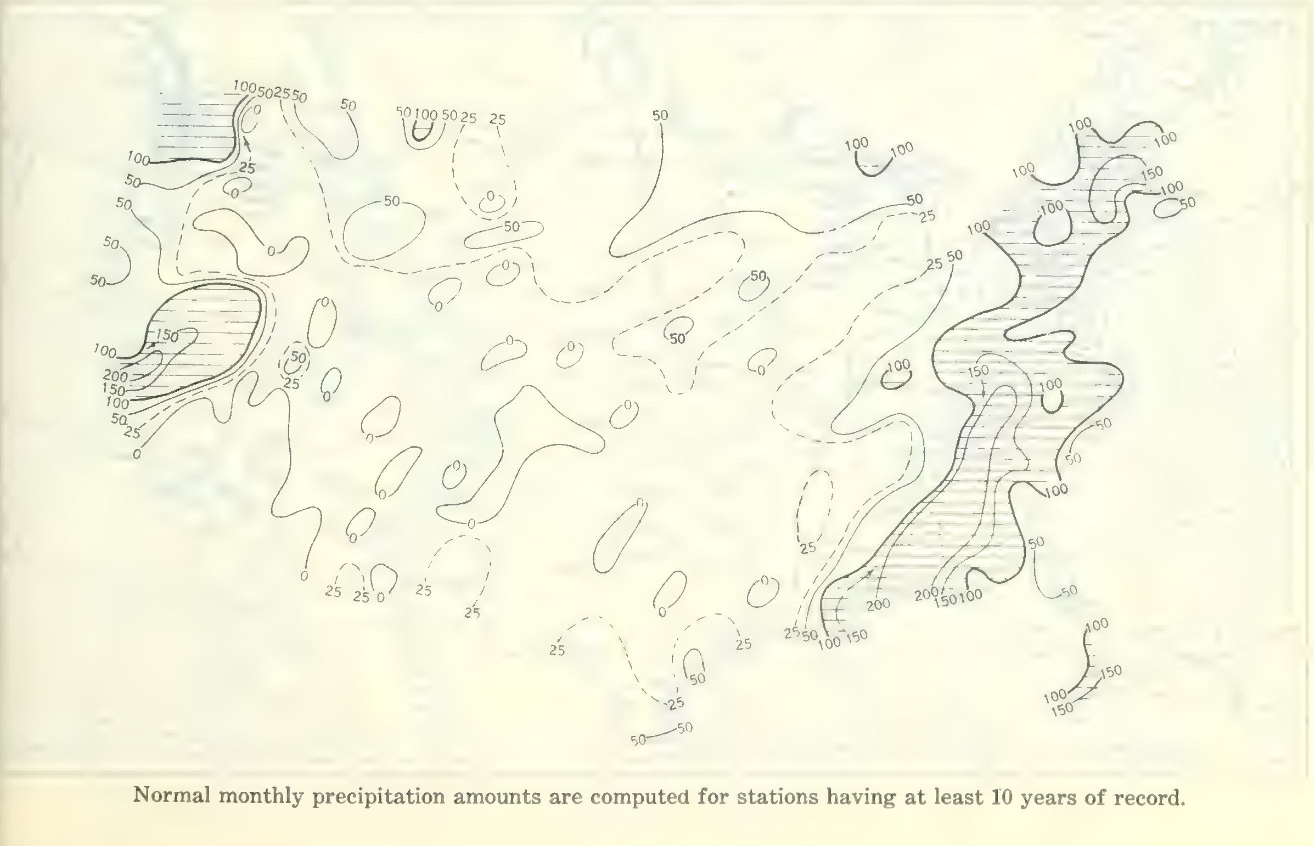


Chart III. A. Departure of Precipitation from Normal (Inches), September 1956.



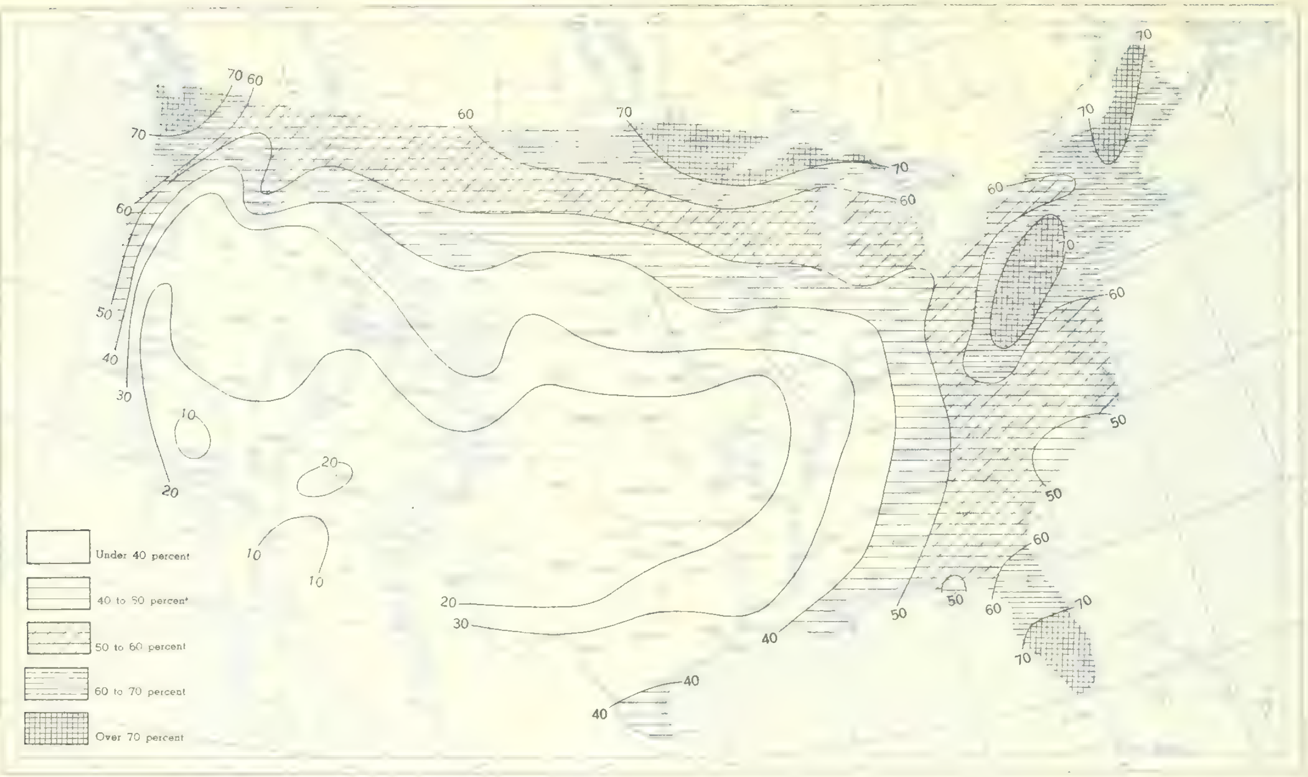
B. Percentage of Normal Precipitation, September 1956.



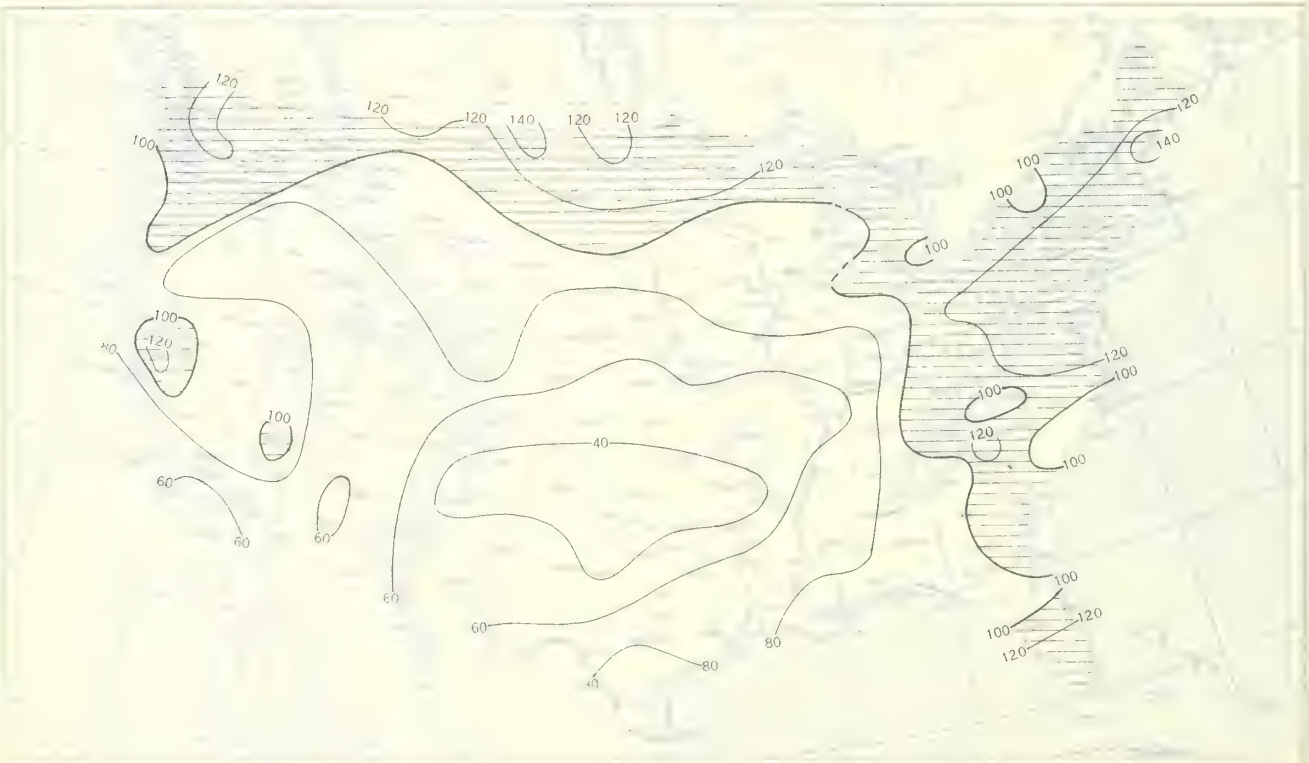
Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Based on daily precipitation records at 800 Weather Bureau and cooperative stations

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, September 1956.

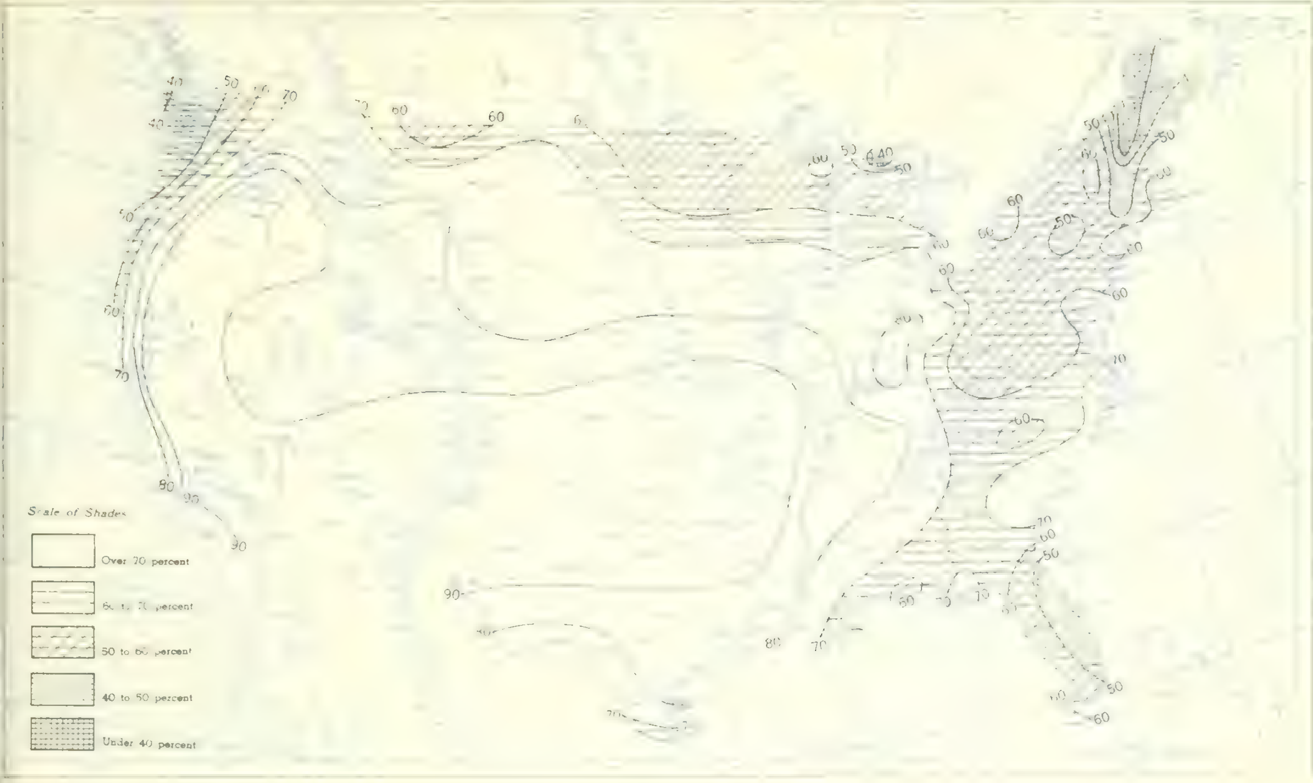


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, September 1956.

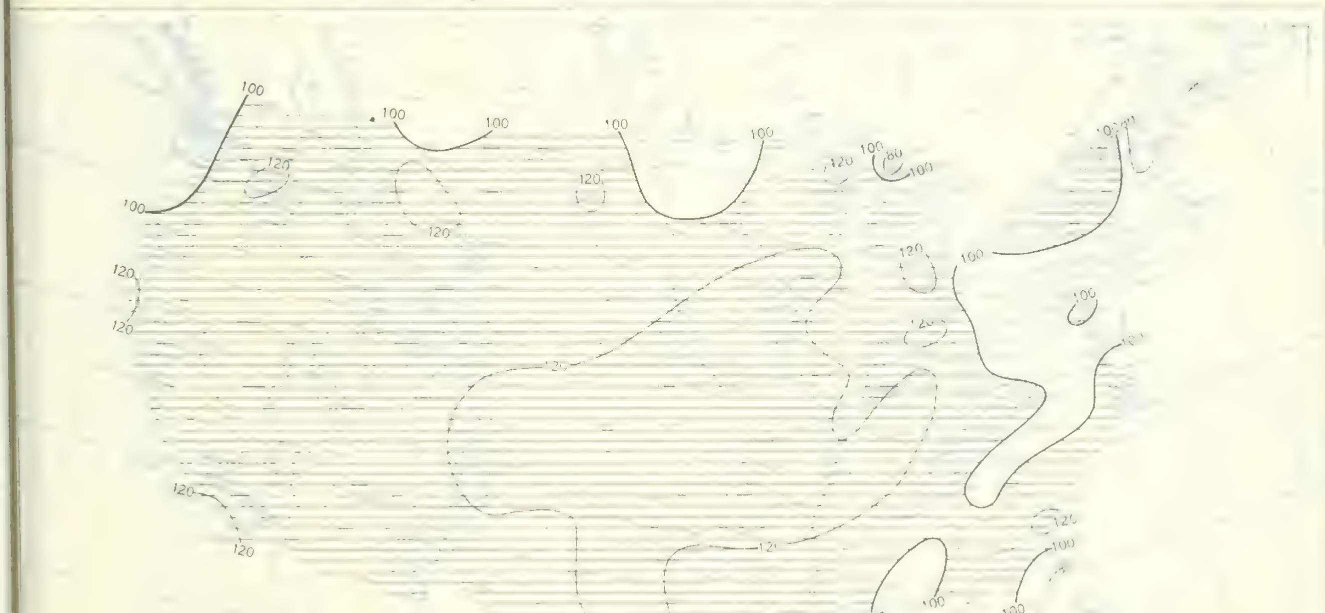


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, September 1956.



B. Percentage of Normal Sunshine, September 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, September 1956. Inset: Percentage of Mean Daily Solar Radiation, September 1956. (Mean based on period 1951-55.)

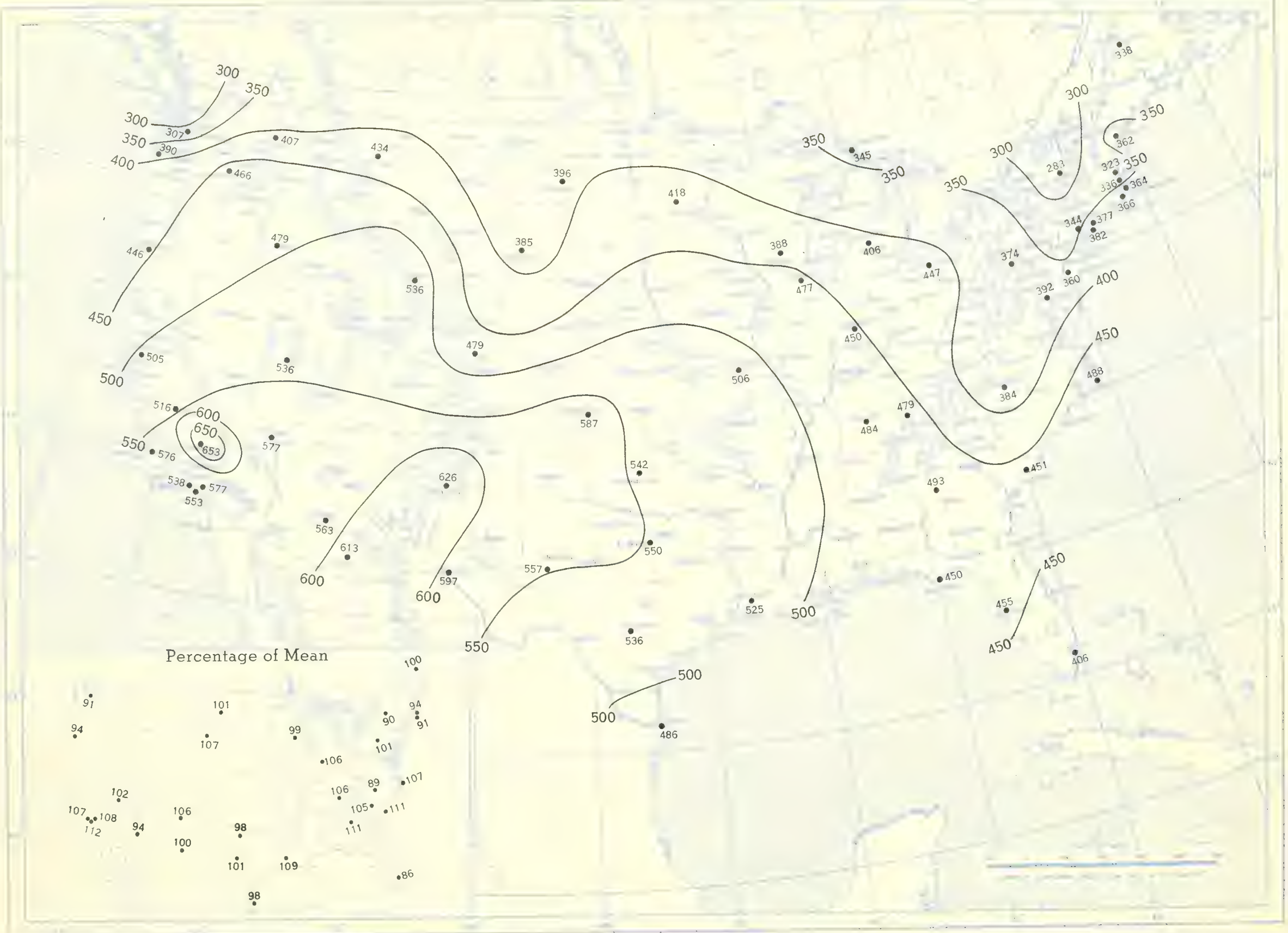
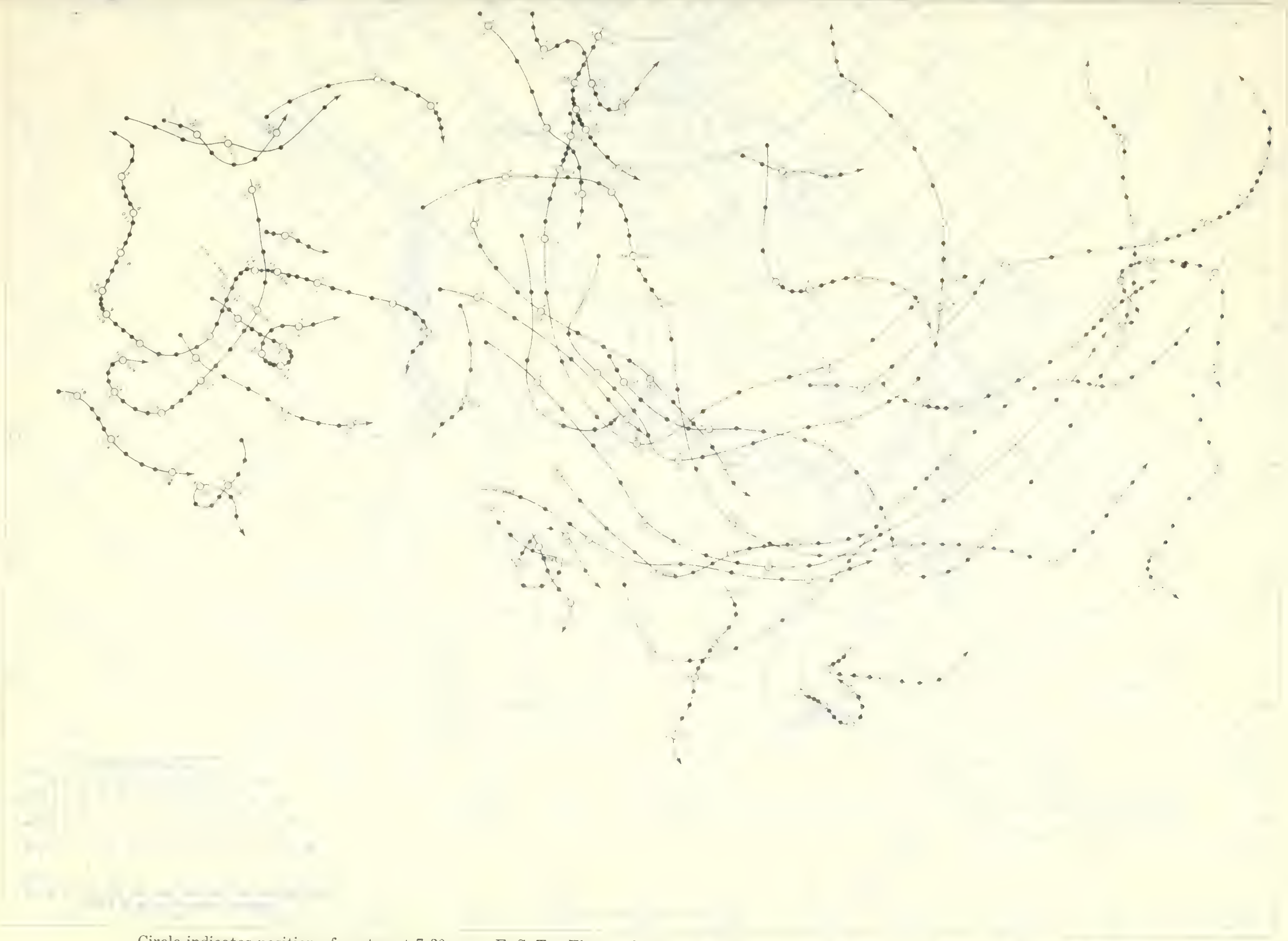
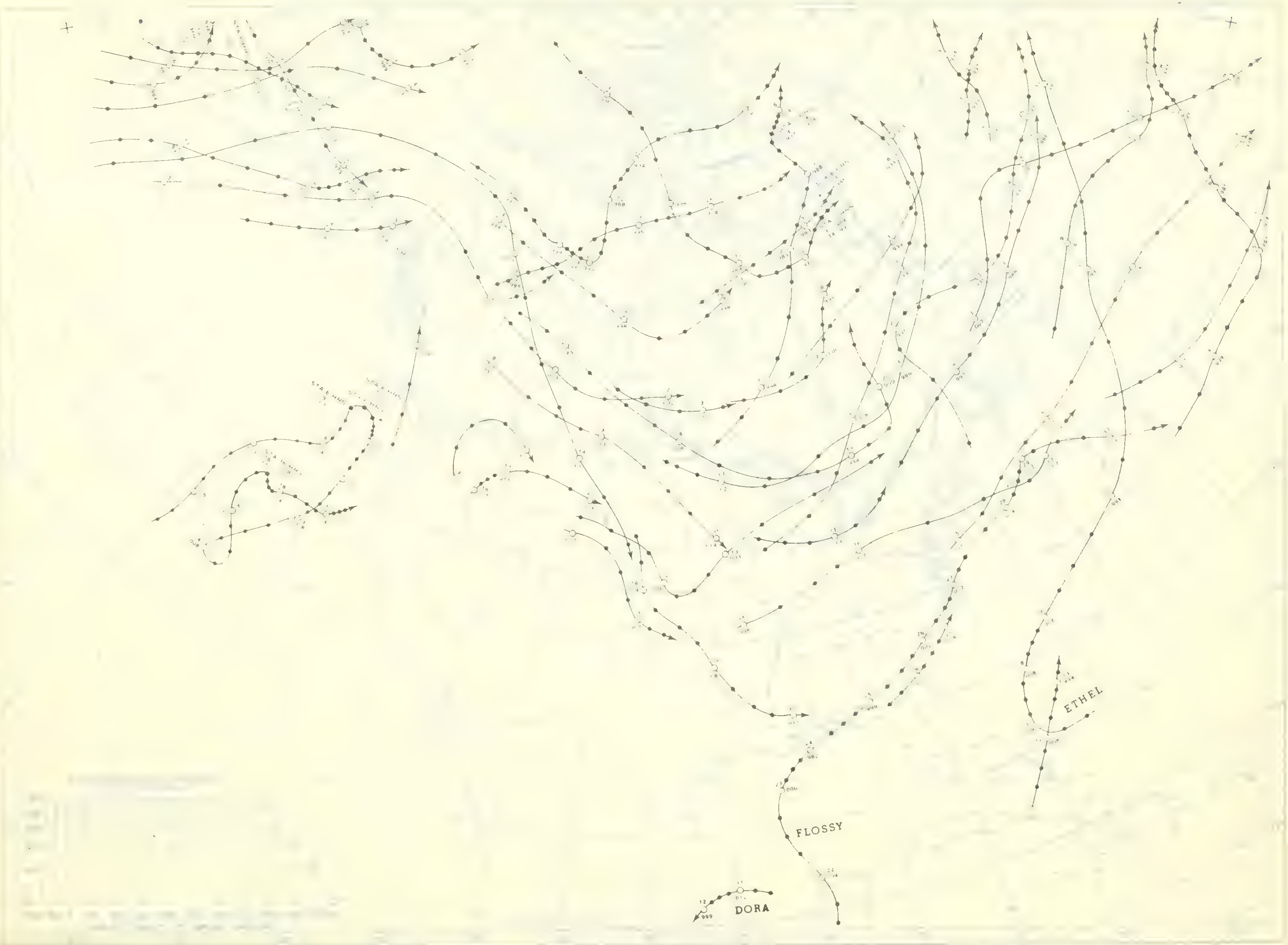


Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$). Basic data for isolines

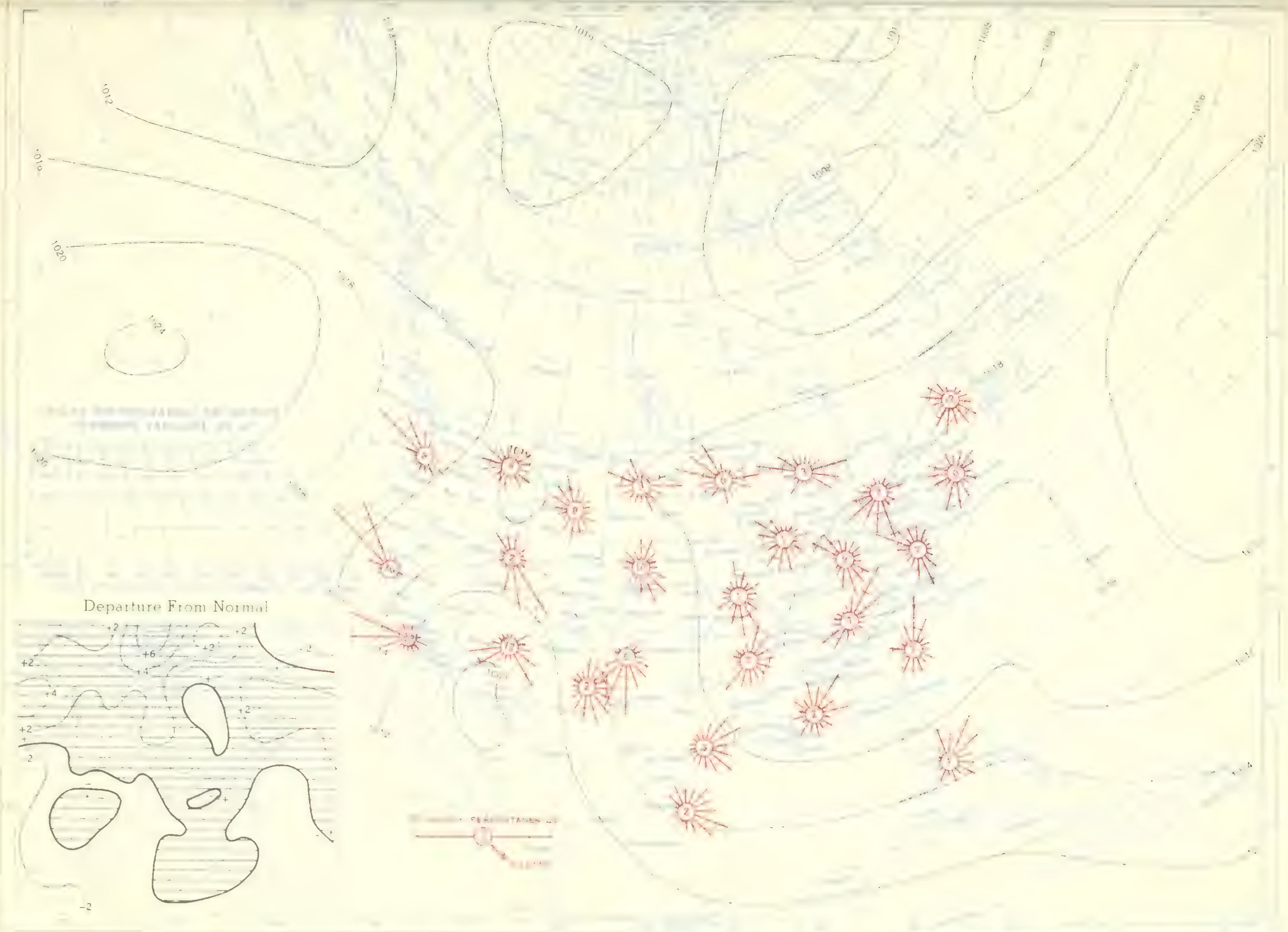


Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, September 1956.

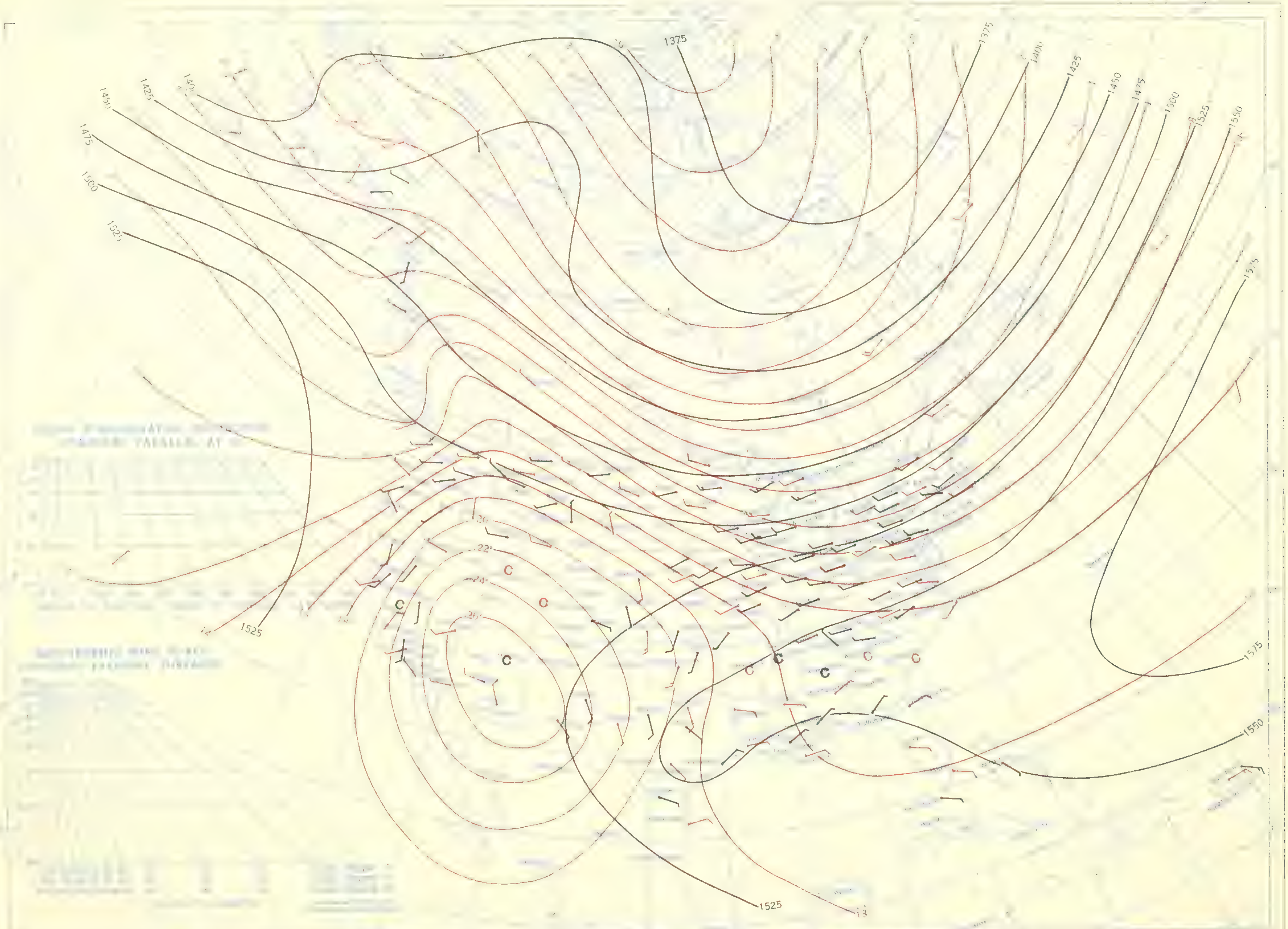


Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.



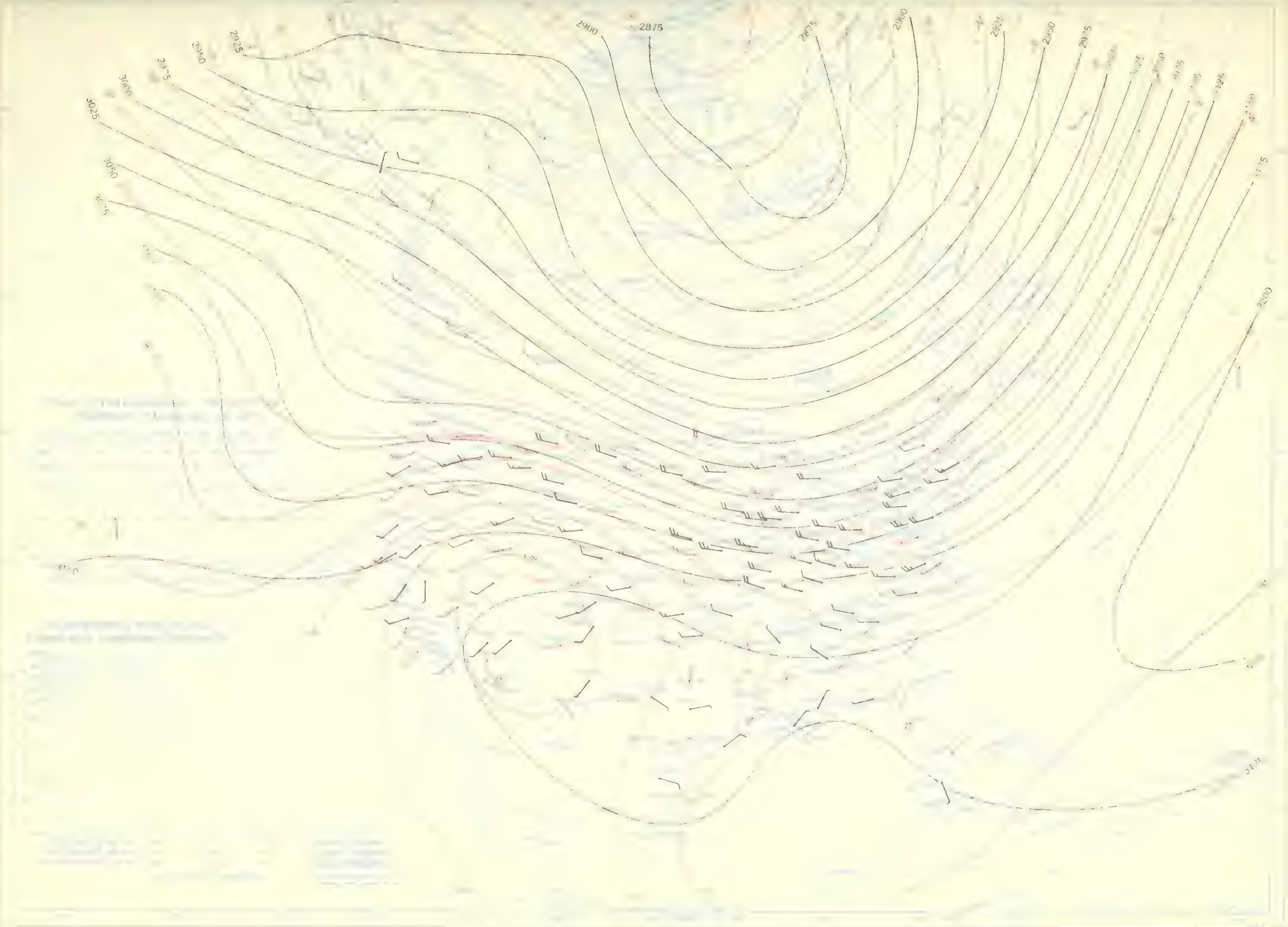
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 0300 GMT, September 1956. Average Height and Temperature, and Resultant Winds.



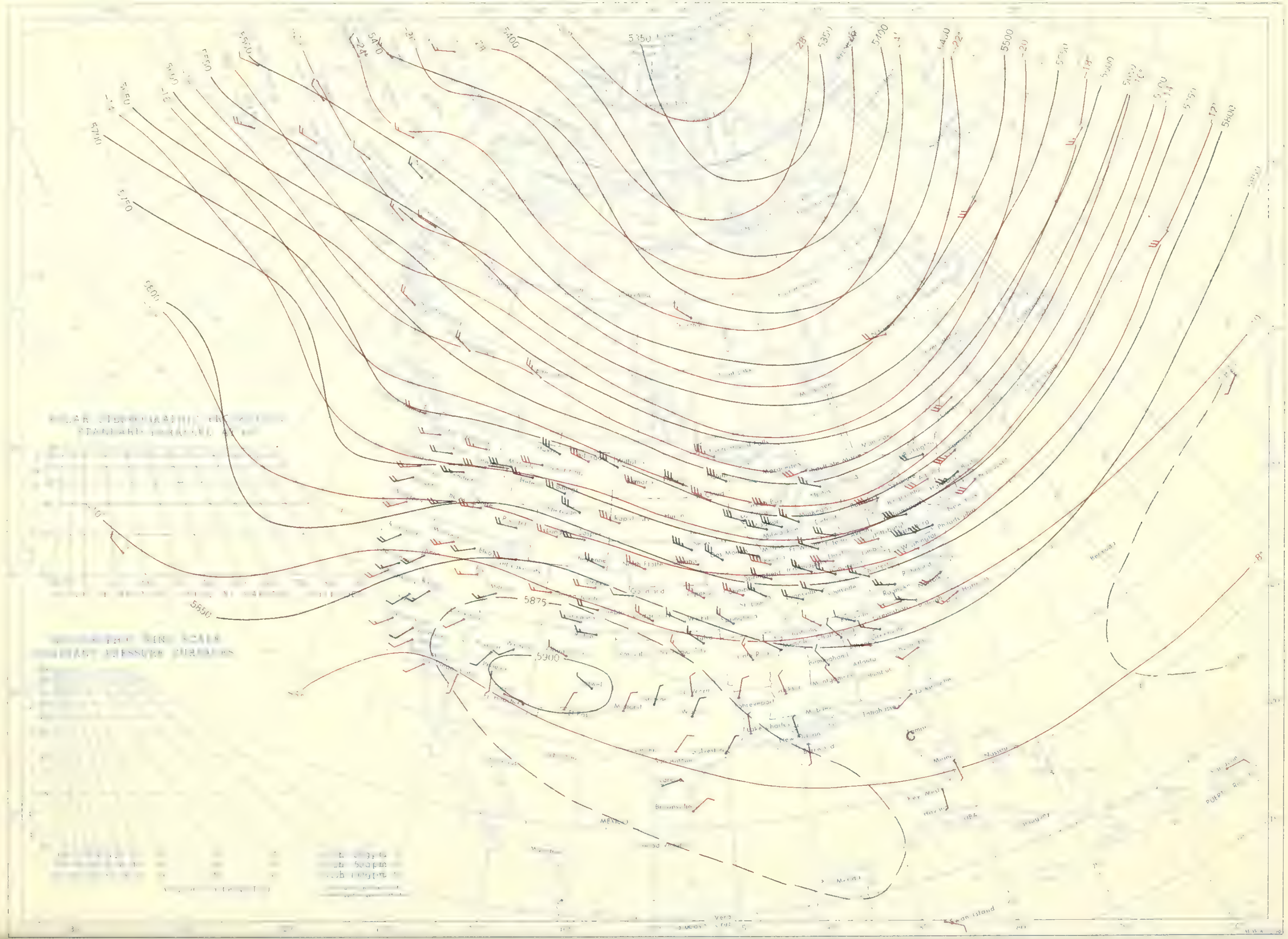
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and

Average Height and Temperature, and Resultant Winds.

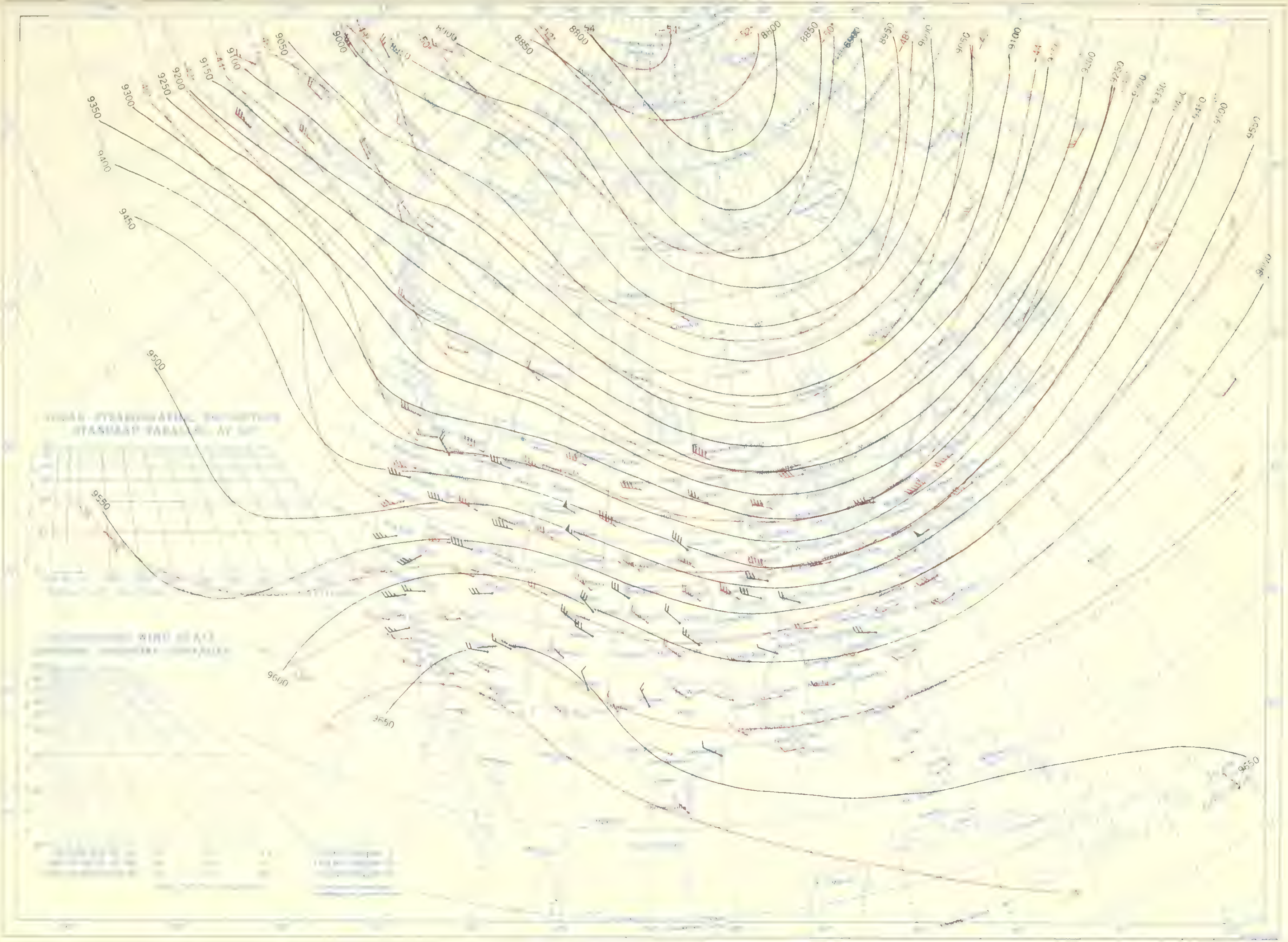


See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 0300 GMT, September 1956. Average Height and Temperature, and Resultant Winds.

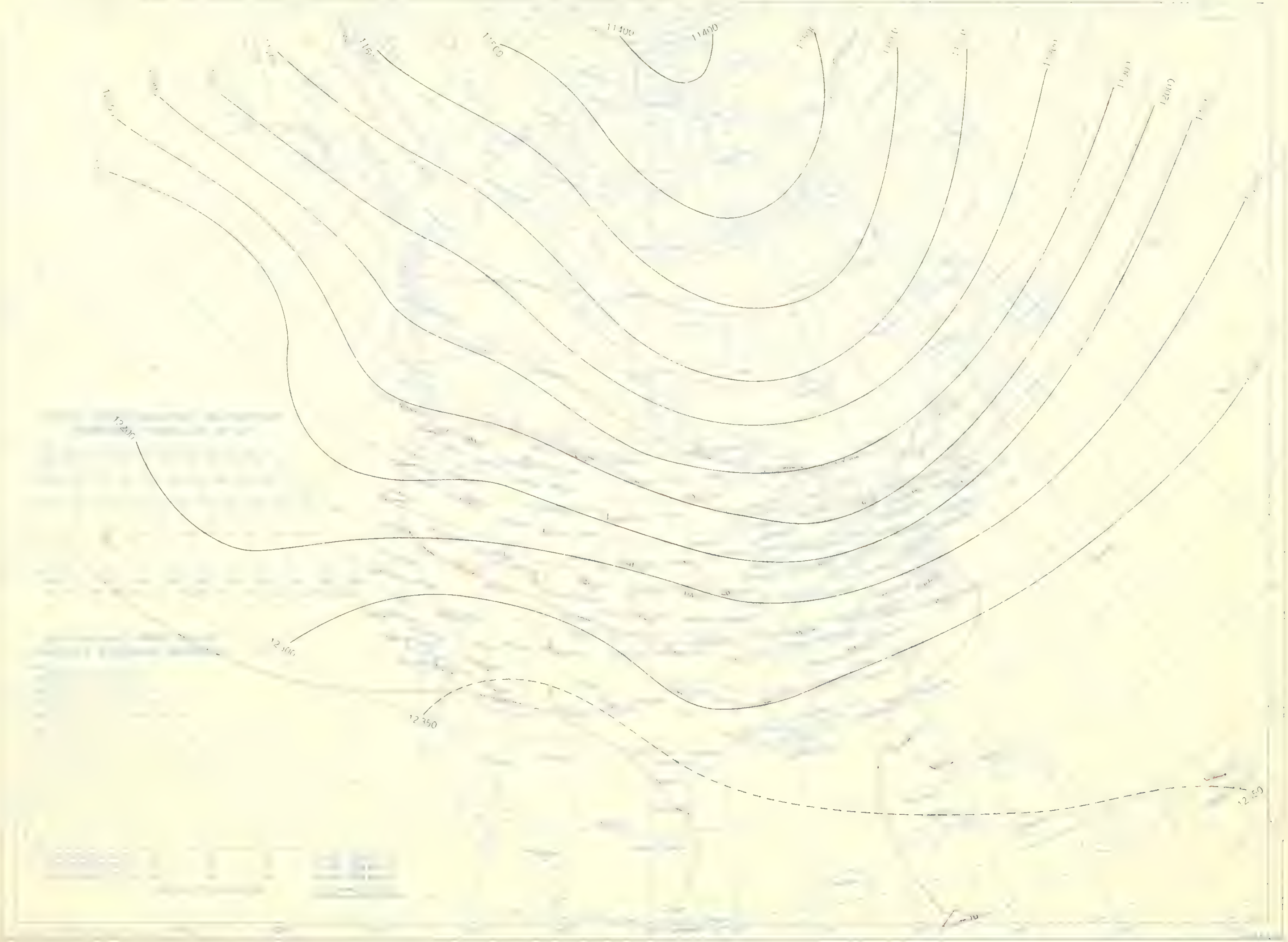


Average Height and Temperature, and Resultant Winds.



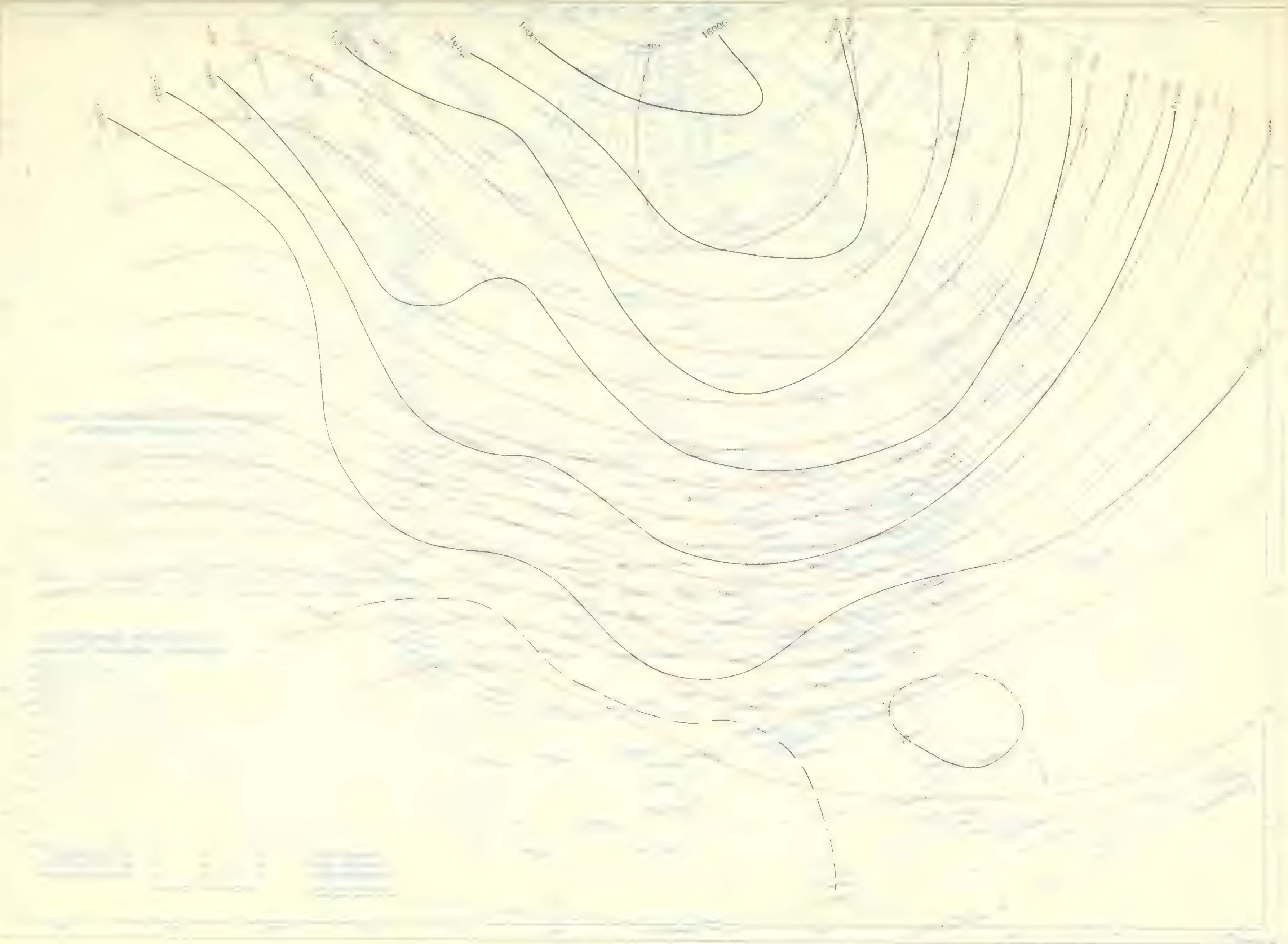
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 0300 GMT, September 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

100 mb. Surface, 0300 GMT, September 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

51:7/10

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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OCTOBER 1956
Volume 7 No. 10

ASHEVILLE: 1957

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NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 10 OCTOBER 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

From the Continental Divide to the Appalachians and in the Northeast unseasonably warm, dry, sunny weather was ideal for harvesting operations, but it continued the severe drought in the western portions of the Great Plains and resulted in insufficient moisture for proper germination and growth of winter grains in the middle Mississippi Valley and in the area north of the Ohio River. In the eastern portions of the Great Plains and in the Mississippi Valley rains about the middle and late in the month were very beneficial but far short of needs in those areas. Weather conditions were about normal in Mississippi, Alabama, and Georgia, but cloudy and wet from Florida to New England with frequent rains during the latter part of the month causing some crop losses in eastern North Carolina.

In the Far West the month was relatively cool. Precipitation was above normal except in extreme southern areas where dry, unusually windy weather prolonged the drought. Snow began accumulating in the mountains during the last decade.

TEMPERATURE.--Temperatures, well above normal throughout the Central interior, were relatively highest in the Great Lakes region and upper Mississippi Valley where average departures for the month exceeded 6°. A few late-season highs were 99° at Wichita Falls, and 97° at Waco, Tex., on the 6th; 103° at Laredo, Tex., on the 4th; 90° at Rapid City, S. Dak., on the 12th; and 82° at International Falls, Minn., on the 13th. Peoria, Ill., reported its second warmest October in the past 101 years. At Springfield, Ill., this was the first October in 5 years without frost or freeze. Along with the warm weather, sunshine also set a new October record of 78 percent of possible for Milwaukee, Wis.; one of 85 percent at Lincoln, Nebr., and in the Northeast both Burlington, Vt., and Boston, Mass., recorded their second sunniest October on record.

In most of the Far West temperatures remained near seasonal levels during the first 3 weeks. The last decade, however, was unusually cold for the season, and freezing occurred almost to the Mexican Border. Virtually all stations in the area recorded their monthly minima during this period, including the month's lowest of -7° at White Mountain, Calif., on the 29th.

PRECIPITATION.--The first general precipitation over the Great Plains in several weeks featured the month's precipitation. Most of these rains fell during the periods 14th through the 19th, 24th and 25th, and 29th and 30th. Monthly totals exceeded an inch in the extreme eastern portions of the Dakotas, and in most of Nebraska, Kansas, Oklahoma, and Texas. In the eastern two-thirds of Oklahoma and Kansas and some parts of Texas, totals ranging from 2 to over 4 inches furnished enough moisture to germinate dry-planted grains and stimulated growth of grains and grass. The drought, however, was only eased, not broken as water supplies and subsoil moisture in most areas remained critically low. In the extreme western portions of the Great Plains precipitation, everywhere less than 0.50 inch and in extensive areas totaling only a few hundredths of an inch, furnished little or no drought relief. October was the eighth consecutive month with subnormal precipitation at Goodland, Kans., while at Pueblo, Colo., 0.06 inch on the 24th was the first measurable precipitation there in 58 days.

In Illinois, some adjacent areas of Missouri, Iowa, and Wisconsin, and north of the Ohio River precipitation was also less than 50 percent of normal with monthly totals ranging from about 0.25 inch to slightly more than an inch. In eastern Wisconsin, northern Illinois, and most of Michigan the month was among the driest Octobers on record. Milwaukee, Wis., recorded only 0.15 inch for the month, the second lowest amount there since 1841. Lansing, Mich., with 0.28 inch reported its driest October since 1864, and at Marquette, Mich., this was the driest on record. Poor pastures, uneven stands of winter grains, and water hauling for livestock in Illinois were the worst effects of the dry weather in these areas.

Rains along the East Coast exceeded 6 inches in eastern portions of Maryland, Virginia, North Carolina, and Florida. Jacksonville, Fla., recorded 13.44 inches (8.77 inches above normal) and Hatteras, N. C., recorded 9.89 inches. Greensboro, N. C., reported 18 cloudy days, and the least percentage of possible sunshine (46 percent) on record for any October; and 15 consecutive days with a trace or more of rain (17th through 31st) equaled the longest rainy period there for any month. Also, Raleigh, N. C., had a record number of rainy days for October.

In the Far West precipitation was above normal as far south as central California, northern Nevada, and Utah. Totals exceeded 2 inches in Oregon, Idaho, extreme northern California, and western Washington, with a few stations on the western slopes of the Cascades receiving over 25 inches. Most of this precipitation came during the second half of the month, much of it in the form of snow during the last decade. Idaho reported the heaviest October snowfall since 1920. More than 20 stations in Montana reported an inch or more of snow. West Yellowstone received the most, 34 inches, with 24 inches remaining on the ground at the end of the month. Soda Springs, Calif., reported 26 inches of snow on the ground at the end of the month, 18 inches of which fell on the 31st. A few mountain stations in the Cascades also had snow on the ground at the end of the month; Crater Lake, Oreg., reporting the most, 50 inches.

DESTRUCTIVE STORMS.--As usual the number of storms in October showed a sharp reduction compared to the number in previous months. Nevertheless several very destructive storms occurred. The worst outbreak of storms during the entire month occurred in the central Great Plains on the 29th when a series of tornadoes took a heavy toll of farm property and crops in several sections of Kansas and Nebraska, and severe thunderstorms took a lesser toll in nearby states. During the period

October 4-7, rain, hail and lightning caused damage in many communities of central and southern California, the overall damage falling in the $50,000 to $500,000 bracket. In eastern North Carolina wind, rain, and tides on the 16th to 18th and again on the 27th to 30th were responsible for much damage along the coast and considerable crop losses in the interior. In Oklahoma wind toppled a TV transmitter at Enid, and wind, lightning, an hail up to the size of baseballs destroyed crop and property in several other sections of th State on the 1st. In Texas hail damaged the peca crop in Jasper County on the 4th, wind destroye property in Brazos County on the 20th, and lightning was responsible for the loss of a buildin in San Angelo on the 30th.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

OCTOBER 195

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Clayton	94	1	Jasper	33	8	Vance	10.23	Guntersville City W Wks	1.16
Arizona	Casa Grande Ruins RS	108	6	Maverick	-1	30	Tonto Cr. Fish Hatch.	3.18	5 Stations	.00
Arkansas	Paris	98	6	Batesville Livestock	27	27	Pine Bluff	5.34	Fulton	1.01
California	Brawley	108	1	White Mtn. 1	-7	29	Gasquet RS	17.71	20 Stations	.00
Colorado	Eversoll Ranch	96	5	Northdale	-6	30	Wolf Creek Pass 4W	3.45	4 Stations	.00
Connecticut	Norwich Pub. Util. Plt.	88	16	2 Stations	20	12	Bridgeport WB AP	4.81	Torrington	1.17
Delaware	5 Stations	80	3+	Georgetown 5SW	29	11	Lewes	8.34	Wilmington N Castle WB AP	3.58
Florida	3 Stations	94	2+	Jasper 9ESE	42	28	Fellsmere	19.35	Key West WB City	.87
Georgia	Surrency	94	3	Blairsville Exp. Sta.	29	8	Tray Mountain	8.14	2 Stations	.83
Idaho	3 Stations	86	2+	Gray	-1	29	Deadwood Dam	6.47	Buhl	.51
Illinois	Carbondale Sewage Pl.	90	2	Kankakee 3SW	24	10	Makanda 1NW	2.58	McHenry 2S	.19
Indiana	Madison	88	16+	Wheatfield	20	10+	Scottsburg	3.71	W. Lafayette CAA AP	.05
Iowa	2 Stations	94	1	Sibley	18	9	Sidney	4.34	Albia Pasture Imp. Fm.	.30
Kansas	Hays 1S	99	6	Russell Springs	23	31	Lyons 3S	4.64	Garden City Exp, Sta.	.06
Kentucky	2 Stations	91	1	Blaine	28	11	Van Buren	4.38	Benham	.78
Louisiana	Vinton	97	9	2 Stations	33	27	Violet	8.27	Baton Rouge WB AP	.45
Maine	3 Stations	85	15+	Greenville	17	26	Ellsworth	4.37	Fort Kent	1.73
Maryland	Pikesville Pol. Brks.	84	15	Oakland 1SE	21	11	Pocomoke City 4SW	9.68	Sines Deep Creek	1.78
Massachusetts	Fitchburg 2S	88	16	Birch Hill Dam	17	12	Ipswich	5.40	Westfield	.99
Michigan	Huron Mountain	89	13	2 Stations	17	11	Elberta 4SE	1.78	Charlotte	.12
Minnesota	2 Stations	88	12+	do	12	10	Duluth	3.13	Winnebago	.39
Mississippi	do	92	1	3 Stations	34	8+	Pascagoula High School	11.55	Richton 12NNE	.92
Missouri	3 Stations	93	1	2 Stations	26	27+	Oldfield	4.62	Trenton	.12
Montana	Miles City	88	2	Lakeview	-2	29	Hebgen Dam	4.03	3 Stations	.00
Nebraska	Seward	97	5	Harrison	16	30	Nebraska City 1WNW	3.61	2 Stations	.00
Nevada	Overton	100	1	2 Stations	5	29	Jarbidge	3.80	3 Stations	.00
New Hampshire	Windham	88	16	Grafton	14	26	Portsmouth	4.70	Benton	.70
New Jersey	2 Stations	88	15+	Layton 3NW	20	11+	Belleplain	9.03	Wanaque Raymond Dam	1.08
New Mexico	Artesia	99	15	Gavilan	1	20	Hobbs	3.05	10 Stations	.00
New York	Poughkeepsie	87	17	2 Stations	14	26	White Plains Airport	6.07	Peru 3SW	.57
North Carolina	Caroleen	90	1	3 Stations	25	8+	New Bern CAA AP	13.64	Cane River	.87
North Dakota	Forman	91	12	2 Stations	9	9+	Oakes	2.14	Watauga S. D. 8N	T
Ohio	2 Stations	88	3+	do	22	10+	Gallipolis 5W	2.72	Defiance Power Plant	.20
Oklahoma	do	101	8	Kenton	24	31	Walter	7.14	Guymon Lee Ranch	.13
Oregon	Powers	99	6	Fremont	9	22	Valsetz	30.62	Arlington	.74
Pennsylvania	Titusville Water Works	86	15	Phillipsburg CAA AP	17	11	Mt. Pocono 2N AP	5.70	Slippery Rock	.90
Rhode Island	Greenville	84	15	2 Stations	24	11+	Kingston	3.87	2 Stations	2.30
South Carolina	9 Stations	90	1+	Chester 2SW	35	12	Myrtle Beach CAA AP	7.07	Chappells	1.14
South Dakota	2 Stations	96	12	Deerfield 5NW	6	30	DeSmet	3.27	8 Stations	T
Tennessee	Waynesboro	92	1	2 Stations	29	8+	Big Lick	5.46	Stone Mountain	.49
Texas	Eagle Pass	105	5	Ysleta	25	31	Henrietta	6.74	Bunker Hill	.00
Utah	Moab	94	7	2 Stations	2	25+	Silver Lake Brighton	3.48	Lund	.00
Vermont	Randolph	85	15+	3 Stations	14	12+	Montpelier CAA Airport	4.16	Rutland	.46
Virginia	Richmond WB AP	85	2	2 Stations	25	11	Big Meadows	11.00	2 Stations	.72
Washington	Packwood	91	7	do	15	28	Spruce	21.14	White Swan	.29
West Virginia	Williamson	88	2+	Bayard	19	11+	Cabwaylingo St. Forest	6.54	East Rainelle 1SE	1.07
Wisconsin	4 Stations	85	13+	Couderay	12	10	Frederic	3.69	Kenosha	.08
Wyoming	Rochelle 3E	92	2	Kendall	-2	30	Snake River	2.74	Riverton 9N	.00
Puerto Rico	Utuado	97	17	Garzas Dam	56	31	Guineo Reservoir	23.73	Mona Island	3.64

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

+ And also on a later date or dates.

Table 2

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb.	Mb.	°F	°F	°F.	°F.	°F		°F.				°F	%	In.	In.	In			In.	In	M p h		M p h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	994.4	1019.8	75	54	64.5	0.8	86	6	41	8	0	0	54	75	3.49	0.63	0.92	8	1	0.0	0	6.4	NE	24	SE	25+	11	8	12	5.3	57
Mobile	211	1009.9	1018.0	80	59	69.3	.2	85	1+	52	8+	0	0	59	76	4.19	.44	1.90	7	5	.0	0	8.3	NE	--	---	--	16	5	10	4.2	--
Montgomery	198	1011.1	1018.7	77	56	66.7	.3	87	1	47	8	0	0	58	80	5.76	3.40	2.92	7	3	.0	0	5.2	E	22	N	1	12	6	13	5.2	58
ARIZONA																																
Flagstaff	6993	------	-----	64	27	45.6	-.5	74	6	14	25	0	25	--	-	.68	-.78	.28	6	3	2.9	3	----	---	--	---	--	19	6	6	3.4	--
Phoenix	1114	973.9	1012.7	85	55	69.7	-1.1	98	6	40	25+	9	0	43	40	.06	-.34	.05	2	1	.0	0	4.4	E	•29	SSE	1	21	7	3	2.5	97
Prescott	5014	847.6	1014.9	72	42	56.9	-.1	84	6	21	30	0	4	--	--	.51	-.17	.34	4	2	T	0	9.5	S	49	SW	23	19	7	5	2.9	87
Tucson	2558	925.2	1012.3	86	55	70.2	.6	97	6	37	25	12	0	34	32	.27	-.20	.25	2	1	.0	0	6.3	SE	33	SW	12	21	6	4	2.4	93
Winslow	4880	852.0	1013.2	75	40	57.4	1.1	86	6+	24	25	0	5	21	29	.21	-.34	.17	4	1	.0	0	8.6	SE	•30	S	7+	17	8	6	3.5	--
Yuma	199	1007.1	1012.2	90	59	74.8	-1.6	102	1	44	30	22	0	40	32	T	-.32	T	0	0	.0	0	7.6	W	39	NW	24	23	8	0	1.8	95
ARKANSAS																																
Fort Smith	458	1001.0	1017.7	81	53	67.3	3.4	96	6	40	26+	3	0	50	62	1.37	-2.26	1.11	4	3	.0	0	7.3	E	29	W	25	10	11	10	5.2	65
Little Rock	257	1005.1	1018.4	79	56	67.4	3.3	94	6	43	27+	1	0	53	68	3.04	.23	.89	7	4	.0	0	7.3	ENE	•58	SSW	30	13	9	9	4.7	74
Texarkana	361	------	------	82	56	68.7	1.7	93	6	42	27	1	0	--	--	1.47	1.91	.43	5	5	.0	0	----	--	--	---	-	-	--	--	---	--
CALIFORNIA																																
Bakersfield	489	998.6	1016.8	76	52	64.1	-2.4	91	1	38	24	1	0	47	57	1.46	1.09	1.20	3	3	.0	0	4.6	NW	•23	NW	23	16	10	5	3.5	--
Bishop	4108	873.7	1014.6	73	37	54.8	-2.3	86	1	21	29	0	9	-	--	.46	.12	.26	5	4	.0	0	----	---	--	---	-	16	11	4	3.4	--
Blue Canyon	5280	839.5	1016.3	56	39	47.5	5.6	78	6	22	24+	0	7	--	--	10.27	7.10	4.31	12	5	22.0	7	----	---	--	---	--	10	7	14	5.6	-
Burbank	699	989.2	1015.6	76	53	64.4	.7	89	20	42	30	0	0	50	66	.51	-.01	.48	4	1	.0	0	4.0	S	•23	NNW	31	12	13	6	4.4	-
Eureka (U)	43	1015.6	1018.0	60	47	53.5	.7	69	6+	37	28	0	0	-	--	5.47	2.77	1.28	14	1	.0	0	6.6	---	30	SW	29	7	13	11	5.9	56
Fresno	331	1004.4	1016.5	74	49	61.5	-2.6	91	1	34	29	1	0	46	61	1.00	.34	.48	4	3	.0	0	5.5	NW	20	NW	31	15	10	6	3.4	81
Los Angeles (U)	312	------	------	75	58	66.5	-.1	89	20	46	29	0	0	52	66	.12	-.38	.12	1	0	.0	0	5.7	---	32	NW	31	16	9	6	4.0	69
Los Angeles	99	1011.9	1015.5	72	57	64.8	1.4	80	1+	46	29	0	0	53	72	.01	-.42	.01	1	0	.0	0	6.8	W	•46	N	31	11	13	7	4.7	--
Mt. Shasta (R)	3544	892.3	1016.9	60	34	47.2	-3.8	81	1+	23	24	0	12	--	--	2.70	.09	1.44	9	1	5.0	1	----	---	--	---	--	9	11	11	5.5	--
Oakland	3	1017.3	1017.4	67	49	58.1	-1.9	79	15	40	24+	0	0	50	76	1.02	.11	.67	7	0	.0	0	7.6	WNW	•28	WNW	23	13	9	9	4.5	--
Red Bluff	341	1003.1	1016.1	75	50	62.3	-2.8	100	6	37	24	3	0	40	49	.50	-.99	.27	8	0	.0	0	8.9	SSE	50	SE	30	18	3	10	4.3	74
Sacramento	17	1015.2	1016.2	73	49	60.9	-1.8	87	1	38	28+	0	0	45	60	1.23	.32	.75	6	1	.0	0	9.0	SW	35	SW	6	15	9	7	4.1	80
Sandberg (R)	4517	863.2	1014.6	63	46	54.5	-3.8	78	1	28	24	0	4	--	--	.28	-.38	.16	4	2	.7	1	14.2	---	•48	NW	23+	13	10	8	4.1	--
San Diego	19	1012.2	1015.3	73	59	65.7	.7	84	21	49	30	0	0	55	71	.68	.05	.64	3	0	.0	0	6.6	WSW	17	NW	7+	13	14	4	4.3	70
San Francisco (U)	52	------	--- --	66	53	59.5	-1.5	77	20	49	24+	0	0	-	-	1.14	.07	.85	8	2	.0	0	7.8	--	27	SW	30	18	6	7	3.8	70
San Francisco	8	1016.9	1017.5	67	49	58.3	-1.1	77	15+	41	24	0	0	50	78	1.16	.24	.88	6	2	.0	0	9.6	WNW	40	WNW	22	14	9	8	4.5	--
Santa Maria	238	1008.1	1016.9	69	47	57.9	-2.1	82	21	35	29	0	0	48	76	.81	.19	.71	7	2	.0	0	6.1	WNW	•25	WNW	31	15	7	9	4.4	--
COLORADO																																
Alamosa	7536	773.5	1019.1	65	23	44.1	.0	76	6	11	25+	0	27	-	-	.18	.04	.12	3	2	.0	0	----	---	--	---	--	14	9	8	4.0	--
Colorado Springs	6173	810.4	1015.3	70	36	52.7	1.3	83	5	20	25	0	12	23	35	.14	-.49	.09	3	0	.4	T	11.0	SSE	•36	WNW	7	15	9	7	4.1	--
Denver	5292	837.5	1013.2	72	40	55.9	4.4	84	7	27	30	0	5	21	32	.27	-.74	.16	2	1	.6	T	12.9	SSW	40	SW	24	14	11	6	4.2	80
Grand Junction	4849	859.5	1014.9	70	43	56.3	1.9	85	6	29	25	0	5	23	33	.54	-.30	.36	3	0	1.8	1	10.6	ESE	50	SW	12	16	8	7	4.1	71
Pueblo	4639	856.8	1014.7	75	39	57.1	4.3	89	7	26	31	0	6	25	34	.06	-.64	.06	1	0	.0	0	7.9	W	43	SW	24	17	8	6	3.6	87
CONNECTICUT																																
Bridgeport	7	1023.8	--- --	64	46	55.0	.6	79	1	34	11	0	0	-		4.81	1.98	2.23	6	0	.0	0	----	---	--	---	--	16	8	7	4.3	
Hartford	169	1018.2	1024.1	65	38	51.2	-1.7	84	16	25	11	0	8	43	76	1.70	-1.10	.74	7	1	.0	0	9.7	N	37	N	18	13	9	9	4.7	70
Middletown (U)	133	1019.5	-----	65	39	52.2	---	83	15	27	12	0	7	--	--	2.28	---	1.40	5	1	.0	0	7.6	---	%40	NW	1	-	--		---	--
New Haven	6	1023.5	1024.0	64	42	53.1	.2	78	15	33	11+	0	0	-	-	3.17	.17	1.33	6	0	.0	0	7.1	---	22	NE	18	14	7	10	4.8	74
DELAWARE																																
Wilmington	78	1020.1	1023.3	66	47	56.8	.6	78	15	35	11	0	0	49	77	3.58	.59	1.87	11	0	.0	0	10.7	ENE	-	--	--	10	5	16	6.1	-
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	68	52	60.4	2.0	81	3	38	11+	0	0	--	-	3.24	.27	1.03	9	0	.0	0	7.1	---	24	NW	7	-	--	--	---	--
Wash. Nat'l. AP	14	1018.4	1022.8	67	52	59.0	.8	78	3	39	11+	0	0	50	75	2.62	-.23	.72	12	0	.0	0	9.3	NNE	29	NE	17+	9	5	17	6.4	52
FLORIDA																																
Apalachicola (U)	13	1015.6	-----	79	65	71.8	.8	87	7	55	28	0	0	--	--	4.37	1.82	1.43	7	5	.0	0	8.0	---	25	SE	20	17	5	9	4.2	85
Daytona Beach	31	1015.2	1016.7	81	65	72.8	.6	90	3	56	31	1	0	66	84	5.82	-.07	3.05	14	6	.0	0	11.7	NE	•33	NW	16	5	5	21	7.7	--
Fort Myers	15	1014.7	------	85	66	75.5	-.8	90	2	58	28	1	0	--	-	4.42	.27	1.94	11	10	.0	0	9.3	--	•29	SE	5+	9	10	12	5.9	--
Jacksonville	24	1016.8	1017.8	78	63	70.8	-.1	86	2+	57	27+	0	0	64	83	13.44	8.73	6.66	15	4	.0	0	9.7	NE	38	E	16	5	5	21	7.6	30
Key West (U)	9	1013.0	------	86	74	79.8	.3	90	4+	67	18	5	0	-	-	.87	5.91	.37	8	1	.0	0	7.9	---	28	NE	14	8	15	8	5.3	79
Lakeland (U)	214	------	-----	81	66	73.6	.7	89	3	57	28	0	0			4.15	1.62	1.98	12	6	.0	0	7.5	--		---	--	7	11	13	6.5	48
Miami (U)	8	------	-- ---	83	71	77.2	-.4	88	7+	65	28+	0	0	-	--	4.24	-3.64	1.23	14	5	.0	0	13.3	---	60	NE	14	11	14	6	5.0	67
Miami	8	1013.1	1014.1	86	71	78.2	.3	90	7	65	30	1	0	70	80	5.56	-2.67	1.92	13	6	.0	0	11.1	NE	30	ENE	14	6	16	9	6.0	--
Miami Beach	9	------	------	83	74	78.3	-.4	88	7	68	30	0	0		--	2.22	-4.85	.65	15	--	.0	0	----	--	--	---	--	7	13	11	---	--
Orlando	106	1012.3	1016.5	82	65	73.4	-1.3	91	3	58	28+	1	0	66	85	8.24	4.33	5.63	13	4	.0	0	9.2	NNE	•30	WNW	16	5	8	18	7.1	--
Pensacola (U)	13	1015.3	-- ---	79	63	70.8	.5	87	7	54	28	0	0	--	-	7.26	3.38	4.27	9	5	.0	0	8.6	---	20	SE	20	-	--	--	---	63
Tallahassee	64	1015.1	1017.6	78	60	69.1	.3	85	1+	49	28	0	0	61	81	4.34	1.96	2.02	7	4	.0	0	5.7	NE	--	---	--	9	13	9	5.6	--
Tampa	19	1015.7	1016.2	82	66	74.0	-.6	88	1	57	28	0	0	65	79	3.50	.36	1.14	13	5	.0	0	9.3	N	•29	N	14	10	2	19	6.6	51
West Palm Beach	15	1013.4	1014.2	85	71	77.9	.3	91	7	63	18	1	0	70	80	4.74	-3.58	1.14	14	4	.0	0	12.1	NE	•48	NE	14	5	14	12	6.5	--
GEORGIA																																
Atlanta	975	978.7	1020.2	73	57	64.8	1.4	82	5	47	12	0	0	55	75	2.00	-.60	1.51	9	0	.0	0	10.4	ENE	24	NW	7	11	3	17	5.8	50
Athens	798	990.9	1020.1	72	55	63.6	-.3	86	1	44	9+	0	0	56	81	2.97	.03	1.62	7	1	.0	0	9.4	NE	•29	ENE	28	11	3	17	5.9	--
Augusta	143	1012.5	1019.1	75	56	65.8	1.1	89	2	42	12	0	0	59	82	1.54	-.99	.87	7	1	.0	0	6.3	N	•28	N	16	9	7	15	6.2	--
Columbus	385	1005.1	------	77	57	66.7	.9	87	1	46	8	0	0			1.33	.71	92	5	3	.0	0	----	---	-	--	--	11	6	14	5.7	--
Dawsonville	1110	------	------	73	46	59.8	---	83	5+	32	8	0	0	-	--	2.62	--	2.00	4		.0	0	----	---	--	---	--	--	-	--	---	--
Macon	356	1005.3	1018.8	77	58	67.1	.5	88	1+	47	12	0	0	57	75	1.94	-.33	.96	7	2	.0	0	9.0	NNE	26	N	16	9	7	15	5.7	51
Rome	637	996.6	------	75	50	62.8	.6	82	1+	38	13	0	0	--	--	3.83	.97	1.44	9	1	.0	0	---	--	--	---	--	12	4	15	5.7	-
Savannah	48	1015.9	1018.3	76	59	67.8	1	89	5	50	12	0	0	61	82	2.90	.45	1.27	5	1	.0	0	9.1	NNE	33	N	16	7	7	17	6.5	50
Thomasville (U)	283	------	------	79	60	69.8	.5	89	1+	51	28	0	0	-	-	2.88	.61	.89	8	3	.0	0	- --	---	--	---	--	--	-	--	---	--
IDAHO																																
Boise	2842	920.8	1016.1	61	39	50.1	-2.5	81	4	28	28	0	9	35	62	2.25	1.31	.65	12	4	T	T	9.0	SE	45	SE	30	5	13	13	6.5	66
Idaho Falls 46W (R)	4933	848.3	1016.9	59	27	43.0	-.9	77	7	12	29	0	24			1.53	.85	.74	9	0	2.4	1	8.8	---	a32	WSW	21	-	--	--	--	
Idaho Falls 42NW (R)	4790	------	------	59	26	42.5	-1.8	79	7	14	29	0	26	-	--	1.01	.54	.43	8	--	- -	--	8.7	- -	a35	SW	21	--	-	--	---	--
Lewiston	1413	963.4	1015.2	60	40	49.6	-2.3	77	7	29	31	0	3	--	--	1.32	.11	.49	7	0	.0	0	---	--	--	---	--	5	5	21	7.6	--
Pocatello	4444	862.9	1016.5	60	35	47.1	-2.2	78	3	20	29	0	9	32	61	2.56	1.52	.63	11	3	3.4	2	11.8	SW	48	S	30	9	6	16	6.3	60
ILLINOIS																																
Cairo (U)	314	1006.4	------	77	55	66.0	4.0	87	6	43	27	0	0	--	--	1.34	-1.63	.91	6	3	.0	0	6.7	--	21	SE	25	16	7	8	3.8	72
Chicago	610	997.0	1020.2	71	51	60.8	6.7	85	16	38	10	0	0	44	59	.30	-2.26	.23	5	1	.0	0	8.0	SE	36	NW	6	14	9	8	4.3	78
Moline	589	996.6	1019.1	73	45	59.0	5.1	85	1+	32	10	0	1	43	60	.40	-1.87	.40	1	0	.0	0	9.6	E	35	NW	6	15	10	6	3.9	78
Peoria	654	997.3	1019.6	74	50	61.6	6.9	84	1+	36	9	0	0	44	59	.67	1.77	61	3	0	.0	0	10.7	S	42	NW	6	14	8	9	4.4	79
Springfield	589	996.6	1019.9	76	49	62.4	6.5	87	1	38	10+	0	0	44	57	.45	2.76	.43	3	1	.0	0	9.8	SSW	35	S	25	15	10	6	4.3	79
INDIANA																																
Evansville	383	1004.4	1020.2	76	48	61.8	2.5	86	6	35	8+	0	0	48	68	1.06	-1.76	.56	7	3	.0	0	6.9	NE	26	SW	25+	15	5	11	4.5	72
Fort Wayne	801	989.8	1021.0	71	44	57.8	4.6	82	16	31	10+	0	3	44	65	.68	-1.94	.32	4	1	.0	0	9.9	ENE	34	W	6	14	7	10	4.7	70
Indianapolis	793	991.2	1021.2	74	48	60.7	4.8	82	2+	36	10+	0	0	46	65	1.09	1.43	57	4	3	.0	0	9.7	NE	34	NW	6	14	9	8	4.7	59

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
		Station ∅	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max. depth on ground	Average hourly speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
INDIANA (Cont'd.)																																
South Bend	768	987.5	1020.6	72	45	58.4	5.5	84	16	29	10	0	2	45	66	0.57	-2.42	0.42	4	1	.0	0	10.1	ESE	*28	WNW	6	13	9	9	4.7	-
IOWA																																
Burlington	694	993.9	1019.8	75	48	61.6	6.6	88	1	35	9	0	0	43	58	.72	-2.23	.65	3	2	.0	0	8.5	SE	33	NW	6	14	10	7	4.2	9
Des Moines	948	986.8	1018.2	73	48	60.7	6.2	90	1	36	9	1	0	42	56	1.66	-.54	1.15	4	6	.0	0	12.4	S	37	NW	6	12	9	10	4.7	7
Dubuque	1065	993.9	1019.1	69	45	57.1	6.2	81	12	32	10	0	1	43	61	.93	-1.27	.70	2	0	.0	0	----	---	--	--	--	17	9	5	3.7	-
Sioux City	1094	974.6	1015.9	73	46	59.5	6.9	90	11	30	26	1	1	39	50	.47	.97	.24	4	4	T	T	15.5	SSE	59	S	24	10	10	11	5.2	7
Waterloo	870	----	------	70	44	56.9	5.0	85	12	28	9	0	2	--	--	1.72	-.44	1.15	6	7	.0	0	11.6	---	--	---	--	--	--	--	---	-
KANSAS																																
Concordia (U)	1375	966.5	------	75	50	62.8	5.1	94	5	33	31	2	0	--	52	1.48	-.24	.96	6	3	.0	0	8.8	- -	28	SE	24	12	11	8	4.4	8
Dodge City	2594	927.9	1015.1	76	50	62.6	4.8	92	5	35	31	1	0	38	46	1.73	.16	.96	4	4	.0	0	15.9	S	52	S	24	20	7	4	3.0	8
Goodland	3645	887.9	1014.1	74	40	56.6	4.5	87	5	30	25+	0	7	32	44	.56	.48	.40	5	3	.4	T	13.1	S	*40	NW	25	18	5	8	3.6	-
Topeka	879	981.7	1017.5	78	48	62.8	4.9	92	1	31	26	1	1	44	56	1.33	-1.23	.55	4	3	.0	0	11.5	S	47	S	13	11	11	9	5.1	7
Wichita	1321	967.8	1016.2	77	52	64.3	4.1	91	5	38	26	2	0	44	54	2.69	.51	1.28	5	4	.0	0	13.2	SSE	39	S	24	15	9	7	4.0	7
KENTUCKY																																
Lexington	979	985.0	1021.0	71	51	61.0	3.7	86	1	33	27	0	0	51	74	1.78	-.66	.93	7	0	.0	0	8.6	NE	--	---	--	12	6	13	5.3	-
Louisville	474	1000.9	1020.4	73	50	61.1	2.5	82	16	35	27	0	0	51	74	1.74	-.71	1.25	7	1	.0	0	6.9	SE	29	NW	6	13	8	10	4.6	7
LOUISIANA																																
Baton Rouge	64	1014.9	1017.9	83	58	70.1	.5	89	6	49	27	0	0	59	75	.45	-2.53	.25	5	1	.0	0	7.1	E	--	---	--	14	9	8	4.4	-
Lake Charles	12	1015.6	1017.0	84	61	72.5	2.2	91	4	50	27	2	0	60	73	1.69	-1.75	.80	6	3	.0	0	5.7	SE	*23	N	20	16	12	3	3.4	-
New Orleans (U)	9	1015.2	------	81	66	73.5	.7	86	1+	61	8	0	0	--	--	1.06	-2.60	.54	6	3	.0	0	6.1	- -	16	E	11+	13	13	5	4.0	7
New Orleans	3	1015.2	1016.0	81	63	72.0	.6	88	7	56	9	0	0	63	77	1.90	-1.28	1.25	5	2	.0	0	7.0	ENE	*22	NNW	20	14	11	6	4.0	-
Shreveport	252	1008.5	1017.6	83	57	69.6	1.8	92	6	43	27	1	0	53	62	2.05	-1.05	.65	7	5	.0	0	7.0	SE	--	---	--	18	8	5	3.5	8
MAINE																																
Caribou	624	998.6	1022.3	55	34	44.8	2.7	71	15	21	26	0	13	37	77	2.24	-1.23	.93	11	2	.7	T	10.1	S	*38	WNW	5	11	8	12	5.3	-
Portland	61	1019.8	1023.9	61	35	48.0	-.4	77	16	22	12	0	14	39	74	2.52	-.46	1.64	5	0	.0	0	7.3	WSW	34	SW	7	18	5	8	3.7	7
MARYLAND																																
Baltimore (U)	14	------	------	69	54	61.7	2.4	82	3	41	11	0	0	--	--	4.19	.82	2.46	10	--	.0	0	----	---	--	---	--	--	--	--	---	-
Baltimore	146	1018.6	1023.5	67	49	58.0	1.5	79	15	32	11	0	1	52	81	4.65	1.28	2.50	10	0	.0	0	9.7	ENE	42	N	7	9	9	13	5.9	5
Frederick	294	------	------	66	45	55.4	-1.4	79	15	29	11	0	2	--	--	3.44	.15	1.33	8	--	.0	0	----	---	--	---	--	--	--	--	---	-
MASSACHUSETTS																																
Blue Hill Obs. (R)	629	1000.2	1023.9	62	45	52.4	1.3	84	16	33	11+	0	0	-	71	4.10	.65	2.18	6	1	.0	0	13.4	S	44	NNE	23	17	8	6	4.1	7
Boston	15	1019.2	1023.7	62	46	54.4	-.6	87	16	35	12	0	0	44	71	4.39	1.60	2.33	5	1	.0	0	14.4	SW	*39	NNE	23	16	7	8	4.5	7
Nantucket	43	1023.3	1023.8	61	46	53.3	.3	75	15	34	12	0	0	47	79	2.10	1.50	1.04	6	0	.0	0	12.5	ENE	38	N	18	10	10	11	5.5	7
Pittsfield	1153	981.7	------	61	36	48.7	1.2	82	15	23	11	0	10	--	-	2.21	-.72	.60	7	1	.0	0	---	---	--	---	--	--	--	--	---	-
Worcester	986	987.4	-----	62	42	52.3	1.7	85	15	30	11	0	3	-	--	2.45	.72	1.14	7	0	.0	0	11.5	---	*30	WSW	8	17	7	7	4.1	-
MICHIGAN																																
Alpena (U)	587	998.6	------	59	44	51.3	3.4	81	13	30	10	0	2	--	--	.71	-1.27	.24	10	1	.0	0	11.1	--	34	SE	26	14	11	6	4.3	7
Detroit	619	995.3	1022.0	68	47	57.5	4.6	81	17	33	11	0	0	46	70	.61	-1.68	.36	4	2	.0	0	9.5	S	33	W	8	15	7	9	4.5	7
Detroit (Willow Run)	722	992.6	1021.2	69	46	57.3	4.8	82	15+	34	11	0	0	44	67	.67	-1.50	.26	5	2	.0	0	10.5	SW	*35	W	8	13	9	9	4.9	-
East Lansing (U)	856	------	------	70	45	57.4	6.9	84	16+	30	10	0	2	--	--	.28	-2.17	.11	5	2	.0	0	4.6	---	14	W	8	--	--	--	---	7
Escanaba (U)	594	996.6	------	58	45	51.2	4.1	69	17	33	9+	0	0	--	--	.19	-1.85	.12	2	0	.0	0	11.4	---	36	NW	7	12	11	8	5.2	5
Flint	761	993.6	1021.5	67	43	55.2	4.8	81	17	26	10	0	3	43	68	.38	-2.10	.31	3	1	.0	0	9.6	SSE	*29	WSW	8	14	10	7	4.4	-
Grand Rapids	681	995.6	1020.8	68	43	55.8	5.5	82	13+	26	10	0	3	43	68	.39	-2.12	.21	5	1	.0	0	9.2	S	32	W	8	11	11	9	5.1	6
Marquette (U)	677	990.9	------	63	43	53.1	5.6	84	13	34	24	0	0	--	66	.21	-2.05	.07	7	1	T	T	10.6	---	35	S	5	9	12	10	5.6	7
Muskegon	627	997.3	1020.9	67	43	54.9	4.6	78	16	27	10	0	4	44	68	.51	-2.01	.30	3	1	.0	0	----	---	--	---	--	15	8	8	4.3	-
Sault Ste. Marie	721	997.6	1020.7	59	39	49.0	4.6	75	13+	26	24	0	6	42	80	.90	-2.08	.34	8	1	T	0	10.1	ESE	30	NW	7	9	14	8	5.5	6
MINNESOTA																																
Duluth	1409	974.9	1016.7	60	38	49.3	5.3	80	13	25	10	0	4	39	72	2.43	.21	1.02	6	3	.0	0	15.0	WNW	61	S	13	8	12	11	5.8	6
Intern'l Falls	1179	973.2	1014.8	61	35	47.7	5.8	82	13	18	27	0	10	36	66	1.63	-.18	.85	7	4	.0	0	13.6	SE	--	---	--	9	9	13	6.2	-
Minneapolis	830	983.4	1017.3	68	45	56.5	6.1	84	12+	32	9	0	1	42	62	1.95	.30	1.12	5	4	.0	0	13.5	SSE	45	S	13	15	9	7	4.4	7
Rochester	1017	980.7	1017.8	68	43	55.5	6.4	85	12	29	10	0	2	42	66	2.26	.57	1.74	6	4	.0	0	12.3	SSE	--	---	--	15	8	8	4.4	-
St. Cloud	1034	977.7	1015.9	65	40	52.2	5.6	83	13	25	9	0	7	40	66	1.08	-.56	.50	7	5	.0	0	8.1	SE	--	---	--	13	8	10	5.1	-
MISSISSIPPI																																
Jackson	305	1006.3	1018.3	80	53	66.7	.3	86	6	42	8+	0	0	55	73	3.46	1.28	1.30	8	6	.0	0	4.7	SE	26	NE	20	15	6	10	4.2	7
Meridian	294	1004.7	--- --	79	52	65.7	1.0	88	6	40	28	0	0	--	--	1.95	-.43	.71	8	1	.0	0	----	---	--	---	--	16	7	8	3.7	-
Vicksburg (U)	234	1008.8	------	79	59	68.9	1.2	85	6	48	27	0	0	-	-	2.60	.38	.78	9	8	.0	0	7.2	---	29	NW	20	14	8	9	4.4	7
MISSOURI																																
Columbia	778	990.2	1018.7	78	51	64.3	6.2	90	1	39	26	1	0	43	54	1.74	-1.47	1.15	5	1	.0	0	9.0	SSE	42	W	25	14	7	10	4.5	7
Kansas City	741	982.7	1018.0	77	55	66.1	6.5	89	1+	40	26	0	0	44	49	.75	-2.18	.48	6	0	.0	0	11.1	S	36	S	1	13	7	11	4.9	7
St. Joseph	809	-----	------	76	49	62.9	4.8	91	1	34	26	1	0	--	--	.80	-1.73	.33	4	2	.0	0	11.7	--	*32	SSW	1+	15	7	9	4.6	-
St. Louis (U)	465	999.0	------	75	55	65.4	4.8	85	1	45	26+	0	0	--	--	.64	-2.26	.55	5	2	.0	0	10.0	---	37	S	25	16	11	4	3.5	8
St. Louis	552	999.0	1019.4	77	53	64.5	5.1	86	1	43	26+	0	0	46	56	.65	-2.43	.47	4	1	.0	0	7.7	SSE	--	---	--	13	12	6	4.5	-
Springfield	1265	970.9	1018.3	75	53	63.8	5.4	86	8	40	26+	0	0	49	65	3.49	.09	.90	6	3	.0	0	11.3	S	35	NE	3	11	9	11	5.4	7
MONTANA																																
Billings	3568	889.3	1013.3	64	38	51.1	1.9	84	7	22	30	0	7	29	44	.60	-.54	.51	6	0	3.6	1	11.5	SW	45	NW	21	9	10	12	5.8	7
Butte	5530	828.0	1016.4	54	25	39.7	-1.3	75	7	4	29	0	26	26	--	.98	.19	.42	6	0	6.5	2	6.3	S	*31	NW	21	7	8	16	6.5	-
Glasgow (U)	2277	938.0	1013.0	61	33	47.3	1.8	79	2	16	26	0	12	26	47	.03	-.77	.03	1	0	T	0	10.4	ESE	*38	WNW	5	9	9	13	5.9	-
Great Falls	3664	885.5	1012.6	58	38	47.7	-.4	76	7	18	28	0	7	26	47	1.02	.30	.43	6	1	2.4	1	16.8	SW	62	W	21	7	9	15	6.5	8
Havre	2488	923.1	1012.2	60	35	47.4	.6	78	6	23	28+	0	13	30	54	.41	-.27	.21	3	0	.4	T	9.3	---	33	SW	14	11	8	12	5.7	6
Helena	3893	871.3	1014.6	59	31	45.2	.1	78	7	10	28	0	16	29	57	1.02	.34	.56	7	0	1.9	2	7.9	W	36	W	30	8	10	13	6.4	5
Kalispell	2965	---- -	------	53	34	43.7	-.7	70	7	23	22	0	13	--	--	.88	-.48	.25	10	0	1.8	2	----	---	--	---	--	5	3	23	7.9	-
Miles City	2629	920.1	1013.5	65	37	51.1	2.8	84	2	23	30	0	7	29	--	.54	-.40	.36	3	0	T	0	11.5	WNW	*35	NW	21	12	8	11	5.2	-
Missoula	3200	900.8	1016.2	56	33	44.6	-.3	75	7	23	22	0	15	34	68	1.35	.28	.37	12	0	2.5	1	5.4	WNW	27	W	21	5	5	21	7.6	4
NEBRASKA																																
Grand Island	1841	949.2	1015.2	73	45	59.3	5.3	88	3+	30	31	0	3	37	48	.92	-.39	.53	3	3	.0	0	15.3	S	--	---	--	18	10	3	3.5	-
Lincoln (U)	1166	------	------	74	50	62.0	5.6	88	1+	35	31	0	0	--	--	.82	-.84	.64	4	3	.0	0	12.3	---	44	S	12+	15	7	9	4.2	8
Norfolk	1544	960.0	1015.8	73	43	58.1	6.0	89	11	26	31	0	6	38	50	1.16	-.20	.68	4	3	.0	0	----	---	--	---	--	15	9	7	4.3	-
North Omaha	1323	968.5	------	73	48	60.2	---	87	3+	33	26	0	0	--	--	.96	----	.38	6	4	.0	0	----	---	--	---	--	--	--	--	---	-
North Platte	2779	915.3	1014.0	73	37	55.0	3.3	91	5	22	21	1	9	35	52	1.79	.75	1.27	3	2	.5	1	10.2	SSE	72	SW	29	15	10	6	3.8	8
Omaha	978	976.6	1016.9	74	48	61.1	5.6	88	1+	35	26	0	0	43	56	1.93	.20	1.05	6	4	.0	0	11.5	SSE	43	SE	24	13	9	9	4.4	7
Scottsbluff	3950	878.1	1013.9	71	35	52.7	2.2	89	7	24	30	0	12	28	43	.04	.97	.04	1	0	T	0	9.6	WNW	*31	NW	24	17	6	8	3.5	-
Valentine (U)	2587	921.8	------	71	36	53.7	3.1	92	7	29	22+	2	11	--	--	1.20	.03	.76	4	1	T	0	12.1	---	42	S	23	19	7	5	3.2	8
NEVADA																																
Elko	5075	845.9	1017.9	62	28	44.6	-2.8	83	6	13	29	0	22	30	62	.97	.16	.48	10	4	1.2	1	4.8	WSW	*31	WNW	23	13	6	12	5.0	-
Ely	6257	809.3	1016.9	61	27	44.2	-2.7	76	6	12	25	0	24	23	47	.54	-.28	.24	7	1	1.1	T	11.2	---	47	S	6	13	8	10	4.8	6
Las Vegas	2162	947.5	1012.5	80	51	65.3	-2.1	95	1	36	30	3	0	25	24	.09	-.23	.09	2	1	T	0	10.4	SW	*48	SW	23	21	6	4	2.6	8
Reno	4397	862.5	1017.0	64	31	47.7	-3.0	80	6	15	29	0	18	31	57	.89	.34	.46	7	0	1.9	1	6.0	WNW	54	S	30	11	10	10	5.0	7
Winnemucca	4299	868.3	1016.8	64	30	46.7	-1.9	83	6	9	29	0	19	31	58	.83	.04	.40	9	3	1.5	2	7.7	S	39	S	23	13	6	12	5.2	5

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Date	Temperature: Lowest	Date	No. of days: Max. 90° F or above	No. of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear	No. of days: Partly cloudy	No. of days: Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In.	In	M p. h.		M p h			0–3	4–7	8–10	0–10	%
NEW HAMPSHIRE																																
Concord	339	1013.3	1024.2	63	33	47.5	-0.5	85	15+	20	11+	0	16	38	74	1.60	-1.20	0.80	5	1	0.0	0	5.4	NNW	26	NW	3	19	5	7	3.5	72
Mt. Washington	6262	811.4	- -	11	29	31.7	3.0	55	16	7	11	0	19		80	4.57	1.33	1.80	12	0	3.9	T	28.5	W	%106	W	8	14	5	12	5.1	63
NEW JERSEY																																
Atlantic City (U)	8	1019.0	-	64	54	58.9	.9	74	3	39	11	0	0	-		5.88	2.67	2.96	11	0	.0	0	18.5	---	59	E	26	10	3	18	6.5	48
Newark	11	1022.9	1024.0	66	48	57.2	1.6	86	15	38	11	0	0	47	73	3.83	.63	2.20	6	0	0	0	9.1	NNE	•27	N	18	13	8	10	5.2	-
Trenton (U)	56	1016.3	1023.0	66	49	57.2	1.1	81	15+	37	11	0	0	-	-	4.22	1.57	1.98	7	0	0	0	8.6	--	24	E	26	10	10	11	5.5	56
NEW MEXICO																																
Albuquerque	5310	849.6	1013.7	74	46	60.3	2.1	87	5+	30	30	0	2	28	32	.34	30	.34	1	1	0	0	8.6	SE	42	W	29	17	6	8	3.9	83
Clayton	4969	846.3	1014.6	74	41	57.1	2.0	86	5+	26	25	0	4	-		.15	-1.15	.12	2	2	.0	0						16	11	4	3.4	
Raton	6379	807.3	1015.9	72	33	52.3	1.2	83	5	17	25	0	16	-	-	T	-1.10	T	0	2	0	0						15	8	8	4.0	
Roswell	3612	894.0	1014.2	81	45	63.1	2.2	92	3+	27	31	5	2	37	42	.51	.44	.54	2	1	0	0	9		45	SW	19	22	4	5	2.7	-
NEW YORK																																
Albany	277	1020.4	1024.2	63	37	49.8	.9	81	15+	23	12	0	10	41	75	1.19	-1.02	.33	7	1	.0	0	6.6	S	30	W	7+	14	6	11	4.6	68
Binghamton	1601	963.9	1023.7	60	41	50.3	2.0	79	16	29	11	0	5	41	74	2.58	-.46	.86	9	0	T	0	8.8	SSE	40	NW	7	12	9	10	5.4	60
Buffalo	693	994.7	1023.1	66	45	55.3	4.1	80	17	32	11	0	1	44	70	.86	-1.63	.55	5	3	0	0	11.5	SE	45	SW	8	13	13	5	4.5	77
New York (U)	10	1021.6	- --	65	52	58.4	1.4	84	15	40	11	0	0	-	--	4.26	1.22	2.21	7	0	.0	0	10.6		43	W	7	14	9	8	4.8	73
New York	19	1022.3	1024.1	66	51	58.6	1.0	83	15	41	11	0	0	47	68	4.94	2.03	3.30	7	0	0	0	12.8	NE	35	E	25	12	11	8	5.1	
Rochester	543	1003.6	1023.2	65	43	53.8	3.0	81	15	28	11	0	2	44	75	.94	-1.56	.60	6	3	0	0	10.5	S	37	W	7	13	11	7	4.4	71
Schenectady	217	----	---	62	40	51.3	1.0	80	16	28	12	0	5	-	-	1.51	-1.15	.51	8	1	.0	0	---	-	-	-		22	3	6	3.4	--
Syracuse	424	1002.1	1024.4	64	41	52.7	3	81	15	28	12	0	4	42	73	1.28	-1.76	.26	7	2	0	0	7.9	E	34	S	6	15	9	7	4.1	67
NORTH CAROLINA																																
Asheville (U)	2203	- -	-	68	50	59.0	2.0	82	1	37	8	0	0		--	2.67	13	.91	9	1	.0	0	6.9	-	27	NW	7	11	5	15	5.5	53
Charlotte	725	992.7	1020.9	72	55	63.4	1.9	89	1	41	12	0	0	55	78	1.92	-1.07	.75	12	0	.0	0	10.2	NNE	33	NE	17	11	5	15	6.0	45
Greensboro	891	989.7	1021.9	69	52	60.4	1.4	85	2	36	12	0	0	52	81	2.89	29	1.22	12	1	.0	0	9.6	NE	26	NE	17	10	3	18	6.3	46
Hatteras (R)	4	1018.1	1018.7	71	64	67.4	1.1	80	6	57	2+	0	0	62	85	9.89	5.84	2.87	15	3	.0	0	14.7	NE	49	NE	16	6	5	20	7.3	-
Raleigh	433	1007.0	1020.8	71	53	61.9	.8	85	2	37	12	0	0	55	82	3.18	36	.90	12	4	.0	0	10.6	NNE	•23	N	17+	7	7	17	6.8	48
Wilmington	30	1017.5	-	75	59	66.8	1.5	87	3	45	12	0	0	-		7.25	4.47	2.54	14	1	.0	0	12.8		36	NE	29	7	8	16	6.8	46
Winston-Salem	967	986.1	1021.5	69	52	60.4	6	85	2	38	12	0	0	52	78	2.91	-.22	1.12	13	1	0	0	10.3	NE	•28	NE	17	12	3	16	5.9	
NORTH DAKOTA																																
Bismarck	1650	953.9	1013.8	65	33	49.0	3.3	87	12	18	9	0	14	30	55	25	75	.16	3	0	.0	0	12.0	WNW	52	SE	24	8	12	11	5.8	79
Devils Lake (U)	1471	959.7	-----	60	35	47.3	3.4	80	12	19	23	0	11		--	.91	-.35	.56	5	1	T	T	9.4	--	34	SE	24	12	9	10	5.3	70
Fargo	895	980.1	1014.6	65	38	51.7	5.6	84	12	21	23	0	8	36	59	1.14	12	.65	3	1	.0	0	18.2	SSE	52	SE	24	11	9	11	5.5	59
Williston (U)	1877	945.8	1013.2	60	35	47.4	1.9	81	2	19	9	0	11	29	52	.40	-.37	.14	5	0	.0	0	7.3	---	36	W	5	10	6	15	5.8	75
OHIO																																
Akron	1210	984.5	1023.1	67	45	55.8	2.8	80	15+	32	10+	0	2	45	71	1.31	1.08	.50	6	1	.0	0	10.2	S	-			10	12	9	5.2	-
Cincinnati Obs.	761	-- --	--	72	50	61.1	3.7	82	14	37	10+	0	0	--	--	1.53	-.66	1.10	5	1	.0	0	4.3	--	16	W	6	-			--	60
Cincinnati	869	988.7	1020.9	72	50	60.8	4.8	84	15	34	27	0	0	48	69	1.54	-.63	1.10	5	0	.0	0	8.3	ENE	•22	WNW	7	14	3	14	5.2	--
Cleveland (U)	663	---	---	68	50	59.1	3.6	80	16	36	11	0	0	-	--	1.02	-1.35	--	3	-	.0	0	-	-	-	--	--	-	-	-	--	--
Cleveland	787	993.8	1021.8	69	48	58.7	4.3	81	14+	31	11	0	1	47	69	.85	1.57	.59	5	1	.0	0	11.9	SSE	38	SW	6	11	11	9	4.9	68
Columbus (U)	724	-- ---	---	70	51	60.3	4.2	82	15+	39	10	0	0		-	.93	1.07	.52	7	2	.0	0	--	---	--	- -	-	--	--	-	---	-
Columbus	815	991.8	1022.0	71	48	59.4	4.9	84	15	34	10	0	0	47	69	1.15	-1.03	.66	7	2	.0	0	6.7	ESE	29	NW	6	12	9	10	5.1	73
Dayton	1002	985.0	1021.5	71	48	59.6	4.5	82	16	32	10	0	1	46	67	1.07	-1.23	.40	7	2	.0	0	9.6	SE	34	NW	6	11	6	14	5.4	77
Sandusky (U)	603	999.3	--- -	69	50	59.6	4.6	82	14	35	11	0	0	-	-	.76	1.34	.45	3	2	.0	0	7.3	- -	27	SW	8	10	14	7	4.7	69
Toledo	676	996.1	1021.8	70	44	56.8	4.1	84	16	27	11	0	2	45	71	.37	1.95	.27	4	1	.0	0	10.1	E	40	SW	8	13	10	8	4.8	76
Youngstown	1178	980.1	1023.1	67	44	55.2	1.3	80	15+	29	11	0	2	45	75	90	1.87	.56	7	1	.0	0	10.4	SE	•31	W	6	10	10	11	5.2	-
OKLAHOMA																																
Oklahoma City	1280	973.2	1016.6	79	54	66.3	3.1	93	5	39	31	5	0	48	58	3.76	1.10	2.59	6	5	.0	0	12.8	SSE	41	SE	24	16	7	8	4.0	74
Tulsa	672	992.6	1017.0	80	56	68.0	4.6	93	5	42	26	4	0	49	57	2.72	-.37	1.56	4	4	.0	0	8.8	SSE	28	SE	24	11	11	9	4.9	63
OREGON																																
Astoria	8	1014.6	1015.3	58	43	50.3	-3.8	77	6	30	28	0	1	47	86	11.37	4.22	1.57	26	3	.0	0	6.7	SE	•29	S	19+	2	7	22	8.2	--
Burns (U)	4140	872.3	1015.6	59	32	45.7	-1.5	79	7	19	24+	0	17	31	60	3.37	2.57	.90	9	0	1.5	1	-- -	- -	--	- -		7	10	14	6.2	--
Eugene	361	1003.4	1017.2	62	40	50.9	-1.8	82	6	33	22	0	0	--		8.33	4.76	1.73	16	0	T	0	7.6	---	•25	S	19	5	3	23	7.6	--
Meacham	4050	-----	-- --	52	34	43.2	-2.3	78	7	24	29+	0	14	-	-	2.76	-.18	.67	13	0	9.9	3	----	--	--	--	--	4	3	24	8.1	-
Medford	1312	969.5	1017.5	63	39	51.3	-3.2	89	6	32	14+	0	2	42	75	5.89	3.98	2.33	15	0	1.3	T	3.6	S	•25	SSE	29	5	9	17	7.1	-
Pendleton	1492	961.4	1015.3	61	41	50.9	-2.7	75	1	32	22+	0	2	38	63	1.39	.21	.39	13	0	T	0	9.8	SE	•35	W	12	8	5	18	6.6	
Portland	21	1010.8	1016.2	59	44	51.7	-3.0	81	6	35	22+	0	0	46	82	5.10	1.93	1.18	17	1	.0	0	8.3	ESE	27	SW	25	3	3	25	8.6	14
Roseburg	505	998.0	1016.6	63	40	51.4	-2.9	81	6	33	22	0	0		--	7.00	4.07	2.16	17	0	0	0	3.8	--	17	N	23+	4	10	17	7.2	41
Salem	195	1008.8	1016.2	61	42	51.7	-2.8	83	6	29	28	0	1	45	80	6.50	2.80	1.17	18	1	.0	0	8.7	S	•23	S	22+	4	4	23	7.9	
Sexton Summit (R)	3836	-	-----	53	39	46.1	-4.2	79	6	26	31	0	8	-	-	7.36	3.52	2.01	17	0	17.3	8	----	---	--	--	-	7	7	17	7.0	
PENNSYLVANIA																																
Allentown	376	1010.5	1024.6	65	43	53.9	7	80	15+	30	11	0	3	46	78	2.72	-.25	1.72	9	0	.0	0	8.6	ENE	--	---	-	13	7	11	5.1	-
Erie	732	------	-- --	65	46	55.3	3.0	78	15	32	11+	0	2	--	--	1.19	-1.82	.70	6	3	.0	0	10.6	--	-	- -		14	8	9	4.8	-
Harrisburg	335	1010.3	1024.1	65	46	55.2	.0	79	15	32	11	0	1	46	75	3.52	.45	1.91	10	0	.0	0	5.8	ESE	26	W	7	11	6	14	5.9	56
Philadelphia (U)	26	-----	-- ---	66	52	59.3	.8	80	15	41	11	0	0	-		4.24	1.63	1.26	8	-	.0	0	-- -	---	--	---	--	--	-	-		--
Philadelphia	10	1018.9	1023.3	67	49	57.7	1.1	81	15	36	11	0	0	47	71	3.47	87	1.49	9	0	.0	0	9.9	ENE	33	NE	26	10	6	15	6.1	59
Pittsburgh (U)	749	------	- --	69	49	58.9	3.0	80	15+	34	11	0	0	-	-	1.63	-.86	.80	10		.0	-	----	---	--	---	--	--	--	--	--	54
Pittsburgh	1151	992.1	1022.9	67	47	56.7	3.7	79	14	31	11	0	2	46	71	1.50	.94	.79	9	2	.0	0	9.8	ESE	•27	SW	8	10	10	11	5.5	57
Reading (U)	266	1011.6	1023.7	66	48	57.0	9	82	15	35	11	0	0	-	--	3.12	.37	2.09	9	0	.0	0	9.0	---	35	SE	26	12	6	13	5.5	55
Scranton	940	990.0	1024.8	63	41	52.1	-.1	80	15	26	11	0	4	42	71	1.35	-2.03	1.03	6	1	.0	0	8.2	ESE	36	SE	26	12	11	8	4.9	57
Shippingport (U)	736	--- --	- -	68	45	56.4	--	80	15	30	11	0	1		-	1.80	- -	.89	8	1	.0	0	2.0	---	%39	NW	6	--	--		---	--
Williamsport	527	1005.2	- ---	65	42	53.6	.6	80	16+	29	11	0	2	-	--	3.53	.16	1.38	[illegible]	-	.0	0	---			---		10	8	13	5.6	-
RHODE ISLAND																																
Block Island	110	1018.7	1022.8	61	48	54.8	.3	73	15+	37	13+	0	0	-		2.30	.80	1.46	3	0	0	0	---			---	-	14	8	9	4.7	
Providence	55	1018.1	1024.1	64	41	52.1	-.6	82	16	27	11+	0	6	43	74	3.74	91	2.54	6	1	0	0	8.8	NW	•24	NNW	24+	16	7	8	4.2	75
SOUTH CAROLINA																																
Charleston (U)	9	------	- --	74	63	68.3	.1	85	1	51	12	0	0	--		1.95	-.49	1.17	8	4	.0	0	10.7	--	32	N	16	7	6	18	7.0	45
Charleston	41	1016.4	1018.2	74	58	65.8	.7	86	5	47	12	0	0	61	89	3.89	1.16	2.14	6	1	.0	0	10.1	NNE	--	- -	--	7	6	18	7.0	--
Columbia	217	1010.9	1019.2	75	57	66.0	1.1	90	1	44	9	1	0	58	82	1.83	-.59	.57	11	1	.0	0	7.7	NNE	23	NNE	16	9	4	18	6.4	54
Florence	146	1013.9	--- -	76	58	66.7	2.6	88	1+	41	12	0	0	--	--	2.21	-.06	.73	10	1	.0	0	----	---	-	---	--	9	4	18	6.5	--
Greenville	1018	982.3	1020.3	70	54	62.1	-.4	86	1	44	8+	0	0	53	77	1.97	1.49	.74	10	1	.0	0	11.3	NE	29	E	16+	11	4	16	5.7	52
Spartanburg	801	----	------	70	55	62.5	.3	85	1	42	12	0	0	--	--	2.21	-1.19	.90	12	0	.0	0	9.2	---	•29	NNE	16		--	--	---	--
SOUTH DAKOTA																																
Huron	1282	967.2	1014.4	70	38	53.9	3.9	86	5+	22	9	0	9	37	57	1.08	-.18	.58	2	3	.0	0	13.5	SSE	47	SE	24	14	9	8	4.2	79
Rapid City	3165	899.8	1013.6	69	38	53.4	4.3	90	12	23	30	1	6	27	40	.10	-1.03	.05	2	0	.2	T	10.4	NNW	45	NW	21+	16	6	9	4.1	77
Sioux Falls	1420	963.8	1015.3	72	41	56.1	6.1	87	11+	25	23	0	7	35	49	.62	-.84	.51	3	5	T	0	12.7	SSE	•35	SE	24	14	12	5	4.7	--
TENNESSEE																																
Bristol	1519	966.5	------	73	50	61.3	3.4	84	1	36	8	0	0	--	--	1.40	.99	.74	7	1	.0	0	----	---	--	---	--	12	6	13	5.2	--
Chattanooga	670	992.2	1020.0	74	52	63.0	2.2	83	6	40	8	0	0	53	78	3.85	.61	1.26	9	0	.0	0	5.1	NNE	24	S	25	13	3	15	5.7	52
Knoxville	950	985.0	1020.4	74	53	63.6	3.3	84	1	40	8	0	0	53	72	2.59	-.04	.83	12	2	.0	0	6.2	NE	23	W	31	13	3	15	5.3	66
Memphis (U)	271	------	--- --	77	58	67.3	2.3	85	6	46	27+	0	0	--	--	2.13	-1.05	.82	6	--	.0	0	----	---		- -	--	--	--	--	---	--

See footnotes at end of table.

State and station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No of days							No. of days		Snow, Sleet				Fastest mile							
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min. 32° F or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F.	°F.	°F	°F.	°F.		°F		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M p. h.			0–3	4–7	8–10	0–10	%
TENNESSEE (Cont'd.)																																
Memphis	263	1004.5	1019.2	78	53	65.7	2.1	86	6	40	8+	0	0	51	65	2.36	-0.91	0.85	5	2	0.0	0	7.9	SE	22	SE	25	12	10	9	4.5	73
Nashville	577	1000.1	1020.2	76	52	64.0	2.2	85	1+	40	8	0	0	53	74	1.99	-.53	.63	7	2	.0	0	5.8	SSE	23	SW	26	12	7	12	5.2	67
Oak Ridge (R)	905	986.8	---	75	54	64.1	5.7	82	1+	41	8	0	0	--	--	3.80	1.38	1.25	10	0	.0	0	4.1	---	--	---	--	13	2	16	5.6	--
TEXAS																																
Abilene	1759	955.0	1015.3	82	57	69.8	3.6	96	6	42	26	7	0	47	50	1.91	-.66	.82	5	5	.0	0	10.6	SSE	49	S	24	17	8	6	3.4	72
Amarillo	3590	889.9	1014.5	77	49	62.7	4.0	90	8	31	31	1	1	42	53	.38	-1.55	.35	3	3	.0	0	16.0	S	42	S	24	22	4	5	2.8	86
Austin	615	995.3	1016.7	87	61	73.7	2.8	96	4	48	31	10	0	54	57	.84	-2.11	.42	7	7	.0	0	8.0	SSE	34	NE	4	15	10	6	3.7	70
Brownsville	16	1012.9	1015.4	86	67	76.6	.6	91	4	56	23	5	0	67	77	.67	-2.28	.38	7	3	.0	0	11.4	SE	33	NW	20	20	9	2	3.4	76
Corpus Christi	41	1013.9	1015.9	86	66	76.3	1.8	93	7	55	31	6	0	65	74	2.76	.30	1.38	7	3	.0	0	8.7	SE	36	W	20	17	10	4	3.8	78
Dallas	487	998.3	1016.6	83	61	71.7	2.9	96	6	43	26	7	0	54	59	2.56	-.11	1.07	6	1	.0	0	7.7	SE	36	S	30	15	6	10	4.1	70
Del Rio	1091	981.4	1015.1	87	63	74.8	3.3	101	4	46	31	9	0	52	50	2.20	.00	2.18	2	2	.0	0	10.0	---	33	NW	20	18	8	5	3.1	79
El Paso	3920	886.9	1012.3	82	53	67.5	2.3	93	5	32	31	3	1	32	28	.01	-.82	.01	1	0	.0	0	10.2	SE	49	W	29	24	5	2	2.1	92
Fort Worth	544	996.3	1016.8	82	60	71.0	2.5	96	6	43	26	7	0	52	56	1.20	-1.49	.52	5	5	.0	0	10.9	SE	*38	S	24	15	7	9	4.0	--
Galveston (U)	7		--- -	80	70	75.3	1.7	90	7	61	27	1	0	-	--	1.46	-2.13	.58	4	---	.0	0	10.8	---	36	NW	20	--	--	--	---	87
Galveston	5	1014.9	1017.1	81	69	75.1	1.3	88	7	60	22	0	0	64	71	2.71	-1.13	1.47	6	3	.0	0	10.9	SE	--	---	--	17	11	3	3.0	--
Houston (U)	41	1011.5	-----	85	64	74.5	1.9	95	7	51	27	5	0	--	--	3.44	.05	1.97	6	6	.0	0	8.4	---	50	NE	3	16	11	4	3.4	86
Houston	50	1014.6	1017.0	84	62	73.3	1.9	95	7	51	31	5	0	61	72	2.66	-1.04	1.53	10	5	.0	0	9.5	ESE	--	---	--	15	10	6	3.6	--
Laredo	500	999.7	1014.7	91	67	79.2	2.7	103	4	54	31	19	0	61	60	1.43	-.14	1.14	4	3	.0	0	11.1	SE	*32	SE	12	18	13	0	2.7	--
Lubbock	3243	904.2	1014.8	78	49	63.7	2.5	91	6	32	31	3	1	44	53	1.73	-.34	.99	6	9	.0	0	13.2	S	*38	S	29	19	6	6	3.2	--
Midland	2854	917.0	1015.0	81	54	67.6	1.0	94	6	38	31	6	0	45	49	1.42	-.36	.63	4	4	.0	0	8.3	SE	*25	SSE	29	20	5	6	2.8	--
Port Arthur	16	1015.9	1017.3	83	60	71.9	1.4	90	4+	47	27	2	0	62	76	1.87	-1.06	.74	7	3	.0	0	9.9	E	65	NW	20	16	12	3	3.5	76
San Angelo	1903	948.9	1015.5	83	57	69.5	1.5	95	4+	39	26	7	0	48	50	2.14	-.11	1.27	6	4	.0	0	9.0	S	*41	S	29	21	6	4	2.5	--
San Antonio	792	988.2	1016.2	85	61	73.0	1.7	95	7	47	31	8	0	55	59	1.23	-.87	.54	6	6	.0	0	7.6	SE	29	NE	4	15	11	5	3.7	78
Victoria	110	1011.5	1016.1	87	65	75.9	2.3	96	7	54	31	12	0	61	64	4.23	1.35	2.87	6	4	.0	0	8.8	---	%45	NNW	20	14	15	2	3.6	--
Waco	500	995.6	1016.4	85	60	72.6	3.2	98	4	41	27	7	0	53	55	1.08	-1.33	.68	6	4	.0	0	11.4	SSE	--	---	--	15	7	9	4.2	--
Wichita Falls	1020	979.7	1016.1	82	57	69.4	4.1	99	6	43	26	7	0	49	53	4.61	1.83	2.64	5	6	.0	0	9.4	SSE	*35	N	14	16	10	5	3.7	--
UTAH																																
Milford	5028	844.2	1015.9	68	32	50.2	.1	82	7	13	25	0	17	--	--	.11	-.77	.10	2	2	1.3	1	----	---	--	---	-	16	7	8	3.9	--
Salt Lake City	4220	867.9	1015.6	66	38	52.1	-.8	86	7	22	25	0	7	33	53	1.86	.52	.92	8	2	10.4	6	9.3	SE	35	NW	27	11	6	14	5.2	62
VERMONT																																
Burlington	331	1009.1	1023.9	60	38	49.4	1.2	79	15	25	25	0	11	38	68	1.58	-1.31	.71	8	1	T	T	8.2	S	31	S	6	12	9	10	4.8	66
VIRGINIA																																
Lynchburg	947	987.8	-- ---	66	51	58.4	.6	79	1+	36	12	0	0	--	--	3.20	.33	1.47	16	1	.0	0	9.5	---	33	N	17	9	5	17	6.3	43
Norfolk	26	1020.4	1021.5	69	58	63.5	2.3	81	2	50	15	0	0	57	82	8.06	5.61	3.33	14	2	.0	0	12.9	NE	37	N	28	8	4	19	6.9	40
Richmond	162	1016.3	1022.4	70	52	60.9	2.1	85	2	35	11	0	0	54	81	4.92	2.31	1.94	12	0	.0	0	8.9	NNE	27	NE	17	9	6	16	6.6	44
Roanoke	1174	980.3	1022.7	68	50	58.9	1.0	83	1	34	11+	0	0	50	78	6.80	3.41	2.79	14	1	.0	0	6.8	NE	--	---	--	9	6	16	6.3	--
WASHINGTON																																
Olympia	190	1007.8	1014.9	58	40	48.8	-2.2	73	7	28	28	0	2	43	80	9.52	5.02	1.69	21	0	T	0	9.1	SSW	*33	S	17	3	6	22	8.1	--
Seattle (U)	14	---	--	58	47	52.6	-1.8	72	7	35	28	0	0	-	-	4.41	1.33	.77	19	0	.0	0	11.2	---	43	SW	14+	2	6	23	8.2	25
Seattle	14	1013.9	1015.0		--	---	- -	-	-	--	--	--		45	80	----	----	----	--	--	---	--	8.5	SSE	--	---	--	--	--	--	---	--
Seattle-Tacoma	376	1001.4	1015.5	56	43	49.5	-2.2	68	7	32	28	0	1	45	85	6.71	3.39	1.27	23	0	T	0	13.4	S	*32	SSW	14+	1	8	22	8.4	--
Spokane	2357	945.1	1014.7	54	38	46.3	-2.3	74	7+	29	31	0	6	37	73	1.87	.54	.72	12	1	.7	1	9.5	SSW	38	SW	14	5	4	22	7.7	3
Stampede Pass (R)	3958	876.7	1016.2	43	33	37.7	-4.7	66	7	25	23+	0	16	--	--	11.57	2.23	2.57	22	0	27.2	19	----	---	--	---	--	3	4	24	8.5	--
Tatoosh (R)	101	1010.2	1013.3	54	46	50.2	-1.7	63	7	38	31	0	0	45	85	13.65	4.93	3.82	23	3	T	0	14.1	E	73	S	19	4	8	19	7.7	3
Walla Walla (U)	949	979.7	1015.6	61	44	52.5	-2.7	75	8	34	29	0	0	-	--	2.08	.60	.42	11	0	.0	0	5.5	---	34	SW	29	6	5	20	7.0	65
Yakima	1061	974.9	1014.3	62	35	48.3	-2.3	78	7	22	24	0	9	37	66	.35	-.27	.16	6	0	T	0	7.5	WNW	*33	WSW	14	8	8	15	6.5	--
WEST VIRGINIA																																
Charleston	950	985.9	1021.3	71	49	60.0	2.6	82	15	32	11	0	1	50	76	1.63	-1.18	.62	12	0	.0	0	4.7	NE	*27	NW	6	10	6	15	6.2	--
Elkins	1970	- -	- ----	67	43	55.0	3.3	80	15	26	11	0	4	45	-	2.10	-.76	.57	10	1	.0	0	5.4	SSE	*32	WNW	7	9	7	15	6.3	--
Huntington (U)	565	--	------	73	50	61.3	2.1	83	14+	36	11	0	0	--	--	1.97	-.46	.92	7	0	.0	0	----	---	--	---	--	--	--	--	---	--
Parkersburg (U)	615	---	---- -	70	49	59.7	2.8	81	15	35	11	0	0	-	--	1.98	-.14	.66	9	1	.0	0	4.3	---	35	NW	6	13	7	11	5.2	60
WISCONSIN																																
Green Bay	689	996.3	1019.4	65	41	53.1	4.7	80	13	24	10	0	3	44	74	.65	-1.15	.51	2	5	.0	0	11.4	SW	52	S	30	13	11	7	4.2	70
La Crosse	652	993.2	1018.1	69	46	57.5	6.7	84	12	29	10	0	1	44	63	1.52	-.41	.60	6	6	.0	0	10.1	S	*29	WNW	6	15	10	6	3.9	--
Madison	857	984.1	1019.7	69	43	55.8	5.4	81	17	26	10	0	3	42	67	.31	-1.77	.24	4	0	.0	0	9.9	S	36	W	6	15	[illegible]	8	4.0	75
Milwaukee	672	994.9	1020.1	66	46	55.8	4.4	81	13+	28	10	0	1	45	71	.15	-1.82	.10	5	0	.0	0	14.0	S	41	SE	25	16	8	7	4.2	78
WYOMING																																
Casper	5322	835.8	1012.4	64	36	49.8	3.4	82	7	22	29	0	11	20	36	.28	-.83	.22	4	1	1.4	T	15.9	SW	*46	WSW	21	15	8	8	4.3	--
Cheyenne	6131	811.4	1013.7	65	36	50.4	4.0	82	7	23	20	0	9	22	37	.16	-.97	.12	2	0	T	T	13.9	W	51	W	13	17	7	7	4.0	74
Lander	5563	834.1	1014.0	64	34	49.0	4.4	81	7	19	30	0	14	26	44	.63	-.90	.63	2	0	.7	T	7.1	---	49	SW	[illegible]	16	9	6	4.0	74
Sheridan	3942	882.5	1013.8	66	33	49.2	2.6	84	7	16	30	0	17	28	48	.88	-.39	.69	3	0	1.2	1	7.7	S	45	NW	21	13	9	9	5.2	70
PACIFIC AREA																																
Canton Island	9	1009.8	1010.3	88	78	83.1	-1.0	89	5+	74	3	0	0	72	72	.36	-.03	.11	6	0	.0	0	17.5	E	*37	E	3	3	10	18	7.4	--
Hilo	31	1013.9	1015.9	82	67	74.1	-.4	85	4+	63	16	0	0	68	84	14.44	3.42	3.42	26	1	.0	0	7.8	WSW	*25	SE	25	0	6	25	8.7	24
Honolulu	7	1015.2	1015.7	84	72	77.9	-.3	86	5+	68	10	0	0	67	71	1.81	-.08	.96	8	0	.0	0	9.4	ENE	32	NE	31	2	15	14	6.9	77
Koror (R)	94	1006.1	1009.8	88	75	81.2	.1	91	26	72	18	4	0	76	86	11.98	-.56	2.27	21	0	.0	0	----	---	--	---	--	0	2	29	9.4	--
Lihue	115	1010.2	1016.0	84	71	77.6	1.1	88	11	67	10	0	0	69	79	9.17	4.54	3.50	20	3	.0	0	10.7	ENE	32	E	16	2	11	18	7.5	52
Majuro	10	1009.5	1009.8	85	77	80.8		87	4+	74	3+	0	0	75	84	20.59	----	3.16	25	8	.0	0	----	---	--	---	—	1	10	20	8.3	--
Ponape (R)	118	1004.4	1009.8	88	72	80.0	-.7	91	4+	70	1+	9	0	75	88	15.40	-.99	2.74	28	2	.0	0	----	---	--	---	--	0	9	22	8.4	--
Truk, Moen Is.	8	1009.8	1010.2	87	76	81.3	.6	89	8	73	2	0	0	76	84	9.83	-1.20	2.11	25	5	.0	0	----	---	--	---	--	0	8	23	8.5	--
Wake Island	11	1011.9	1012.2	87	76	81.8	.4	89	3	71	5	0	0	73	77	6.26	.22	2.71	24	5	.0	0	11.4	ENE	*32	ENE	12	9	12	10	5.7	--
Yap (R)	53	1007.5	1009.5	88	75	81.4	-.5	93	2	73	5+	10	0	76	86	14.26	1.44	2.87	24	3	.0	0	----	—	--	---	--	0	0	31	10.0	--
WEST INDIES																																
San Juan, P.R. (U)	47		-----	85	75	80.0	-.1	92	14	73	11+	2	0	-	—	8.01	2.74	2.06	21	8	.0	0	----	---	--	---	--	--	--	--	---	--
San Juan, P.R.	15	1010.4	------	86	73	79.4	---	90	14	70	11	1	0	-	--	7.97	----	3.42	21	7	.0	0	5.9	—	24	NE	15+	3	10	18	7.1	65
ALASKA																																
Anchorage	92	995.9	1001.2	36	21	28.4	-7.6	48	1	-5	31	0	29	16	58	2.19	.32	.80	10	0	13.4	6	2.8	N	*23	SSE	27	3	10	18	7.6	41
Annette	110	1001.7	1005.9	48	38	42.8	-4.1	58	8	29	27	0	3	38	82	20.65	6.27	3.59	27	0	4.2	2	12.1	SE	*37	S	17	1	2	28	9.0	--
Barrow	22	1009.8	1010.7	16	4	9.9	-7.2	32	26	-17	31	0	31	5	78	.22	-.30	.10	10	0	2.2	4	15.3	ENE	42	NE	13	4	5	22	7.9	--
Bethel	10	1003.7	1005.1	32	21	26.6	-5.2	42	8	-1	31	0	28	23	87	1.21	-.54	.39	10	0	5.2	3	9.8	S	*25	SSE	26	2	9	20	7.8	--
Cold Bay	90	1005.8	1009.8	43	35	39.0	-1.5	56	26	28	7+	0	11	35	85	5.76	1.38	2.06	29	0	2.9	T	21.3	NW	*46	WSW	27+	0	2	29	9.1	--
Cordova	40	997.3	999.0	43	25	34.3	-6.5	53	1+	12	24+	0	25	31	85	6.15	-9.41	1.70	18	0	4.9	4	4.8	E	*29	E	10+	9	4	18	6.8	--
Fairbanks	436	988.8	1006.6	25	10	17.1	-10.4	37	2	-19	25	0	31	12	80	.91	-.01	.33	11	0	13.8	7	6.2	N	*23	NNE	17	5	3	23	7.9	--
Juneau	15	1001.7	1002.6	43	33	37.5	-4.4	52	3	17	26	0	15	34	85	6.50	-1.97	.69	23	0	15.6	10	8.0	ESE	36	SE	27	3	2	26	8.9	17
King Salmon	44	1002.7	1004.6	35	19	26.6	-9.2	45	9+	-3	24+	0	29	23	84	2.62	.10	.60	14	0	12.5	8	9.9	NNW	*28	NNW	4	4	8	19	7.3	--
Kotzebue	10	1005.8	1006.4	22	10	15.9	-9.6	35	25+	-8	31	0	31	12	82	.22	-.36	.06	10	0	8.8	9	16.5	E	*43	SE	26	8	8	15	6.3	--
McGrath	334	992.9	1006.2	25	10	17.5	-10.1	42	1	-20	24	0	31	10	69	1.65	-.02	.95	16	0	11.9	5	4.3	N	*20	S	26	2	5	24	8.2	--
Nome	13	1003.4	1004.3	31	20	25.4	-4.6	41	9	2	21	0	28	21	80	2.09	.39	.67	13	0	12.4	8	11.1	NE	44	SW	27	7	6	18	7.0	37
Northway	1713	940.4	1005.1	20	4	12.2	-12.1	38	1	-27	31	0	31	--	—	1.20	.71	.34	9	0	17.3	21	----	---	--	---	--	1	4	26	8.9	--
St. Paul Island	22	1007.5	1008.5	42	34	38.0	-1.1	48	6	26	28	0	15	34	85	1.66	-1.46	.26	20	0	2.8	1	----	---	--	---	--	1	6	24	8.4	--
Yakutat	28	999.0	1000.2	43	30	36.5	-5.2	53	3	12	31	0	19	33	87	12.58	-7.35	1.68	21	0	26.6	18	9.4	ESE	*44	SE	10	4	2	25	8.2	--

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.
- * Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.
- + And also on a later date or dates.
- % Peak gust.
- a Maximum hourly average.
- # Number of days maximum 70° or above for Alaskan stations.
- ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.

HEATING DEGREE DAYS

able 3

(Base 65°F.)

OCTOBER 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
irmingham	62	64	136
obile	1	1	28
ontgomery	26	26	69
ARIZONA			
lagstaff	594	882	956
hoenix (U)	310	310	13
hoenix	47	47	22
rescott	247	247	295
ucson	47	47	24
inslow	246	246	294
uma	13	13	0
ARKANSAS			
t. Smith	42	42	140
ittle Rock	32	32	120
exarkana	29	29	69
CALIFORNIA			
akersfield	92	92	41
ishop	307	313	308
lue Canyon	535	722	551
urbank	59	61	70
ureka (U)	353	1132	1114
resno	135	135	86
os Angeles (U)	34	34	58
os Angeles	42	42	196
t. Shasta (R)	546	782	682
akland	208	405	394
ed Bluff	137	137	59
acramento (U)	123	125	92
acramento	151	152	120
andberg (R)	324	369	237
an Diego	35	35	94
an Francisco (U)	169	680	604
an Francisco	198	445	555
an Jose	138	160	141
anta Maria	215	576	460
COLORADO			
lamosa	641	1058	1142
olorado Springs	372	481	575
enver	277	364	561
rand Junction	281	289	369
ueblo	251	283	457
CONNECTICUT			
ridgeport	303	460	400
artford	423	701	499
ew Haven	363	560	474
DELAWARE			
ilmington	249	371	329
DIST. OF COLUMBIA			
ashington (U)	158	237	263
ashington	188	277	274
FLORIDA			
palachicola (U)	1	1	17
aytona Beach	0	0	0
ort Myers	0	0	0
acksonville	0	1	16
ey West (U)	0	0	0
iami (U)	0	0	0
iami	0	0	0
iami Beach	0	0	0
rlando	0	0	0
ensacola (U)	1	1	18
allahassee	15	15	31
ampa	0	0	0
est Palm Beach	0	0	0
GEORGIA			
thens	77	94	105
tlanta	49	54	118
ugusta	41	59	59
olumbus	23	26	78
acon	23	28	63
ome	95	108	148
avannah	20	28	38
IDAHO			
oise	458	599	524
ewiston	474	606	539
ocatello	550	738	670
ILLINOIS			
airo (U)	50	55	189
hicago (U)	140	216	
hicago	153	245	440
hicago University	166	269	
oline	189	311	467
eoria	129	209	436
pringfield	116	187	404
INDIANA			
vansville	121	180	274
t. Wayne	222	371	501
ndianapolis	143	254	385
outh Bend	214	388	500
IOWA			
urlington	137	229	419
es Moines	162	279	471
ubuque	239	433	629
eokuk (U)	101	165	
ioux City	197	320	558
KANSAS			
Concordia (U)	127	171	332
Dodge City	128	154	302
Goodland	269	353	508
Topeka (U)	80	106	284
Topeka	109	151	338
Wichita	96	113	251
KENTUCKY			
Lexington	138	224	315
Louisville	131	198	283
Pikeville (U)	97		
LOUISIANA			
Baton Rouge	5	5	27
Lake Charles	1	1	22
New Orleans (U)	0	0	5
New Orleans	0	0	7
Shreveport	23	23	53
MAINE			
Caribou	620	1387	1282
Greenville (U)	597	1297	
Portland	519	951	785
MARYLAND			
Baltimore (U)	128	188	236
Baltimore	218	329	328
Frederick	295	443	323
MASSACHUSETTS			
Blue Hill Obs. (R)	395	708	
Boston	330	525	399
Nantucket	354	547	539
Pittsfield	499	944	844
MICHIGAN			
Alpena (U)	422	921	880
Detroit	240	423	485
Detroit (Willow Run)	245	440	499
East Lansing (U)	252	472	
Escanaba (U)	422	890	959
Grand Rapids	289	533	649
Marquette (U)	363	975	935
Muskegon	307	570	688
S. Ste. Marie	490	1159	1172
MINNESOTA			
Duluth (U)	493	1177	1048
Duluth	477	1137	1096
Internat. Falls	534	1243	1260
Minneapolis	271	504	641
Rochester	297	578	743
St. Cloud	395	772	880
MISSISSIPPI			
Jackson	30	30	69
Meridian	39	39	90
Vicksburg (U)	13	13	51
MISSOURI			
Columbia	81	119	330
Kansas City	63	80	284
St. Joseph	115	157	319
St. Louis (U)	68	85	240
St. Louis	75	102	278
Springfield	85	112	318
MONTANA			
Billings	425	622	719
Glasgow	540	860	862
Great Falls	532	852	871
Havre (U)	538	824	892
Helena	608	958	1039
Kalispell	651	1120	1095
Miles City	424	613	729
Missoula	626	996	994
NEBRASKA			
Grand Island	213	320	459
Lincoln (U)	145	203	396
Norfolk	241	381	561
North Platte	315	466	563
Omaha	161	244	424
Scottsbluff	376	503	593
Valentine (U)	350	520	627
NEVADA			
Elko	625	920	809
Ely	637	914	855
Las Vegas	85	85	61
Reno	528	707	696
Tonopah	470	520	523
Winnemucca	562	759	705
NEW HAMPSHIRE			
Concord	532	955	787
Mt. Washington Obs.	932	3002	
NEW JERSEY			
Atlantic City (U)	183	254	259
Newark	244	372	348
Trenton (U)	240	373	340
NEW MEXICO			
Albuquerque	195	195	228
Clayton	246	294	386
Roswell	107	107	164
NEW YORK			
Albany	464	764	606
Binghamton	448	833	789
Buffalo	300	543	601
New York (U)	216	329	302
New York	205	294	278
Rochester	342	627	616
Schenectady	420	674	
Syracuse	373	628	542
NORTH CAROLINA			
Asheville (U)	197	282	312
Charlotte	87	133	154
Greensboro	172	247	231
Hatteras (R)	7	9	63
Raleigh	129	187	165
Wilmington	29	41	73
Winston-Salem	172	240	210
NORTH DAKOTA			
Bismarck	485	837	891
Devils Lake (U)	541	1011	1038
Fargo	404	748	867
Grand Forks	509	954	
Pembina	482	905	
Williston (U)	537	899	937
OHIO			
Akron	279	520	478
Cincinnati (U)	93	144	264
Cincinnati	138	236	378
Cleveland	198	374	425
Columbus	173	295	414
Dayton	171	285	403
Sandusky (U)	180	317	393
Toledo	256	460	501
Youngstown	298	544	457
OKLAHOMA			
Oklahoma City	72	72	168
Tulsa	41	41	170
OREGON			
Astoria	448	964	733
Burns (U)	592	879	818
Eugene	428	635	592
Meacham	670	1124	1089
Medford	421	520	403
Pendleton	429	515	457
Portland (U)	346	456	392
Portland	407	596	482
Roseburg	415	568	
Salem	407	589	483
Sexton Summit (R)	582	978	782
PENNSYLVANIA			
Allentown	335	534	464
Harrisburg	295	448	377
Philadelphia (U)	177	254	252
Philadelphia	222	333	316
Pittsburgh (U)	183	316	354
Pittsburgh	250	453	491
Reading (U)	243	376	347
Scranton	394	692	522
Williamsport	346	543	494
RHODE ISLAND			
Block Island	306	462	445
Providence	394	614	514
SOUTH CAROLINA			
Charleston (U)	13	16	34
Charleston	38	50	52
Columbia	45	68	82
Florence	39	60	94
Greenville	113	156	141
Spartanburg	108	148	143
SOUTH DAKOTA			
Huron	345	551	647
Pierre	341	514	
Rapid City	364	521	749
Sioux Falls	284	476	664
TENNESSEE			
Bristol	132	216	297
Chattanooga	96	111	193
Knoxville	75	106	212
Memphis	48	48	143
Nashville	73	83	176
TEXAS			
Abilene	36	36	103
Amarillo	127	143	277
Austin	0	0	30
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	14	14	53
Del Rio	3	3	26
El Paso	65	65	70
Ft Worth	21	21	58
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	7
Laredo	0	0	0
Lubbock	101	102	196
Midland	54	54	
Port Arthur	4	4	20
TEXAS (Cont'd.)			
San Angelo	33	33	72
San Antonio	3	3	25
Victoria	0	0	0
Waco	15	15	44
Witchita Falls	37	37	120
UTAH			
Milford	453	506	576
Salt Lake City	398	468	469
VERMONT			
Burlington	480	865	759
VIRGINIA			
Lynchburg	216	293	285
Norfolk	69	90	161
Richmond	146	224	243
Roanoke	202	294	283
WASHINGTON			
Olympia	493	884	815
Seattle (U)	379	601	557
Seattle-Tacoma	474	841	749
Spokane	592	824	758
Stampede Pass (R)	834	1756	1626
Tatoosh Island (R)	452	1350	1304
Walla Walla (U)	382	449	401
Yakima	511	666	603
WEST VIRGINIA			
Charleston	156	278	310
Elkins	302	537	574
Huntington (U)	123	208	245
Parkersburg (U)	159	278	328
WISCONSIN			
Green Bay	367	759	788
La Crosse	238	445	630
Madison	285	485	653
Milwaukee	287	520	614
WYOMING			
Casper	464	662	845
Cheyenne	445	669	890
Lander	486	674	906
Sheridan	483	711	885
ALASKA			
Anchorage	1128	2227	1939
Annette	680	1523	1397
Barrow	1702	4521	4126
Bethel	1185	2368	2327
Cold Bay	801	2194	
Cordova	946	2297	1983
Fairbanks	1481	2579	2220
Juneau	843	1943	1850
King Salmon	1181	2367	
Kotzebue	1514	3108	2775
McGrath	1469	2626	2352
Nome	1220	2829	2745
Northway	1634	3118	2473
St. Paul	828	2658	2513
Yakutat	877	2139	1979

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

OCTOBER 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OKLAHOMA Enid, Garfield County	1	P m.					5	1	Wind	169-foot TV transmitter antenna was being hoisted from its 650-foot tower when strong winds caused swaying vibration. Antenna and tower crashed to ground. Storm moved northward.
	1									Minor storm also reported at Lexington, Tex.
MICHIGAN (Lower) Central portion	2	Early morning					4	1	Electrical	Storm covered several counties. Barns in Isabella and Shiawassee Counties destroyed by lightning. Several powerlines also damaged by lightning.
LOUISIANA Between Duson and Scott, Lafayette Parish	2	12:10 p m.	Short	Narrow	0	0	2	2	Tornado	Tornado moving northeastward reported by pilot.
LOUISIANA Bosco area, Ouachita Parish	2	2:30 p.m.	Short	Narrow	0	0	3	2	Tornado and hail	Heavy hail damaged airplane in flight and crops on ground; trees uprooted by tornado. Storm moved northeastward.
NEW YORK Honeyville, Jefferson County	2	2:40 p.m.			1		1	1	Electrical	Man killed by bolt of lightning which struck wire fence while he was closing a gate.
LOUISIANA Lafayette (30 miles east of), West Baton Rouge Parish	2	3:07 p.m.			0	0			Tornado	Funnel aloft reported by pilot.
ARKANSAS Palarm Creek Bridge (near), Pulaski County	2	Afternoon			1				Electrical	Man killed by lightning.
MASSACHUSETTS Middlesex County	2	8 p.m.					4	1	Electrical	Lightning caused $15,000 fire in Acton, destroying barn and contents, including a cow. Minor damage from lightning strikes in other communities in County.
OKLAHOMA Tishomingo, Johnston County	2	11 p.m.					4	1	Electrical and rain	Lightning struck 2 homes, destroying 1 and damaging the other.
	2									Minor storm also reported at Fredericksburg, Tex.
MAINE Bangor, Penobscot County	3	10 a.m.					3	1	Wind	High wind toppled a tree onto powerlines in Bangor, which was instrumental in interrupting service to large area of eastern Maine from Bangor to Eastpor
MISSOURI Springfield (30 miles north of), Polk County	3	1:42 p.m.			0	0			Tornado (suspected)	Suspected tornado cloud observed by airplane pilot. No further details available.
TEXAS Port Lavaca (6 miles northwest of), Calhoun County	3	4:40 p.m.					3	1	Hail and wind	At Six Mile community hail of golf-ball size lasting 15 minutes damaged roofs, windows, buildings, and farm equipment. Wind gage registered 85 m.p.h and then was blown down.
TEXAS Dallas (40 miles northeast of)	3	8:28 p.m.			0	0			Tornado	Funnel cloud sighted, did not touch ground.
	3									Minor storm also reported at Klondike, Mo.
TEXAS Brooks, Hidalgo, Kenedy, Kleburg, Nueces, and San Patricio Counties	4	12-1:30 p.m.	120	*20			4		Wind, rain, and hail	At Bishop, Calallen, Driscoll, Edroy, Odem, and Robstown in Corpus Christi area heavy thunderstorm built up at about noon moved southward, skirting Kingsville and entered Mexico at Mission. Steel grain elevator under construction at Edroy collapsed in wind estimated at Edroy to have reached 70 m.p.h. 1.16 inches of rain measured, most of which fell within 15-minute period. At Calallen winds estimated at 56 to 60 m.p.h., but no serious damage reported. At Robstown thunderstorm hit about 1:30 p.m., causing damage in town to TV antennas and signboards. At service station considerable wind damage sustained. At Driscoll grain elevator and cotton picking machine damaged.
TEXAS Jasper, Jasper County	4	1:15 p.m.	5-1/2	*4			5	4	Hail, wind, and rain	Hailstones 2-1/2 inches in diameter fell over area for 12 to 15 minutes. Maturing pecan crop damaged and damage to real and other property amounted to several hundred thousand dollars, according to insurance figures. Storm moved southward.
TEXAS Bishop (3 miles northeast of), Nueces County	4	1:30 p.m.			0	0	3	1	Tornado, wind, rain, and hail	Tornado moving southward struck poultry barn, no other damage reported.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TEXAS Bishop (3 miles northeast of), Nueces County	4	1:30 p.m.			0	0	3	1	Tornado, wind, rain, and hail	Tornado moving southward struck poultry barn, no other damage reported.
TEXAS Port Arthur, Jefferson County	4	3:25 p.m.			0	2	4		Tornado and hail	2 persons injured, 1 severely. Small tornado in southwestern Port Arthur. Storm moved southward.
LOUISIANA St. Gabriel, Iberville Parish	4	4 p.m.					2		Hail	Considerable damage to sugarcane.
	4									Minor storm also reported at Beaumont, Tex.
CALIFORNIA Southern and central coasts, San Joaquin Valley, and Sierras	4-7					4	5		Rain, hail, and electrical	Heaviest damage in Taft-Bakersfield area where 1.15 inches of rain fell within 3-hour period, 6 to 9 p.m., on 6th. Hail 3/8 inch in diameter at Bakersfield WBAS, with unofficial reports at East Bakersfield of hailstones to 2 inches in diameter. Although some streets flooded in Bakersfield, most damage to streets and homes in Ford City, Dusty Acres, Valley Acres, Fellows, Derby Acres, Maricopa, South Taft, and Taft Heights, where 4 minor injuries occurred, minor damages to 221 homes and 71 other buildings. Damage to county roads estimated at $250,000. Rains caused down-grading of cotton and reduced alfalfa-seed crop. Next heavy damage in Paso Robles area, with many power outages on 4th, and flash floods inundated a number of fields and several streets in eastern section of Paso Robles. At Palmdale hailstones up to 1/2 inch in diameter on 6th. Susanville area reported as much as 3 inches of hail in some areas, with sizes up to 3/4 inch in diameter.
	5									Minor storm reported in Suwannee County, Fla.
PENNSYLVANIA Armstrong and Clarion Counties	6	2:30 a.m.					4	1	Electrical and rain	Lightning fired 2 barns, destroying both structures and contents.
	7									Minor storm reported in Yampa area, Colo.
NEW YORK Blasdell, Erie County	8	12:30 p.m.					4	1	Wind	Wind wrecked drive-in theater.
	8									Minor storm also reported at Boise, Idaho.
	10									Minor storms reported in Black Hawk, Floyd, and Mahaska Counties, Iowa.
IOWA Jasper County	11	Midnight-1 a.m.					4	1	Electrical	Destroyed house and barn with their contents, and damaged utility lines.
NEBRASKA Central City (near), Merrick County	11	Morning			1		2	1	Wind	Grain elevator hopper blown over, corner struck and killed small child.
IOWA Buchanan County	11	Afternoon					4	1	Electrical	Destroyed large barn and contents.
SOUTH DAKOTA Corson and Minnehaha Counties	13	Noon-6 p.m.					4	2	Electrical, hail, and wind	North of Firesteel, lightning struck farm home which burned to ground. Northeast of Sioux Falls, near Sherman, hail 1-1/2 inches in diameter knocked corn to ground, necessitating gleaning by hand. Wind reportedly blew truck off slippery grade, causing it to overturn.
MINNESOTA Eastern counties	13	4:30 p.m.				1	4	2	Wind, rain, and electrical	Large windows blown out, many trees downed. Several farm buildings blown down and destroyed. Estimated $25,000 property damage occurred at Pine City. Hail as large as 1 inch observed at Minneapolis Weather Bureau Airport Station, however, little damage reported in Twin City area.
OWA Most central and southwestern areas	13	Afternoon-evening					4	1	Electrical, wind, and rain	In area bounded by line from Fremont County to Winnebago County to Delaware County to Appanoose County. Numerous farm buildings damaged or destroyed.
KLAHOMA El Reno, Canadian County	13	P.m.							Wind and rain	Heavy rains caused minor flooding in stores and damaged unharvested cotton. Strong, gusty winds blew down 3 walls of cement-block building under construction.
KLAHOMA Cheyenne, Roger Mills County	13					1	1	1	Electrical	Man injured when lightning struck wire of fence he was repairing.
	13									Minor storms also reported at Elk Creek and near Adams, Nebr.; and at Agra, Okla.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Southern and central portions	13-14	Afternoon 13th-evening 14th							Electrical, wind, and hail	Cold front passing across Kansas from northwest set off a number of local damaging storms. At Great Bend, Barton County, on 13th at 11 p.m., fire started by lightning bolt caused $2,000 property damage in home; on 14th at 2:33 a.m., another home at Great Bend struck, but with little resulting damage. At Radium, Stafford County, house struck by lightning, with minor damage to house, furniture, and wiring. At Medicine Lodge, Barber County, late on evening on 13th barn and contents of grain, hay, calf, and hog burned after being struck by lightning. At Wichita, Sedgwick County, at 1:18 a.m., on 14th lumberyard struck by lightning, resulting in serious fire that raged for 2 hours; several train carloads of new lumber had been placed in yard before fire broke out, burned with estimated loss $35,000. During night of 13th-14th large barn and silo, 7 miles south and 1 west of Newton, Harvey County, destroyed by wind; combine also damaged. At Burlington, Coffey County, on night of 13th and 14th roof of new building under construction damaged by high wind. At Coffeyville, Montgomery County on early morning of 14th frame barn and contents of 40 tons of alfalfa, 150 bushels of oats, and other materials burned when set afire by bolt of lightning. Light hail and minor wind damage reported from other localities.
OKLAHOMA Stroud, Lincoln County	14	A.m.					4	1	Electrical and rain	Lightning caused fire which burned an almost full 10,000-barrel crude oil storage tank.
OKLAHOMA Frederick, Tillman County	14	A.m.-p.m.						1	Electrical and rain	Lightning caused extensive damage to 2 homes at about 10 a.m., and to another at 9 p.m.
TEXAS Estelline, Hall County	14	5-9 p.m.					5		Hail, wind, and rain	Wind, rain, and hail wiped out about 80 percent of cotton crops. Heaviest damage occurred around 9 p.m. In 10-mile area from town 2-inch rainfall was average, and in town 4 inches measured. Automobile heavily damaged when wall of water washed it off highway. Roofs and screens on buildings also suffered heavy damage.
OKLAHOMA Cloud Chief to Clinton and Weatherford, Custer and Washita Counties	14	6 p.m.	25	*5			4	5	Wind, rain, hail, and electrical	Severe hailstorm, with stones up to size of baseballs, cut wide path of destruction across eastern Washita and southeastern Custer Counties. Cotton crop completely destroyed. Property damage included roofs, windows, automobiles, and utility lines. Storm moved southwestward.
	14									Minor storms also reported at Ardmore, Comanche, Oklahoma City, Ryan, and Tulsa, Okla.
TEXAS Morton, Cochran County	15	Midnight					3	6	Hail, wind, and rain	Damaging hail of golf-ball size and high winds accompanied downpours which destroyed cotton crops. Conservative estimate of crop damage is 2 million. Vehicles battered by hailstones, windows knocked out, sections of roofs badly damaged.
FLORIDA Dade County	15	12:30 p.m.			0	0	3		Tornado	Affected only 2 blocks of residential area 15 miles north of Miami.
WISCONSIN Superior, Douglas County	15	5:30 p.m.					3	1	Wind and rain	Peak wind speed 80 m.p.h. Building and neon sign damaged; minor tree losses. Storm moved northeastward.
TEXAS San Patricio County	15	Evening			0	0			Tornadoes	3 funnels sighted, did not touch ground; 30 miles northwest of Corpus Christi.
	15									Minor storm also reported in central Iowa.
FLORIDA Eastern counties	15-16				2				Rain and wind	Low pressure area moved north from Cuba just off east Florida coast, bringing high winds and tides along entire east coast and heavy rainfall to numerous inland and coastal points. Heaviest rains in Kissimmee River drainage in Osceola County and near Fellsmere, Indian River County, where some 48-hour totals approached 20 inches. Resulting flood water inundated towns of St. Cloud, Taft, Kissimmee, and Fellsmere, washed out roads and bridges, and isolated several other towns in area. Property damage, beach erosion to water control structures, etc., were in excess of $3,000,000. Large tracts of agricultural lands, pastures mainly, inundated. Several counties reported more than 75 percent of pasture land flooded and applied for emergency Federal aid for livestock feed. 2 persons drowned in surf during storm.
TEXAS San Patricio County	16	Morning			0	0			Tornado	Funnel clould aloft sighted 35 miles northwest of Corpus Christi.
NORTH CAROLINA East of mountains	16-18						5	5	Wind, rain, and tides	Storm moved northward from Florida and crossed North Carolina coastal plain on 17th. Wind gusts in excess of 50 m.p.h., on coast, and 35 to 45 m.p.h., westward to mountains. Most damage due to rain, however, which continued after storm center passed, and to high tides. Most property damage to small craft along coast battered by wind and waves; crop damage largely reduction in quality of corn, cotton, soybeans, peanuts, and hay from protracted wet weather. Additional losses from interference with construction work, State and County Fairs, and other outdoor activities.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TEXAS Hereford, Deaf Smith County	17				1	2			Electrical	Lightning killed construction foreman and injured 2 others, not seriously, at work.
NEW JERSEY Southeast coastal areas	17-18						3	1	Wind and rain	Principal damage due to strong winds and heavy rain, resulting in minor flooding along southeast coastal areas. Tides 1 to 1-1/2 feet above normal and accompanied by winds up to 52 m.p.h. As result, several small craft swamped and some water damage reported along immediate coast. Storm moved northeastward.
	17-18									Minor storm also reported in Beaufort, Charleston, Georgetown, and Horry Counties, S. C.
TEXAS Sycamore Creek, area, Val Verde County	18	2:10-2:30 a.m.					4	1	Wind and rain	At Sycamore Creek near Del Rio a high speed wind blew porch off railroad section house, damaged 2 or 3 barns and roof of house. Telephone poles blown down and wires broken. In about 3 hours estimated 5 to 6 inches of rain fell. Storm moved eastward.
TEXAS Del Rio (12 miles east of), Val Verde County	18	7 a.m.					4		Wind	Brief but severe windstorm disrupted communication lines. Greatest damage appeared to be to communication system, although 1 or 2 barns and windmills sustained some damage. Storm moved southeastward.
TEXAS Crystal City, Zavala County	18	7-8 a.m.			0	0	3		Tornado	Tornado moving southeastward demolished 2 homes, ripped roofs off others, and damaged warehouse.
KENTUCKY Anchorage (near), Jefferson County	19	P.m.					4	3	Electrical	Fire believed to have been started by lightning destroyed barn and its contents near Anchorage. Lost were several heads of cattle, a tool shed, and several thousand bales of hay.
WASHINGTON Northwestern Olympic Peninsula, Strait of Juan de Fuca, and northern counties in west	19-20				2	1			Wind and rain	High wind and heavy rainfall occurred along northwestern Washington coast through Strait of Juan de Fuca, and in northern counties west of Cascades. 1 person killed by falling tree while clearing highway of timber near Clallam Bay, and another person killed when wind blew tree down in logging camp near Bellingham. Power- and communication lines damaged in several localities.
TEXAS Austin (northeast of), Travis County	20	12:56 p.m.			0	0			Tornado, rain, wind, and hail	Small tornado dipped to ground just northeast Austin; oak trees and oat fields damaged. Storm moved southeastward. 1 inch of hail fell in Austin.
TEXAS South-central portion	20	1:35 p.m.			0	0	2	2	Tornadoes, wind, rain, and hail	4 tornadoes sighted in Tilden area; no damage. 2 funnel clouds reported in Corpus Christi area during squall-line passage; did not touch ground. Limbs of trees torn off, TV antennas and signs blown down in heavier wind areas. Building damage reported at Robstown, Edroy, Simmons, Raypoint, and Beeville, damage limited to roofs and plate-glass windows. Storm moved southeastward.
TEXAS Bryan area, Brazos County	20	2:20-2:50 p.m.			0	0	5		Tornadoes, wind, rain, and hail	3 or 4 funnel clouds sighted near Bryan; none touched ground. 3 funnels sighted at College Station at 1 time. About 15 aircraft badly damaged by high winds. TV antennas all over Bryan and College Station bent and damaged, tree limbs broken, and sheetmetal roofs blown off. Hail reported at nearby towns.
TEXAS Seguin, Guadalupe County	20	4 p.m.			0	1	3		Tornado, wind, and hail	1 home and barn demolished; another home unroofed. Woman cut by flying debris. Storm moved eastward.
TEXAS Jefferson, Galveston, and Orange Counties	20	5 p.m.			5	3	5		Wind, electrical, hail, and rain	At Beaumont severe thunderstorm damaged utilities and TV aerials, tree limbs, and roofs. 1 house damaged by lightning. Fastest mile at Jefferson County Airport 65 m.p.h., at 5:25 p.m., with light hail. At Port Arthur considerable damage done by winds, principally to utility installations and TV aerials, of which at least 1,000 blown down or twisted. Tree limbs broken, plate-glass windows broken, and contents damaged or lost. Metal awnings ripped from stores and homes. Many boats overturned in nearby lake. Minor damage at Orange. At Galveston 4 drowned, 1 electrocuted by hanging powerline during heavy thunderstorm. Some light hail between 4:25 and 4:45 p.m., and wind gusts to 65 m.p.h. Many boats capsized and lost in Galveston Bay. Plate-glass windows broken, TV aerials downed, minor damage to signboards and flimsy structures on mainland. No appreciable damage on Galveston Island.
LOUISIANA New Iberia, Iberia Parish	20	7:20 p.m.	Short	Narrow	0	2	4	2	Tornado	Considerable damage by trees blown over on house, wrecking it and injuring 2 persons. Tops of trees reported twisted off indicating funnel cloud just above ground. Storm moved northeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	20									Minor storms also reported at De Quincy, La.; at Braymer, Mo.; and at Brownsville, Tex.
GEORGIA Southern portion	21	Afternoon					2	1	Electrical, wind, and hail	Thunderstorms general over southern part, with hail reported in several southeastern counties. Some minor wind damage at Moultrie, Colquit County, when gusts reached 58 m.p.h.
SOUTH CAROLINA Taylors and Paris (near), Greenville County	22	3:15 p.m.	8/10		0	0	2	1	Tornado (suspected), wind, and rain	Caused minor damage near Taylors. Uprooted several trees and destroyed small garage near Paris. Storm moved northward.
	22									Minor storm also reported in Forsyth and Rockingham Counties, N. C.
	22-23									Minor storm reported in Philadelphia County, Pa.
ARIZONA Salt River Valley (northwestern section)	23	Morning					4	1	Rain and wind	Heavy rains fell over narrow strip of central Arizona. The strip centered along line running from Litchfield Park, through Cavecreek and ending in Rim country northeast of Payson. Width of path of heaviest rains about 20 miles in Litchfield Park area, but widened in mountains of Rim country to about 50 miles. Most damage caused by flash floods which occurred in northwestern section o Salt River Valley, where estimated $40,000 worth of dam age caused when flood waters from Cavecreek poured int gravel pit and buried crushing plant under 30 feet of water. About $5,000 additional damage to roofs by stro winds in residential sections.
COLORADO Norwood (26 miles southeast of), San Miguel County	23	1:30 p.m			1				Wind	Man killed when wind blew tree onto truck in which he was riding. Accident occurred on logging road in Beaver Park area.
ARIZONA Upper Lake Pleasant, Maricopa County	23	3:30 p.m.			0	0			Tornado	Funnel cloud, moving north-northeastward, not seen to touch ground.
KANSAS Western two-thirds	23-24	Noon 23d-evening 24th							Wind and dust	Strong, southerly winds caused by intense low pressure center in eastward passage across Nebraska, resulted in blowing dust. Visibility lowered to 3 miles at Hill City and to 3/8 mile at Goodland during afternoon of 23d. With increase of wind on 24th, dust again reduced visibility to 1/8 to 1/2 mile at Goodland much of day. At Hill City and Hutchinson visibilities of 3/4 mile reported and Garden City, Salina, and Wichita had low visibilities of 1 mile through day. Dodge City's lowest visibility only 3 miles. A number of cooperative observers reported almost zero visibili and called this the worst duststorm in central since the "dirty thirties". Winds of 40 m.p.h., reported from all parts of State and gusts of 55 to 56 m.p.h., occurred at Wichita and Hutchinson.
CALIFORNIA	23-24						4	2	Wind, dust, and frost	Snowfall in Sierras closed State Highway 4 at Ebbetts Pass and Tioga Pass in Yosemite National Park. High, gusty winds on evening of 23d damaged powerlines from Santa Monica to Palos Verdes Hills in southeastern interior areas, and Kern County. A number of house trailers blown off road east of Tehachapi Pass, and nearly 100 miles of Highway 9 between Banning and Westmoreland closed by blowin sand and dust. Santa Ana winds on 24th caused some damage in western Riverside County, blew dow a number of rubber and carob trees in Culver and Studio Village areas. North winds in Fontana-Kaiser area reached fastest mile of 58 m.p.h., on 24th. Unusually early first frost in Los Angeles area on 24th.
	23-24									Minor storm also reported in Paonia area, Colo.
SOUTH DAKOTA Eastern half	24	9 a.m.-5 p.m.							Wind, rain, and dust	Strong southerly winds averaged 30 m.p.h., with gusts 50 to 60 m.p.h. Considerable soil erosion with dust clouds several thousand feet high and visibility 1 to 2 miles.
SOUTH DAKOTA Black Hills and Tripp County	24	Noon-9 p.m				3	3		Glaze, snow, wind, and electrical	Combined freezing rain and wet snow left up to 3 inches of ice on telephone lines at northern end of Hills, between St. Onge and Belle Fourche. Winds followed, downing 25 poles, causing 500 line breaks. West of Custer, car skidded off snow-covered highway into ravine, causing 2 injuries. Another injury from similar accident near Deadwood. 7 inches of new snow in northern Hills At Millboro, lightning jumped from telephone to stove, melting propane gasline. Ignited gas was extinguished.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
OKLAHOMA North-central and western sections	24	Day				3			Wind and dust	Strong winds of over 50 m.p.h., blew sand and lifted dust up to 10,000 feet in air. Visibility reduced to zero in many places which resulted in several automobile accidents. 2 persons injured in 1 accident near Tonkawa, Kay County; 1 car involved, destroyed by resulting fire. Many cars reported to have paint eaten off by drifting sand. Sign blown from business building in Woodward, resulting in injury to 1 person. Barracks-type building blown down in Oklahoma City. Extent of damage to soil and grain seedlings indeterminable. Storm moved northward.
COLORADO Lincoln County	24	5:10 p.m.			0	0			Tornado	Tornado 8 miles south of Forder lasted about 25 minutes.
TEXAS Big Spring, Howard County	24	10:13 p.m.			0	0			Tornado	Pilot reported funnel aloft.
	24									Minor storms also reported near Karval, Colo.; at Beatrice, Nebr.; and at Provo and Salt Lake City, Utah.
IOWA Central area	25	2 p.m.					4	1	Electrical	Destroyed farm buildings and damaged school.
MISSOURI Columbia, Boone County	25	2 p.m.							Wind and rain	Highest wind at WBAS at 2:32 p.m., 25 m.p.h., with gusts to 50 m.p.h. Trailer house upset and small plane damaged.
WASHINGTON Snohomish and King Counties	25	Evening	30	*20					Electrical	Lightning damaged several residences and caused power outages in area between Seattle and Everett, extending from Puget Sound to Cascades. Storm moved westward.
	25									Minor storm also reported at Fulton, Mo.
	26									Minor storm reported at Payette, Idaho.
NORTH CAROLINA East of mountains	27-30				3		4	5	Wind, rain, and tides	Storm similar to that of 16th to 18th, slightly less severe, but more persistent, with wind, rain, and high tides 3 to 5 feet above normal along coast and inland estuaries. 3 persons reported lost from fishing vessels (no confirmation). Some scattered damage to piers, beach highways, and small craft, and further degeneration of crops left in fields due to wet weather. Storm moved northward.
NEBRASKA Comstock to Bloomfield (near), Custer to Knox Counties	29	3:30-5:30 p.m.	100	50	0	0	4	2	Tornado	Several sets of farm buildings damaged or destroyed. Storm moved northeastward.
NEBRASKA Southwestern Lincoln to Rock Counties	29	4-7:30 p.m.	140	440	0	1	5	4	Tornado	Many farm buildings destroyed. Haystacks scattered. Corn stripped from stalks. Storm moved north-northeastward.
NEBRASKA Lincoln County (northeastern portion)	29	Late afternoon					3	2	Hail	Many roofs badly damaged. Stones up to 3 inches in diameter.
KANSAS Thomas and Sheridan Counties	29	4:15-5:15 p.m.	8	50	0	0			Tornadoes, wind, and hail	2 funnel clouds visible at same time and traveling in same direction about 2 miles apart. Major damage done by more northern tornado which was larger and covered longer path. Large funnel began about 6-1/2 miles south of Halford and followed northeastern path through Menlo on Sheridan County line. Damage occurred at a number of farms and in western part of Menlo. Bulging walls indicated explosive characteristics. Farm buildings and windmills blown over and tops of silos removed, and some trees uprooted. Power- and telephone lines broken. Some hail, mostly 1/4 inch in diameter or less, accompanied storm. Distinct rumbling noise accompanied storm.
KANSAS Hoxie area, Sheridan County	29	6 p.m.							Hail	Apparently several strips of hail occurred in connection with this storm, at least 1 was about 11 miles long south of Hoxie and the other 3-1/2 miles long northeast of town. Some hailstones 2 inches in diameter, and much about marble size and driven by high wind. Many small amounts of damage reported.
NEBRASKA Wilsonville to Kearney (near), Furnas to Buffalo Counties	29	6;30-8:30 p.m.	75	Norrow	0	1	5	2	Tornado	Many sets of farm buildings destroyed or damaged. Storm moved northeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Brownell (near), Ness County	29	7 p.m.	2-3	120-220	0	0	3		Tornadoes	Damage done on several farms in Waring Township. 1 tornado occurred about 5 miles northeast of Brownell and the other about 5-1/2 miles east of Brownell. Barns, sheds, windmills, and fences all damaged and scattered for as much as 2 miles in wake of tornadoes. 1 tornado lifted then came to earth, apparently, but the other only came to earth once. Tornadoes moved northeastward.
KANSAS Pawnee County	29	8 p.m.	15	440	0	2	5		Tornadoes and wind	Path of damage indicates 2 or more funnels; lessor one about 2 miles south of one causing major damage. Larger damaged path began about 7 miles south-southeast of Burdett from where it continued almost due north, passing about midway between Burdett and Rozel and terminating in northwestern Grant Township. 7 farm plants damaged, and some poultry and livestock killed. 1 person hospitalized with severe back and leg lacerations when his home was flattened. Another person hospitalized with lacerations on his head when home damaged. In Larned 7 homes damaged, apparently by severe winds.
KANSAS Salina, Saline County	29	8:20 p.m.							Wind	Greatest single damage to Marymount College where new building under construction damaged. 20 large windows broken, flashing around roof loosened and torn off, and contractor's shed smashed. 100 TV antennas in the eastern part of Salina broken or bent. Winds of 50 m.p.h., registered at CAA station, and undoubtedly were higher in damaged area.
KANSAS Brenham (7 miles south of), Kiowa County	29	9 p.m.			0	0			Tornado, wind, and electrical	2 barns, windmill, and top limbs of trees broken and torn apart, roof of hay barn torn off and blown some distance away, and several small outbuildings destroyed.
KANSAS Russell, Lincoln, and Mitchell Counties	29	9-9:25 p.m.	25	100-300	0	2	4		Tornado, wind, and electrical	Tornado moving north-northeastward left path of damage from 4 miles west of Dorrance where it hit at about 9 p.m., to 4 miles southwest of Lucas, about 9:20 p.m.; to 7 miles northeast of Lucas, in Lincoln County, about 9:25 p.m.; and ended in southwestern Mitchell County, with last damage near Hunter. Deafening and quite prolonged roar attended storm's passage. 3 homes and large number of barns and sheds utterly demolished, while others damaged more or less. West of Dorrance large dairy hit and barn unroofed, machine shed of cement blocks and an airplane and hangar destroyed, with damage of $20,000. Most of buildings damaged had been rebuilt after severe windstorm or tornado in 1951. Newly-completed brick home received only minor damages, but inmates said that during passage of storm pressure on their ear drums was terrific. Wreckage of houses, barns, sheds, trees, fences, telephone and powerlines, and farm machinery marked path of tornado as it swept northward. Near its northern end farm home utterly demolished and blown away, and with it a mother and baby blown some 60 feet into field, but with scratches and bruises only. A number of farm animals killed and at some places debris scattered widely over fields.
MINNESOTA Beardsley (4 miles southeast of), Big Stone County, and Minneapolis, Hennepin County	29	9:30 p.m.			0	0	4	1	Tornado (suspected), wind, rain, hail, and electrical	Barn and 2 cabins destroyed; livestock killed. Other farm buildings twisted and machinery flipped over. Some lightning and hail observed. At Minneapolis lightning struck and burned out radio-station transmitter. Storm moved north-northwestward.
KANSAS Stafford and Barton Counties	29	9:33 p.m.	10	Narrow	0	1	5		Tornado, wind, and electrical	Initial storm damage occurred north of Radium, Stafford County, from severe winds. Tornado hit southwestern part of Great Bend, lifted and hit again at northeastern edge of town. Approximately 30 homes and large, concrete-block building damaged badly. Roofs ripped off, windows blown out, power- and telephone lines broken, and trees uprooted. Deer in city park killed by falling building. Automobiles damaged by flying debris. 1 person received severe back and leg lacerations when his home damaged.
NEBRASKA Winside (south and east of), Wayne County	29	10:45-11:15 p.m.	10	Narrow	0	0	3	2	Tornado	Several farm buildings destroyed or badly damaged. Storm moved northeastward.
KANSAS Ellsworth (north of), Ellsworth County	29	Evening			0	0			Tornado, wind, and electrical	Funnel path north of Ellsworth a few miles, and 3 or 4 farm plants damaged. Barn roofs ripped off, windmills twisted, fences torn up, metal grain bins mangled, buildings moved off foundations, and farm machinery damaged. Boards and pieces of tin strewn across fields for a mile from original location. Tornado moved northeastward.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
TEXAS Borger (south of), Hutchinson County	29				0	0	3		Tornado (suspected) and wind	Strong winds, possible twister, blew down oil rig.
	29									Minor storms also reported near Hale, Colo.; near Sioux Center and in western Iowa; and at Humboldt, Nebr.
IDAHO Southern and central portions	29-30								Snow	Snow began falling on 29th and by noon of 30th Hailey measured 10 inches on ground, Ketchum 12 inches, Cascade 16 inches, Galena Summit 25 to 30 inches. 6 to 8 inches also reported on Yellowstone Highway north of Ashton. Some 25 hunters snowbound in "primitive area" where airstrips had such deep snow cover that takeoffs were impossible until runways cleared. Surface traffic also halted in many areas, but snowplows opened mountain passes and flow of traffic resumed within a day or two.
	29-30									Minor storms also reported at Artesian, Bancroft, Brentford, Elk Point, Flandreau, and at Parker, S. Dak.
CALIFORNIA Upper Sacramento Valley and Los Angeles area	29-31						3		Wind and snow	First heavy snow in Sierras. Strong winds in upper Sacramento Valley on 29th and 30th caused considerable damage to powerlines and in orchards, breaking limbs of prune, walnut, and olive trees, and knocking off or damaging many unharvested olives in some orchards. Strong wind at Red Bluff 45 m.p.h., on 29th, and 50 m.p.h., on 30th. In Los Angeles area on 31st many trees blown down and utility lines damaged; Manhattan Beach and southwestern Los Angeles areas hardest hit.
OKLAHOMA Covington to Perry, Garfield and Noble Counties	30	12:45 a.m.						1	Wind and rain	Strong winds damaged homes, roofs, porches, awnings, TV antennas, windows, and utility lines.
TEXAS San Angelo, Tom Green County	30	2 a.m.					5		Electrical	Fire, apparently caused by lightning, destroyed building and contents.
OKLAHOMA Perry (12 miles east of), Noble County	30	2:40 p.m.			0	0		1	Tornado (suspected)	Highway Patrol reported small tornado unroofed barn.
FLORIDA West Palm Beach (3 miles east of), Palm Beach County	30				0	0			Waterspout	
	30									Minor storms also reported in O'Brien County, Iowa; and at Norman, Okla.

* Miles instead of yards.

† Storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

OCTOBER 1956

Flooding during October was minor and sparse. Several record low stages were reached in the Missouri and Arkansas Basins during the month.

ATLANTIC SLOPE DRAINAGE

The flooding on the Cape Fear River at Elizabethtown, N.C., on the 24th was due to steady light rain which fell on 14 of the last 16 days of the month. This rain, though not heavy, thoroughly saturated the ground. The resulting runoff was sufficient to cause flood stage to be exceeded slightly on one day. The rainfall during the month averaged 5.2 inches in each of the river basins in eastern North Carolina, but no overflows were reported in any of the other river basins.

The only other flooding along the Atlantic Slope occurred on the Ocmulgee River at Abbeville, Ga., on the 5th and 6th. No damages resulted from the scattered flooding along this drainage area.

EAST GULF OF MEXICO DRAINAGE

Minor flooding occurred along the Choctawhatchee River from the heavy rains accompanying Hurricane Flossy during the period of September 23 - 25. Rainfall averaged near 8.5 inches with measurements in excess of 10 inches in the headwaters. The stream started to overflow at Newton, Ala., on the 26th of September and receded to within its banks at Caryville, Fla., on the 2d of October.

MISSISSIPPI SYSTEM

Missouri Basin. --A record low stage of 0.47 foot occurred on the Republican River at Concordia, Kans., on the 12-13th. Previously to that date a record low stage of 0.9 foot was reported on the Kansas River at Topeka, Kans., on the 11th. Several other streams were at or near the lowest flow of record.

Ohio Basin. --Streams in the Wabash Basin in Indiana were very low during the month. At Terre Haute, the record low stage of -0.3 foot established in August and September 1941 was approached by 0.3 of a foot.

Arkansas Basin. --The Arkansas River reached a record low stage of 1.78 feet at Tulsa, Okla., on the 13th breaking the record low stage of 1.86 feet established last month. At Van Buren, Ark., the river approached within 0.02 foot of the record low stage of 0.42 foot reached on September 28, 1954. A new record low stage of -0.80 foot was reached on the Arkansas River at Ralston, Okla., on October 13.

At Claremore, Okla., the Verdigris River reached a new record low stage of 2.5 feet on the 30th and 31st.

WEST GULF OF MEXICO DRAINAGE

A flash rise occurred on the Rio Grande at Langtry, Tex., due to heavy rains in the Sanderson, Tex., area on the 18th. Backwater from the Rio Grande produced flooding of the low water bridge across the Pecos on U. S. 90 (temporary bridge used since the main bridge was washed out a few years ago). However, no flooding occurred on the Pecos or the Rio Grande.

A flash rise occurred on the Atascosa (tributary of Nueces in Texas) due to locally heavy rains of 5 to 6 inches on the 16th. Two to 5 inches was reported over the lower Nueces on that date. This was followed by locally heavy rains of up to 6 inches on the Upper Nueces on Turkey Creek (northwest of Crystal City, Tex.) on the 18th and 19th. Some flooding of lowlands occurred but no serious damage resulted. Some flash flooding occurred on small creeks in the Uvalde, Tex., area from heavy local rains (5 to 6 inches) in that area. Water flowed over Mathis Dam from the 17th to the end of the month and caused minor flooding along the Nueces below the dam from the 22d to the 25th.

PACIFIC SLOPE DRAINAGE

Puget Sound. --Moderately steady rains from the 15th to the 20th caused the Skagit and Snohomish Rivers in Washington to exceed flood stage between the 15th and the 21st. All streams were at low levels prior to the beginning of the rainy season. The Snohomish River at Snohomish, Wash., was below 10 feet early on the 14th but rose 15 feet in less than 48 hours. The Snoqualmie River rose to nearly bankful stage at Carnation, Wash., on the 16th and 21st. No damage resulted.

FLOOD STAGE DATA

Table 5

(All dates in October unless otherwise specified)

OCTOBER 1956

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	Ft.			Ft.	
Cape Fear: Elizabethtown, N. C.	20	24	24	#21.3	24
Ocmulgee: Abbeville, Ga.	11	5	6	11.0	5-6
EAST GULF OF MEXICO DRAINAGE					
Choctawhatchee:					
Newton, Ala.	19	26	28	24.3	27
Geneva, Ala.	23	27	29	24.0	28
Caryville, Fla.	12	27	Oct. 2	13 6	29
WEST GULF OF MEXICO DRAINAGE					
Atascosa: Whitsett, Tex.	20	18	19	22.0	19
Nueces:					
Tilden Crossing, Tex.	11	21	21	11.6	21
Calallen, Tex.	7	22	25	7.3	23
PACIFIC SLOPE DRAINAGE	Ft.			Ft.	
PUGET SOUND					
Snohomish: Snohomish, Wash.	24	16	16	25.2	16
Skagit:					
Concrete, Wash.	26	17 18	18 19	27.6 27.8	17 19
Mt. Vernon, Wash.	21	20	21	21.0	20

* Provisional
# Corps of Engs. Bankful Stage

RAWINSONDE DATA

Average monthly values

Table 20

OCTOBER 1956

ALBANY, N. Y. (1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	86	8.0	83	246	2.1
1,000	31	193	10.7	67	215	2.3
950	31	627	10.2	57	265	5.2
900	31	1,070	8.1	55	275	6.0
850	31	1,540	6.6	49	265	5.8
800	31	2,037	5.2	41	278	8.9
750	31	2,566	2.9	38	276	11.7
700	31	3,118	.2	37	276	13.2
650	31	3,713	3.1	37	280	15.2
600	31	4,338	- 6.8	36	274	17.3
550	31	5,014	-11.0	34	280	20.0
500	31	5,737	-15.9		278	22.0
450	31	6,530	-21.6		277	24.7
400	31	7,380	-27.9		278	27.6
350	31	8,324	-35.2		281	30.5
300	31	9,381	-42.8		275	34.0
250	31	10,586	-51.7		271	40.0
200	31	12,007	-58.6		267	42.0
175	31	12,840	-60.7		269	42.3
150	31	13,796	-61.4		268	39.2
125	30	14,922	-62.4		272	36.9
100	30	16,295	-63.1		272	32.2
80	29	17,669	-62.2		273	25.6
60	29	19,452	-60.5		275	15.7
50	25	20,587	-59.8		278	12.6
40	25	21,986	-57.9		275	10.7
30	25	23,804	-56.5		269	11.3
20	12	26,390	-54.0		271	13.4
15						

ALBUQUERQUE, N. MEX. (839 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,619	16.9	30	122	4.1
1,000	30	84				
950	30	540				
900	30	1,008				
850	30	1,504				
800	30	2,023	15.9	28	213	5.2
750	30	2,570	11.6	31	236	7.8
700	30	3,138	7.0	35	244	9.7
650	30	3,745	2.0	41	261	10.5
600	30	4,381	- 3.2	45	273	11.8
550	30	5,063	- 8.7	47	272	15.0
500	30	5,794	-13.9	40	269	16.9
450	30	6,594	-19.4	34	267	20.3
400	30	7,450	-25.6		261	22.0
350	30	8,403	-32.6		259	24.1
300	30	9,469	-41.0		261	28.0
250	29	10,683	-49.4		268	32.4
200	29	12,118	-56.7		270	43.9
175	29	12,957	-59.3		265	42.0
150	29	13,915	-61.8		267	37.9
125	29	15,035	-64.6		270	35.2
100	27	16,382	-66.6		259	29.3
80	26	17,732	-65.1			
60	23	19,501	-61.7			
50	23	20,634	-59.7			
40	22	22,038	-57.2			
30	18	23,872	-54.9			
20						
15						

*AMARILLO, TEX. (892 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	22	1,099	15.7	50	181	6.2
1,000	22	105				
950	22	551				
900	22	1,014				
850	22	1,506	15.7	43	190	15.9
800	22	2,018	12.9	42	213	15.5
750	22	2,560	9.4	42	226	14.4
700	22	3,125	5.7	35	235	13.0
650	22	3,728	1.4		247	12.4
600	22	4,366	- [illegible].1		254	14.2
550	22	5,047	- 7.8		255	14.8
500	22	5,782	-12.9		257	15.3
450	21	6,583	18.9		255	19.6
400	21	7,443	-25.7		250	24.1
350	21	8,396	-33.0		255	27.4
300	20	9,461	-41.1		255	35.4
250	20	10,676	-49.7		260	36.7
200	20	12,111	-56.7		261	38.5
175	18	12,955	-59.1		274	37.7
150	17	13,914	-61.8		267	36.9
125	17	15,037	-63.7		264	32.4
100	17	16,402	-65.1		269	24.7
80	16	17,761	-65.2		270	15.2
60	16	19,529	-61.7		266	7.0
50	15	20,663	-59.4		285	4.5
40	15	22,063	-57.8		281	3.5
30	14	23,891	-55.0		252	6.8
20	8	26,520	-51.9			
15	5	28,393	-51.7			

ANCHORAGE, ALASKA (99[illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	30	1.1	57	20	1.6
1,000	31	-4				
950	31	408	- 1.0	64	11	4.9
900	31	838	- 2.9	65	21	4.5
850	31	1,288	5.5	69	28	2.5
800	31	1,761	- 8.2	69	56	1.0
750	31	2,265	-10.9	64	225	1.6
700	31	2,787	-14.1	57	251	1.9
650	31	3,349	-17.6	51	253	2.5
600	31	3,939	-21.6	50	275	1.7
550	30	4,577	-26.1	50	27	1.6
500	30	5,258	-30.7	49	53	1.4
450	30	6,006	-36.1		303	1.2
400	30	6,805	-41.8		262	4.9
350	30	7,698	-47.3		269	8.5
300	30	8,704	-51.8		270	9.7
250	29	9,886	-52.0		278	15.0
200	28	11,340	-51.0		272	19.0
175	27	12,211	-50.2		267	20.4
150	27	13,216	-50.3		273	21.0
125	24	14,388	-50.1		277	20.8
100	23	15,838	-50.1		281	20.4
80	22	17,290	-51.5		277	24.3
60	16	19,137	-53.5			
50	13	20,323	-54.7			
40	9	21,693	-55.5			
30	5	23,551	-55.6			
20						
15						

ANNETTE, ALASKA (1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	37	6.5	84	150	6.2
1,000	31	53			163	6.4
950	31	473	4.1	80	178	11.1
900	31	911	1.3	81	188	12.8
850	31	1,369	- 1.4	80	195	15.3
800	31	1,849	- 4.5	80	208	14.8
750	31	2,358	- 7.4	75	222	13.8
700	31	2,869	-10.8	69	243	13.6
650	31	3,461	-14.7	63	237	16.9
600	31	4,055	-18.7	60	241	16.3
550	31	4,700	-22.9	55	247	17.3
500	31	5,390	-27.8	50	234	19.4
450	31	6,139	-33.1	46	237	19.0
400	31	6,957	-38.7		247	21.6
350	31	7,862	-44.4		248	22.7
300	31	8,883	-48.7			
250	30	10,067	-50.5			
200	28	11,503	-51.9			
175	28	12,367	-52.1			
150	28	13,364	-51.9			
125	26	14,536	-51.9			
100	24	15,977	-52.2			
80	23	17,423	-52.8			
60	22	19,278	-53.6			
50	17	20,436	-54.1			
40	15	21,874	-54.2			
30	9	23,712	-53.8			
20						
15						

ATHENS, GA. (991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	246	16.6	84	64	5.4
1,000	31	169				
950	31	612	16.4	69	76	11.7
900	31	1,066	13.8	70	87	9.9
850	31	1,546	11.3	66	84	8.9
800	31	2,051	9.4	59	90	7.4
750	31	2,593	7.0	54	78	4.3
700	31	3,149	4.5	44	80	2.3
650	31	3,757	1.2	37	317	2.7
600	31	4,389	- 2.6	35	305	3.5
550	31	5,077	- 6.9		303	4.9
500	31	5,810	-11.7		289	8.5
450	30	6,617	-17.4		281	10.5
400	30	7,479	-23.9		279	12.0
350	30	8,438	-31.6		273	14.8
300	30	9,510	-39.9		269	20.8
250	30	10,730	-48.8		262	26.0
200	30	12,169	-56.7		267	31.9
175	30	13,009	-59.6		268	31.5
150	29	13,961	-62.4		265	32.1
125	27	15,071	-65.0		266	25.1
100	27	16,421	-67.4		271	19.0
80	26	17,765	-66.8		273	9.1
60	24	19,521	-62.4		318	2.1
50	22	20,651	-60.2		320	.4
40	19	22,040	-58.0		57	2.7
30	15	23,869	-55.1		120	.2
20	5	26,443	-51.6			

BARROW, ALASKA (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	8	-11.1	79	97	6.6
1,000	31	75			92	7.4
950	31	478	-11.2	81	99	8.7
900	31	884	-11.5	71	90	8.4
850	31	1,322	-12.0	59	90	8.0
800	31	1,784	-13.3	51	96	6.6
750	31	2,279	-15.5	47	96	5.2
700	31	2,791	-18.0	47	93	3.7
650	31	3,349	-21.1	42	117	1.7
600	31	3,929	-24.5	42	140	2.3
550	31	4,564	-28.6	43	133	1.2
500	31	5,234	-33.3	43	201	2.5
450	31	5,975	-38.7		234	1.9
400	31	6,765	-44.3		238	3.7
350	31	7,649	-50.1		253	4.5
300	29	8,650	-55.4		318	4.9
250	29	9,803	-57.8		273	8.9
200	27	11,222	-54.0		258	13.6
175	26	12,077	-52.7		258	16.3
150	26	13,072	-52.5		266	13.6
125	25	14,244	-52.5		263	18.5
100	23	15,666	-53.3		271	21.4
80	22	17,104	-53.8		267	26.2
60	21	18,942	-55.2		262	29.5
50	19	20,088	-56.4		259	35.0
40	14	21,481	-57.0		255	37.3
30	7	23,284	-57.1			
20						

BETHEL, ALASKA (1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	- 0.9	83	321	2.3
1,000	31	33			331	3.1
950	31	449	- 3.3	78	315	5.4
900	31	867	- 5.4	75	320	7.8
850	31	1,314	- 7.2	69	310	8.7
800	31	1,784	- 9.5	63	310	10.9
750	31	2,285	-11.8	53	308	10.9
700	31	2,806	-14.9	49	301	12.2
650	31	3,368	-18.4	48	303	13.6
600	31	3,955	-22.1	47	299	15.2
550	31	4,592	-25.9	46	302	15.5
500	31	5,273	-30.4	45	294	18.6
450	31	6,020	-35.4		306	17.9
400	31	6,825	-40.7		297	21.4
350	31	7,723	-46.0		285	20.2
300	30	8,733	-50.0		280	21.0
250	30	9,922	-50.1		275	16.9
200	27	11,365	-48.9		271	22.3
175	25	12,238	-48.0		277	22.5
150	25	13,253	-48.3		276	22.3
125	21	14,445	-48.3		285	21.0
100	18	15,893	-47.7		285	20.8
80	14	17,367	-47.4		285	21.6
60	7	19,233	-48.5			
50	5	20,442	-49.8			
40						
30						
20						

BISMARCK, N. DAK. (954 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	505	8.7	57	122	1.2
1,000	31	106				
950	31	544			304	.2
900	31	990	11.4	43	233	4.7
850	31	1,464	8.8	44	257	8.7
800	31	1,964	6.4	45	268	12.2
750	31	2,497	3.8	44	266	16.9
700	31	3,047	.9	39	266	21.0
650	31	3,645	- 2.9	39	262	22.9
600	31	4,269	- 6.9	39	257	27.0
550	31	4,945	-11.6	38	253	28.9
500	31	5,665	-16.5	36	264	30.3
450	31	6,458	-22.3	36	254	34.4
400	31	7,303	-28.6	36	249	35.9
350	31	8,244	-36.1		240	35.2
300	31	9,295	-44.3		243	31.7
250	30	10,499	-52.2			
200	30	11,920	-58.7			
175	30	12,756	-59.5			
150	30	13,719	-59.9			
125	30	14,855	-60.6			
100	29	16,244	-60.5			
80	29	17,636	-59.2			
60	28	19,439	-58.8			
50	27	20,587	-58.1			
40	25	21,986	-57.6			
30	21	23,808	-56.6			
20	11	26,414	-53.9			

BOISE, IDAHO (916 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	868	10.7	62	156	2.1
1,000	31	123				
950	31	561				
900	31	1,012	12.7	49	96	1.7
850	31	1,490	10.0	48	273	.6
800	31	1,991	6.3	52	257	5.6
750	31	2,526	2.6	53	257	9.7
700	31	3,071	- 1.1	56	255	12.4
650	31	3,664	- 4.9	52	253	13.0
600	31	4,284	- 8.8	50	252	15.5
550	31	4,957	-13.1	44	248	18.3
500	31	5,672	-17.9	40	244	18.8
450	31	6,460	-23.5	37	250	16.7
400	31	7,303	-29.4	38	258	15.9
350	31	8,243	-36.3		256	12.0
300	31	9,296	-43.2		336	8.7
250	31	10,502	-50.8		344	10.9
200	31	11,936	-56.3		305	15.3
175	30	12,789	-57.6		290	9.9
150	30	13,757	-59.5		262	11.5
125	29	14,891	-60.2		268	16.5
100	29	16,279	-60.6		266	17.3
80	25	17,674	-60.4			
60	22	19,470	-59.1			
50	18	20,618	-58.2			
40	17	22,025	-57.3			
30	12	23,865	-55.8			
20	5	26,484	-53.7			

BROWNSVILLE, TEX. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	23.7	82	110	7.0
1,000	31	135	25.1	73	111	8.2
950	31	587	22.2	72	117	10.5
900	31	1,054	19.6	64	122	6.2
850	31	1,544	17.0	53	108	2.5
800	31	2,058	14.3	45	32	2.1
750	31	2,605	11.2	40	5	4.7
700	31	3,173	7.8	36	345	6.2
650	31	3,782	4.2	33	337	7.6
600	31	4,426	.0		324	8.9
550	31	5,116	- 4.1		308	10.7
500	31	5,863	- 8.7		293	11.1
450	31	6,676	-14.3		294	14.2
400	31	7,553	-20.8		291	19.6
350	31	8,526	-27.8		284	26.6
300	31	9,614	-36.0		279	33.8
250	31	10,855	-45.3		279	38.3
200	31	12,310	-55.5		280	36.5
175	31	13,150	-61.0		272	37.3
150	31	14,094	-66.6		267	30.3
125	31	15,184	-71.3		262	19.6
100	31	16,489	-74.1		258	8.9
80	29	17,796	-71.8		256	2.5
60	26	19,521	-64.1			
50	25	20,643	-61.2			
40	23	22,034	-57.9			
30	22	23,864	-54.2			
20	9	26,485	-51.1			
15						

BUFFALO, N. Y. (1001 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	182	9.9	81	178	1.2
1,000	31	183			122	3.7
950	31	614	11.9	59	213	5.8
900	31	1,064	9.8	58	239	8.5
850	31	1,537	7.8	54	252	9.3
800	31	2,035	6.0	44	257	10.5
750	31	2,568	3.7	38	263	10.7
700	31	3,118	.6	38	271	12.2
650	31	3,713	- 2.5	37	273	15.5
600	31	4,340	- 6.2	36	276	17.1
550	31	5,016	-10.5	35	273	19.6
500	31	5,742	-15.2	33	276	23.1
450	31	6,534	-21.0	34	274	27.0
400	31	7,389	-27.3		277	28.0
350	31	8,335	-34.8		281	28.0
300	30	9,399	-42.8		280	31.3
250	30	10,605	-51.4		279	34.2
200	30	12,028	-58.6		278	36.5
175	30	12,863	-60.4		273	34.8
150	29	13,817	-61.2		273	37.3
125	28	14,949	-62.0		272	33.8
100	27	16,324	-62.5		274	28.4
80	26	17,704	-61.9		275	24.3
60	22	19,491	-59.9		270	14.6
50	22	20,631	-59.0		278	11.5
40	21	22,036	-57.7		281	11.1
30	20	23,859	-55.8		279	12.4
20	16	26,455	-53.2		280	15.0
15	11	28,293	-52.2			

BURRWOOD, LA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	22.9	85	89	4.7
1,000	31	150	22.2	78	75	5.8
950	31	596	19.3	70	74	8.5
900	31	1,058	16.0	67	74	10.5
850	31	1,541	13.3	60	70	7.6
800	31	2,050	11.2	50	84	7.4
750	31	2,593	8.5	47	81	6.6
700	30	3,154	5.6	41	67	4.5
650	29	3,762	2.5		38	2.9
600	29	4,398	- .8		4	5.6
550	28	5,088	- 5.2		355	7.0
500	27	5,830	-10.4		4	6.6
450	25	6,640	-16.0		349	7.4
400	24	7,510	-22.9		329	8.0
350	22	8,477	-30.3		319	10.7
300	20	9,561	-38.6		285	18.3
250	16	10,791	-48.0		279	27.2
200	15	12,236	-56.7		273	35.2
175	14	13,077	-60.1		286	34.6
150	14	14,030	-64.0			
125	13	15,141	-67.4			
100	13	16,476	-69.7			
80	13	17,807	-68.1			
60	13	19,556	-62.6			
50	13	20,689	-59.4			
40	11	22,097	-55.9			
30	9	23,923	-53.7			
20	7	26,556	-49.8			
15						

CARIBOU, ME. (998 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	191	6.5	79	238	4.3
1,000	30	170			235	5.2
950	30	598	7.2	68	270	13.2
900	30	1,037	5.5	62	284	14.2
850	30	1,503	4.0	54	292	16.1
800	30	1,994	1.8	49	291	16.9
750	30	2,520	- .5	49	286	17.7
700	30	3,060	3.3	46	285	17.7
650	30	3,647	6.3	47	287	23.1
600	30	4,265	- 9.9	43	284	25.3
550	30	4,930	-13.9	39	281	27.2
500	29	5,649	-18.7	38	281	31.5
450	29	6,435	-24.8	38	278	32.2
400	28	7,274	-31.3	40	277	36.3
350	27	8,201	-38.0		276	38.3
300	27	9,245	-45.2		274	42.5
250	27	10,440	-52.4		277	46.6
200	26	11,863	-57.7		275	47.6
175	25	12,700	-59.2		279	45.1
150	24	13,666	-59.2		278	40.0
125	24	14,805	-60.4		272	37.7
100	23	16,198	-59.6		277	35.9
80	23	17,593	-59.5		279	26.2
60	21	19,395	-58.9		273	20.8
50	20	20,538	-58.3		276	13.8
40	19	21,945	-57.3		273	13.0
30	16	23,769	-55.6		272	13.4
20	11	26,394	-51.8			
15						

CHARLESTON, S. C. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	13	17.5	93	12	4.3
1,000	31	158	19.2	82	39	7.0
950	31	605	17.4	77	63	12.2
900	31	1,060	15.1	77	74	10.9
850	31	1,543	12.8	73	75	6.0
800	31	2,051	10.8	62	81	3.7
750	31	2,596	8.3	55	77	3.5
700	31	3,155	5.6	47	336	.8
650	31	3,768	2.3	42	281	4.1
600	31	4,400	- 1.6	41	280	3.9
550	31	5,094	- 5.8	38	264	8.0
500	31	5,829	-10.8	36	266	11.3
450	31	6,644	-16.4		252	15.3
400	31	7,506	-22.8		254	19.0
350	31	8,471	-30.1		250	23.1
300	31	9,550	-38.2		243	27.2
250	30	10,778	-47.6		254	35.0
200	30	12,221	-56.5		258	42.0
175	30	13,063	-59.1		261	36.5
150	29	14,020	-62.5		261	32.2
125	29	15,134	-66.0		269	25.3
100	29	16,480	-67.8		276	17.1
80	28	17,824	-66.6		290	8.0
60	25	19,580	-62.3		322	3.1
50	24	20,711	-59.7		101	4.7
40	23	22,116	-57.6		49	5.2
30	22	23,944	-54.0		66	2.7
20	17	26,563	-50.8		269	1.9
15	6	28,421	-50.0			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

* Observations began October 9, 1956.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

COLD BAY, ALASKA (1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	29	5.1	80	297	9.3
1,000	30	68			304	13.8
950	30	489	2.1	80	297	18.5
900	30	920	.6	81	291	19.4
850	30	1,374	3.4	80	294	18.8
800	30	1,852	-5.8	72	292	20.4
750	30	2,362	-8.1	64	273	21.6
700	30	2,888	-11.0	58	280	24.9
650	30	3,458	-14.1	55	275	24.5
600	30	4,056	-17.8	51	266	23.5
550	30	4,707	-21.5	51	270	29.5
500	30	5,398	-25.8	45		
450	30	6,160	-30.7	42		
400	30	6,981	-36.0			
350	30	7,895	-42.1			
300	29	8,912	-47.9			
250	26	10,086	-50.5			
200	26	11,537	-50.7			
175	26	12,406	-50.6			
150	23	13,421	-51.6			
125	23	14,603	-51.6			
100	19	16,036	-51.7			
80	17	17,498	-51.7			
60	15	19,352	-50.7			
50	15	20,536	-51.4			
40	11	22,008	-50.3			
30	8	23,873	-50.3			
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COLUMBIA, MO. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	338	16.9	51	137	4.5
1,000	31	152				
950	31	593	18.1	44	155	9.7
900	31	1,053	15.1	47	189	9.5
850	31	1,535	12.9	44	209	9.3
800	31	2,042	10.5	38	222	8.4
750	31	2,580	7.6	34	235	8.7
700	31	3,141	4.1	36	241	7.4
650	31	3,743	.2	34	255	7.6
600	31	4,377	3.8	34	257	8.4
550	31	5,055	-8.4	32	272	8.0
500	31	5,790	-13.6	30	261	9.9
450	31	6,587	-19.5	35	258	13.6
400	31	7,446	-25.9	41	254	15.3
350	31	8,398	-33.2		254	17.7
300	31	9,461	-41.6		253	20.2
250	31	10,670	-51.1		260	26.4
200	31	12,095	-58.1		271	29.5
175	31	12,930	-60.2		270	28.7
150	31	13,884	-61.9		271	27.8
125	31	15,008	-63.8		270	27.0
100	31	16,370	-64.9		274	23.5
80	30	17,733	-64.3		271	15.3
60	29	19,505	-61.2		281	10.9
50	28	20,641	-59.4		276	7.0
40	26	22,042	-57.7		272	7.4
30	20	23,874	-55.3		291	9.5
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DAYTON, OHIO (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	297	14.2	67	70	2.3
1,000	31	175				
950	31	613	15.3	57	118	4.1
900	31	1,066	12.6	58	176	4.1
850	31	1,543	10.2	54	223	4.3
800	31	2,045	7.9	46	260	5.1
750	30	2,582	5.8	38	281	7.4
700	30	3,136	2.9	36	276	7.8
650	30	3,739	-.8	37	282	8.7
600	30	4,365	4.6	35	281	9.9
550	30	5,049	9.1		285	10.9
500	30	5,775	-13.9		282	12.4
450	29	6,571	-19.6		282	1 6
400	29	7,427	-25.8	35	283	17.3
350	29	8,379	-33.0		278	21.6
300	29	9,444	-41.1		280	24.9
250	29	10,656	-50.6		276	27.2
200	29	12,082	-58.3		263	33.2
175	29	12,916	-60.6		268	32.1
150	28	13,872	-61.7		268	28.9
125	27	14,994	-63.1		267	29.5
100	25	16,360	-64.3		271	23.9
80	24	17,726	-63.5		262	17.5
60	24	19,501	-60.9		277	11.3
50	22	20,642	-59.0		273	8.4
40	19	22,049	-57.4		272	7.4
30	14	23,880	-54.1		280	8.9
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DENVER, COLO. (838 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	27	1,608	11.4	40	172	4.5
1,000	27	88				
950	27	533				
900	27	998				
850	27	1,485				
800	27	1,996	13.3	30	198	4.1
750	27	2,537	9.3	32	238	5.6
700	27	3,102	5.0	36	265	8.2
650	27	3,699	.2	41	266	11.3
600	27	4,337	-4.8	45	263	13.8
550	26	5,012	-10.2	45	270	17.7
500	26	5,742	-15.5	41	264	20.4
450	26	6,535	-21.3		269	21.4
400	26	7,385	-27.9	39	264	21.0
350	25	8,327	-35.3		262	20.8
300	25	9,383	-42.8		257	25.1
250	23	10,588	-50.5		258	34.4
200	23	12,013	-58.3		260	38.5
175	23	12,847	-60.4		259	38.5
150	23	13,803	-61.8		262	35.7
125	23	14,925	-63.2		256	32.1
100	22	16,288	-65.1		258	28.0
80	21	17,646	-63.5		258	19.0
60	19	19,421	-61.0		265	10.5
50	19	20,555	-59.5		271	10.3
40	17	21,962	-58.0		273	8.4
30	17	23,780	-56.4		260	9.1
20	14	26,361	-54.2		263	11.5
15	6	28,259	53.9			

DODGE CITY, KANS. (925 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	792	16.4	46	147	6.4
1,000	31	115				
950	31	564				
900	31	1,024	18.1	40	155	10.1
850	31	1,511	15.7	38	191	11.8
800	31	2,024	13.3	36	219	12.6
750	31	2,565	10.0	33	241	12.2
700	31	3,132	5.9	32	258	11.5
650	31	3,736	1.4	34	275	11.8
600	31	4,373	-3.2	34	279	10.5
550	31	5,055	-7.9	31	294	12.0
500	31	5,790	-13.1		287	12.8
450	31	6,589	-19.0		281	14.6
400	31	7,449	-25.7		278	15.0
350	31	8,400	-33.3		278	16.3
300	31	9,465	-41.3		272	16.3
250	31	10,677	-50.0		270	21.8
200	31	12,109	-57.4		269	24.3
175	31	12,947	-59.7		274	24.5
150	31	13,904	-61.9		268	27.0
125	31	15,026	-63.6		271	27.2
100	31	16,387	-65.3		270	24.7
80	30	17,745	-64.2		275	16.7
60	28	19,522	-61.1		266	12.4
50	26	20,658	-59.2		296	5.8
40	26	22,060	-57.4		272	3.3
30	14	23,906	-54.2		261	5.8
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EL PASO, TEX. (882 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,195	20.9	26	96	0.2
1,000	31	90				
950	31	552				
900	31	1,022				
850	31	1,518	21.1	24	69	1.0
800	31	2,038	17.3	27	217	5.2
750	31	2,588	13.0	31	231	7.2
700	31	3,160	8.2	36	246	8.7
650	31	3,772	3.2	41	244	10.5
600	31	4,410	-1.3	39	244	11.1
550	31	5,098	-6.1		256	14.2
500	31	5,837	-11.2		264	17.5
450	31	6,643	-17.2		263	19.8
400	31	7,510	-23.6		267	24.9
350	31	8,471	-31.0		274	29.5
300	31	9,545	-39.0		268	34.8
250	31	10,770	-47.8		266	34.0
200	31	12,213	-56.3		274	33.8
175	29	13,049	-59.8			
150	26	13,997	-63.4			
125	23	15,097	-66.6			
100	22	16,434	-68.6			
80	20	17,772	-67.7			
60	20	19,524	-62.6			
50	18	20,663	-59.3			
40	17	22,070	-57.0			
30	14	23,903	-54.2			
20	6	26,530	-52.2			
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ELY, NEV. (809 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,908	7.5	47	203	4.9
1,000	31	115				
950	31	561				
900	31	1,018				
850	31	1,496				
800	31	2,002	10.9	42	195	5.2
750	31	2,546	7.6	41	206	4.7
700	31	3,100	3.0	46	229	7.2
650	31	3,702	-1.6	53	242	9.7
600	31	4,328	-6.2	55	243	12.4
550	31	5,007	-10.4	51	244	16.1
500	31	5,730	-15.2	43	249	19.6
450	31	6,529	-20.9	39	242	22.3
400	31	7,377	-27.1	36	233	24.1
350	31	8,325	-34.1	36	231	17.7
300	31	9,386	-41.9		246	12.6
250	30	10,601	-49.5		287	4.3
200	30	12,040	-56.0		270	13.8
175	29	12,889	-57.6		287	13.8
150	27	13,859	-59.6			
125	28	14,991	-61.2			
100	28	16,373	-61.5			
80	28	17,756	-61.5			
60	24	19,542	-58.9			
50	21	20,693	-57.4			
40	19	22,110	-56.6			
30	16	23,945	-54.1			
20						
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FAIRBANKS, ALASKA (989 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	135	-5.5	78	9	2.5
1,000	31	45				
950	31	448	-6.7	65	28	2.7
900	31	867	-8.6	70	87	1.9
850	31	1,309	-9.8	73	153	2.1
800	31	1,776	-10.7	65	204	1.6
750	31	2,276	-12.7	60	231	3.5
700	31	2,794	-15.4	56	243	3.9
650	31	3,357	-18.5	51	264	4.7
600	31	3,942	-22.3	48	247	5.1
550	31	4,583	-26.4	47	216	6.6
500	31	5,258	-31.2	46	213	4.3
450	31	6,003	-36.5	45	217	6.0
400	31	6,802	-42.3		190	7.6
350	31	7,692	-48.5		198	9.5
300	31	8,692	-54.3		226	11.1
250	31	9,854	-54.8		231	11.3
200	30	11,293	-51.3		255	15.3
175	29	12,169	-50.6		250	15.0
150	29	13,173	-50.5		273	16.5
125	28	14,362	-50.6		270	17.3
100	26	15,812	-50.7		273	21.6
80	21	17,254	-50.7		274	23.5
60	16	19,089	-52.3		280	26.8
50	12	20,260	-53.4			
40	5	21,658	-57.0			
30						
20						
15						

FLINT, MICH. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	27	234	10.4	72	150	3.5
1,000	27	179				
950	27	613	12.7	60	168	10.3
900	27	1,062	10.9	56	203	10.9
850	27	1,537	9.3	46	235	12.0
800	27	2,037	7.0	45	250	11.8
750	27	2,571	4.3	43	257	13.2
700	27	3,123	1.2	40	264	13.6
650	27	3,721	-2.2	38	269	13.6
600	27	4,348	-6.0	39	264	15.3
550	27	5,024	-10.5	38	272	17.1
500	27	5,750	-15.6		274	19.2
450	27	6,543	-21.2		276	22.7
400	27	7,395	-27.6		274	24.5
350	27	8,341	-34.9		272	27.0
300	27	9,398	-42.6		271	30.9
250	27	10,603	-51.6		274	35.5
200	26	12,033	-58.9		269	34.0
175	26	12,866	-60.4		270	33.6
150	25	13,821	-60.2		266	34.4
125	24	14,950	-61.4		269	30.7
100	21	16,330	-61.9		268	27.6
80	18	17,711	-60.9		266	23.7
60	14	19,498	-59.9		273	15.3
50	12	20,645	-58.7		268	12.6
40	9	22,054	-57.2			
30	6	23,904	-53.9			
20	5	26,507	-51.0			
15						

FORT WORTH, TEX. (996 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	178	22.0	60	139	2.9
1,000	31	138				
950	31	587	22.2	46	136	9.7
900	31	1,052	18.7	50	150	8.2
850	31	1,539	15.1	56	174	5.8
800	31	2,050	12.0	54	202	4.7
750	31	2,595	9.2	47	225	4.5
700	31	3,156	5.6	43	266	3.5
650	31	3,763	1.7	40	295	5.8
600	31	4,398	-2.2	35	298	10.5
550	31	5,087	-6.5		292	11.3
500	31	5,821	-11.6		287	13.6
450	31	6,630	-17.8		281	16.7
400	31	7,488	-24.6		279	18.5
350	31	8,444	-32.0		280	23.9
300	30	9,513	-40.3		281	27.8
250	30	10,731	-49.0		278	32.6
200	30	12,167	-56.6		276	38.1
175	30	13,007	-59.6		275	42.3
150	28	13,967	-62.7		277	35.7
125	28	15,081	-65.8		273	30.7
100	27	16,426	-68.2		269	21.2
80	24	17,771	-66.7		276	8.9
60	24	19,525	-62.7		344	1.7
50	23	20,656	-60.1		77	3.7
40	22	22,054	-57.6		98	2.7
30	21	23,882	-54.2		52	2.3
20	17	26,497	-51.3		302	2.9
15	11	28,360	-49.6			

GLASGOW, MONT. (931 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	695	9.0	43	111	1.9
1,000	31	96				
950	31	529				
900	31	981	11.5	39	245	3.1
850	31	1,456	8.2	42	259	8.7
800	31	1,953	4.7	47	271	13.6
750	31	2,482	1.5	50	269	19.2
700	31	3,029	-1.8	47	268	22.9
650	31	3,617	-5.5	46	264	25.4
600	31	4,237	-9.5	48	261	27.4
550	31	4,907	-13.7	44	260	29.3
500	31	5,622	-18.6	42	255	30.9
450	31	6,406	-23.8	41	262	31.5
400	31	7,249	-29.9	41	258	35.5
350	31	8,184	-37.2		260	36.5
300	31	9,230	-44.9		244	33.8
250	31	10,427	-52.0		260	32.1
200	30	11,861	-57.3		238	24.3
175	29	12,692	-58.0			
150	29	13,660	-59.0			
125	26	14,797	-58.5			
100	24	16,198	-58.7			
80	22	17,598	-58.3			
60	21	19,404	57.6			
50	20	20,555	-57.9			
40	15	21,958	-57.3			
30	8	23,798	-55.8			
20						

GRAND JUNCTION, COLO. (852 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,474	14.7	29	89	0.2
1,000	31	90				
950	31	535				
900	31	1,005				
850	31	1,491			336	1.9
800	31	2,006	14.4	27	227	4.5
750	31	2,553	10.2	31	221	8.2
700	31	3,115	5.5	34	226	11.8
650	31	3,718	.5	39	229	13.8
600	31	4,351	-4.8	46	233	16.1
550	31	5,032	-9.6	44	236	17.7
500	30	5,757	-15.0	41	246	16.9
450	30	6,555	-21.1	37	253	18.8
400	30	7,404	-27.4	35	259	19.4
350	29	8,349	-34.7		273	21.2
300	29	9,407	-42.7		270	21.0
250	29	10,613	-50.9		265	20.8
200	29	12,041	-57.0		264	24.5
175	29	12,882	-59.2		264	27.8
150	29	13,844	-60.4		264	29.3
125	29	14,973	-62.5			
100	28	16,343	-64.0			
80	28	17,712	-62.8			
60	28	19,495	-60.1			
50	28	20,634	-58.9			
40	28	22,039	-56.9			
30	24	23,871	-55.4			
20						

GREAT FALLS, MONT. (885 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,123	8.9	48	253	8.4
1,000	31	94				
950	31	529				
900	31	980				
850	31	1,458	8.4	44	243	15.9
800	31	1,955	5.1	47	250	18.1
750	31	2,484	1.5	51	257	22.0
700	31	3,031	-1.9	52	264	22.1
650	31	3,621	-5.3	49	266	23.9
600	31	4,240	-9.2	50	266	26.2
550	31	4,911	-13.7	52	262	28.0
500	30	5,623	-18.8	51	262	28.6
450	30	6,406	-24.3	49	262	33.2
400	30	7,247	-30.5	46	262	36.3
350	30	8,182	-37.5		261	40.0
300	30	9,229	-44.6		260	43.9
250	30	10,429	-51.7		255	42.2
200	30	11,861	-55.8		258	40.8
175	29	12,697	-57.0		258	39.8
150	29	13,670	-58.2		259	36.7
125	29	14,817	-58.6		258	37.5
100	28	16,215	-58.3		254	31.3
80	28	17,621	-58.0		256	22.9
60	28	19,435	-57.7		260	18.3
50	25	20,583	-57.1		258	18.1
40	21	22,001	-57.1		257	12.6
30	16	23,850	-55.2		277	12.6
20	9	26,427	-54.0			

GREEN BAY, WIS. (993 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	210	11.0	79	195	2.7
1,000	31	153				
950	31	587	12.9	56	205	9.9
900	31	1,037	10.6	54	224	14.2
850	31	1,511	8.6	49	242	14.8
800	31	2,010	5.9	48	260	14.8
750	31	2,545	3.3	46	265	15.9
700	31	3,092	.0	47	265	16.5
650	31	3,685	-3.2	42	268	19.0
600	31	4,312	-6.7	40	274	23.3
550	31	4,985	-11.0	36	276	25.4
500	31	5,710	-16.2	34	275	23.5
450	31	6,500	-22.0	37	281	25.3
400	30	7,346	-28.6	36	275	28.6
350	30	8,287	-36.0		270	29.7
300	30	9,339	-43.8		272	29.9
250	30	10,540	-52.0		266	33.4
200	30	11,960	-59.1		272	33.8
175	30	12,793	-60.7		274	33.2
150	30	13,750	-61.0		267	32.8
125	29	14,880	-61.2		266	37.1
100	29	16,262	-61.6		268	26.4
80	29	17,646	-60.6		266	25.1
60	29	19,443	-59.1		268	15.3
50	29	20,587	-58.5		269	15.5
40	26	21,988	-57.7		271	15.2
30	19	23,822	-55.4		278	12.4
20						

GREENSBORO, N. C. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	273	14.7	85	42	6.0
1,000	31	186				
950	31	624	15.3	72	53	10.9
900	31	1,079	13.0	71	75	8.9
850	31	1,558	11.0	67	99	6.6
800	31	2,062	8.7	64	90	4.5
750	31	2,603	6.4	59	48	2.3
700	31	3,159	3.9	54	16	1.2
650	31	3,766	.5	51	312	1.0
600	31	4,397	-3.0	42	314	2.5
550	31	5,086	-7.1	39	296	5.2
500	31	5,818	-12.0	33	282	6.6
450	31	6,626	-17.8	35	275	9.1
400	31	7,486	-24.2	35	269	12.0
350	31	8,444	-31.5		270	16.3
300	31	9,516	-39.7		261	20.4
250	31	10,738	-48.6		260	25.6
200	31	12,177	-56.8		258	29.5
175	31	13,017	-59.4		259	28.7
150	31	13,976	-61.7		253	28.2
125	30	15,101	-64.3		264	25.6
100	29	16,460	-66.1		273	18.1
80	29	17,815	-65.2		272	11.8
60	29	19,582	-61.4		277	4.9
50	29	20,717	-59.6		285	5.4
40	28	22,121	-57.5		292	1.7
30	26	23,949	-54.6		210	1.0
20	12	26,611	-49.9			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

HATTERAS, N. C.
(1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	3	19.0	87	56	9.5
1,000	31	162	18.6	82	59	11.5
950	31	605	16.7	78	76	9.7
900	31	1,061	14.4	73	87	7.6
850	31	1,543	12.4	60	92	6.0
800	31	2,049	10.1	56	73	3.9
750	31	2,590	7.3	53	105	1.0
700	31	3,149	4.5	52	219	1.6
650	31	3,754	1.1	52	250	4.3
600	31	4,389	-2.5	47	255	7.0
550	31	5,073	-6.7	42	255	10.1
500	31	5,811	-11.5	43	258	12.6
450	31	6,614	-16.7	42	259	12.6
400	31	7,485	-22.9	40	252	17.3
350	31	8,449	-30.1		249	21.4
300	30	9,528	-38.2		245	29.7
250	29	10,752	-47.5		246	36.1
200	28	12,198	-56.1		249	43.3
175	26	13,039	-59.2		256	44.3
150	25	13,999	-62.2		258	38.1
125	25	15,117	-64.6		263	29.1
100	24	16,474	-66.9		269	21.0
80	23	17,825	-66.2		271	12.8
60	20	19,590	-62.4		276	5.6
50	19	20,722	-59.7		262	4.9
40	18	22,120	-57.9		271	4.3
30	18	23,948	-54.7		246	3.9
20	12	26,568	-51.4		275	3.5
15						

HILO, T. H.
(1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	9	25.0	79	78	2.5
1,000	31	126	23.9	79	85	3.5
950	31	582	20.6	83	93	6.4
900	31	1,040	17.4	86	96	6.0
850	31	1,527	14.6	87	92	6.4
800	31	2,039	12.6	81	87	5.8
750	31	2,590	10.5	66	72	2.9
700	31	3,153	8.1	49	50	1.6
650	31	3,768	5.0	41	60	.8
600	31	4,410	.8	42	259	1.2
550	31	5,104	-3.5	43	247	1.3
500	31	5,851	-7.9	40	236	9.5
450	31	6,675	-13.4	35	245	13.1
400	31	7,549	-19.3	38	256	18.1
350	31	8,528	-26.4	34	255	22.9
300	31	9,623	-34.8		260	27.2
250	31	10,868	-44.7		255	35.0
200	31	12,321	-56.4		250	33.8
175	31	13,156	-62.6		251	31.5
150	31	14,092	-68.4		260	32.6
125	26	15,177	-71.0		256	20.0
100	20	16,490	-73.2		234	9.7
80	15	17,795	72.7		116	6.4
60	14	19,519	-64.5		81	17.5
50	13	20,638	-61.7		92	21.6
40	9	22,025	-58.6			
30	8	23,855	-53.8			
20						
15						

INTERNAT. FALLS, MINN.
(971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	360	8.7	68	170	2.5
1,000	31	113				
950	31	542	9.5	59	183	6.4
900	31	989	7.6	59	210	15.7
850	31	1,458	5.5	59	229	18.6
800	31	1,952	3.0	57	243	19.6
750	31	2,481	.4	58	249	24.1
700	31	3,023	-2.4	51	261	24.5
650	31	3,612	-5.6	46	259	28.9
600	30	4,232	-9.2	44	266	30.5
550	30	4,900	-13.3	40	270	33.4
500	30	5,619	-18.0	39	268	36.3
450	30	6,408	-23.3	39	267	39.4
400	30	7,250	-29.4	37	266	40.0
350	29	8,184	-36.6	38	266	46.4
300	29	9,233	-44.3		268	51.3
250	28	10,428	-52.3		265	52.6
200	25	11,849	-57.5		267	50.7
175	24	12,689	-58.1		267	44.9
150	23	13,657	-58.3		271	41.2
125	21	14,798	-58.8		272	38.1
100	18	16,193	-58.8		278	35.0
80	16	17,592	-58.1		277	20.8
60	16	19,404	-58.3		277	18.6
50	15	20,560	-58.3		281	15.9
40	11	21,974	-57.0		284	15.7
30	6	23,815	-55.8			
20						
15						

JACKSON, MISS.
(1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	101	17.6	77	105	1.4
1,000	31	157	19.5	66	99	2.9
950	31	603	18.7	57	102	7.0
900	31	1,061	15.8	56	104	6.6
850	31	1,544	13.7	48	112	4.1
800	31	2,053	11.5	41	118	2.3
750	31	2,594	8.6	40	83	1.4
700	31	3,156	5.3	40	34	.8
650	31	3,764	1.9	38	318	1.2
600	31	4,398	-1.9		296	3.5
550	31	5,088	-6.2		300	4.7
500	31	5,823	-11.1		295	7.0
450	31	6,633	-17.0		300	9.7
400	31	7,495	-23.4		295	12.2
350	31	8,457	-31.0		282	13.4
300	31	9,531	-39.2		277	17.1
250	29	10,753	-47.7		269	25.6
200	28	12,196	-55.8		272	31.5
175	27	13,041	-58.9		270	31.1
150	27	14,000	-62.1		272	30.1
125	27	15,116	-65.8		270	24.1
100	25	16,462	-68.2		275	17.7
80	24	17,802	-67.2		280	7.0
60	24	19,553	-63.0		45	4.1
50	24	20,681	-60.4		82	4.5
40	20	22,069	-57.9		106	1.9
30	18	23,903	-54.4		84	2.3
20	9	26,524	-51.2			
15						

JACKSONVILLE, FLA.
(1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	19.9	91	50	4.9
1,000	31	157	20.3	85	46	7.8
950	31	598	17.8	81	54	10.3
900	31	1,061	15.3	78	66	9.1
850	31	1,543	12.9	72	71	6.4
800	31	2,051	10.9	61	79	3.3
750	31	2,593	8.7	53	200	1.2
700	31	3,156	5.8	50	213	1.0
650	31	3,762	2.6	45	288	1.0
600	30	4,407	-1.1		272	4.3
550	30	5,095	-5.6		268	9.1
500	30	5,836	-10.6		261	10.3
450	30	6,644	-16.2		266	12.0
400	30	7,514	-22.5		264	14.0
350	30	8,479	-30.2		254	18.3
300	30	9,556	-38.5		253	24.9
250	30	10,783	-47.7		252	29.9
200	29	12,223	-56.9		253	32.8
175	29	13,061	-60.4		257	32.6
150	29	14,012	-64.0		260	28.9
125	29	15,117	-67.9		260	22.0
100	28	16,447	-70.2		269	14.8
80	27	17,777	-68.3		279	7.2
60	25	19,523	-63.0		71	4.9
50	25	20,649	-60.6		99	4.7
40	23	22,046	-57.3		80	5.1
30	22	23,876	-54.1		85	5.6
20	16	26,491	-50.0		93	10.3
15	5	28,358	-48.9			

KING SALMON, ALASKA
(1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	15	0.1	81	306	3.1
1,000	31	28			309	2.1
950	31	439	-2.2	77	277	5.6
900	31	866	-4.4	80	280	8.4
850	31	1,314	-6.9	79	293	11.5
800	31	1,786	8.8	72	293	12.2
750	31	2,290	-11.3	68	297	12.6
700	31	2,810	-14.3	61	291	14.4
650	31	3,375	-17.7	57	287	15.5
600	31	3,963	-21.4	52	288	17.5
550	31	4,605	-25.5	49	291	19.6
500	31	5,284	-30.0	48	288	23.5
450	31	6,035	-35.0		286	24.3
400	31	6,839	-40.3		285	29.3
350	31	7,736	-46.0		284	33.2
300	31	8,750	-49.8		287	39.4
250	30	9,922	-50.5		283	40.8
200	30	11,376	-50.2		279	39.8
175	30	12,246	-50.3		284	38.7
150	30	13,250	-50.3		278	34.4
125	30	14,437	-50.8		281	33.0
100	27	15,884	-50.5		282	26.8
80	27	17,334	-51.6		276	27.0
60	26	19,198	-52.2		282	23.9
50	24	20,382	-52.9		276	21.2
40	19	21,809	-53.8		280	20.2
30	10	23,669	-53.7			
20						

KOTZEBUE, ALASKA
(1005 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	-7.0	80	103	6.8
1,000	31	46			96	6.4
950	31	452	-7.6	63	99	6.4
900	31	865	-8.7	62	124	2.7
850	31	1,307	-10.0	59	200	1.4
800	31	1,772	-11.5	55	247	2.7
750	31	2,269	-14.0	51	256	2.7
700	31	2,785	-17.0	50	258	3.5
650	31	3,344	-20.1	48	245	3.3
600	30	3,925	-23.8	48	263	2.3
550	28	4,562	-27.8	45	267	3.1
500	28	5,237	-32.3		296	1.7
450	28	5,980	-37.1		306	2.9
400	28	6,778	-42.4		354	2.7
350	26	7,673	-48.1		349	4.5
300	25	8,672	-53.1		321	6.8
250	23	9,852	-53.6		304	12.6
200	18	11,304	-51.9		288	17.7
175	17	12,169	-50.8		303	17.5
150	16	13,162	-50.7		282	17.5
125	14	14,359	-49.9		286	20.6
100	12	15,796	-50.6			
80	11	17,239	-51.2			
60	7	19,079	-52.1			
50	6	20,247	-52.2			
40	6	21,685	-53.9			
30						
20						

LAKE CHARLES, LA.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	5	20.8	80	132	2.5
1,000	31	150	22.3	70	125	5.6
950	31	599	19.9	64	110	7.4
900	31	1,059	16.6	64	95	5.2
850	31	1,544	13.7	60	89	3.9
800	31	2,053	11.6	46	65	2.7
750	31	2,600	9.3	36	22	1.6
700	31	3,159	6.1	37	342	2.5
650	31	3,766	2.6	36	312	5.2
600	31	4,406	-1.3		299	6.2
550	31	5,096	-5.5		290	7.0
500	31	5,834	-10.7		291	9.1
450	31	6,645	-16.5		285	13.4
400	31	7,510	-23.0		285	15.5
350	31	8,473	-30.6		279	20.2
300	31	9,549	-38.7		283	26.4
250	31	10,777	-47.1		281	38.3
200	30	12,226	-55.7		283	37.9
175	30	13,069	-59.2		286	40.8
150	30	14,025	-63.0		287	35.5
125	30	15,136	-66.7		285	27.4
100	29	16,477	-69.4		265	14.8
80	27	17,808	-68.0		275	7.8
60	24	19,555	-62.7		35	.4
50	24	20,687	-59.7		110	8.9
40	24	22,088	-57.5		75	8.4
30	22	23,922	-54.1		93	11.8
20	11	26,523	-50.6			

LANDER, WYO.
(827 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,696	11.0	41	244	6.4
1,000	31	77				
950	31	519				
900	31	982				
850	31	1,469				
800	31	1,979	11.6	33	260	5.2
750	31	2,519	7.7	35	262	7.4
700	31	3,079	3.4	38	263	11.3
650	31	3,678	1.2	39	261	14.6
600	31	4,308	-5.8	40	263	15.7
550	31	4,981	-10.9	41	260	21.2
500	31	5,708	-16.2	40	253	23.5
450	31	6,498	-21.8	39	247	23.1
400	31	7,349	-28.2	38	251	25.4
350	31	8,293	-35.5		252	21.8
300	30	9,348	-43.5		274	18.8
250	30	10,551	-51.5		269	20.0
200	30	11,977	-57.3		269	21.6
175	30	12,818	-59.0		267	21.8
150	29	13,777	-60.0		269	23.5
125	28	14,916	-60.7		270	24.9
100	27	16,307	-61.2		273	27.4
80	27	17,694	-60.5		274	22.0
60	26	19,492	-58.9		282	15.2
50	23	20,641	-58.4		284	13.4
40	22	22,050	-56.5		291	12.6
30	15	23,881	-55.0			
20						

LAS VEGAS, NEV.
(937 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	660	20.0	24	232	7.0
1,000	31	87				
950	31	535				
900	31	1,005	20.9	22	227	6.8
850	31	1,495	17.0	24	228	7.2
800	31	2,008	12.8	27	227	9.3
750	31	2,550	8.5	30	226	8.9
700	31	3,111	4.3	34	247	9.3
650	30	3,712	.2	34	253	9.7
600	30	4,345	-3.9		252	13.2
550	30	5,024	-8.5		254	16.9
500	30	5,759	-13.7		252	21.4
450	29	6,552	-19.9		254	23.3
400	29	7,412	-26.3		251	25.6
350	29	8,363	-33.7		255	29.9
300	29	9,427	-41.4		259	33.4
250	29	10,642	-49.4		261	35.0
200	29	12,078	-56.9		259	37.3
175	28	12,919	-58.9		256	35.9
150	28	13,882	-60.8		257	36.5
125	27	15,007	-63.2		254	33.6
100	24	16,367	-64.3		253	27.0
80	21	17,725	-63.6		256	18.8
60	19	19,506	-60.1		258	10.9
50	18	20,650	-58.2		259	5.6
40	16	22,054	-56.3		278	5.1
30	9	23,893	-53.9			
20						

LITTLE ROCK, ARK.
(1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	79	17.5	75	122	1.6
1,000	30	151	19.8	62	112	4.1
950	30	597	18.9	52	126	7.6
900	30	1,055	15.9	54	115	5.1
850	30	1,538	13.5	48	138	3.1
800	30	2,047	11.1	42	169	1.2
750	30	2,588	8.4	38	216	1.6
700	30	3,149	5.0	36	241	2.3
650	30	3,753	1.2		246	2.9
600	30	4,389	-2.7		262	4.7
550	30	5,076	-6.9		268	6.8
500	30	5,810	-12.0		268	6.0
450	30	6,614	-17.7		279	8.7
400	30	7,478	-24.1		270	10.5
350	30	8,437	-31.6		275	15.7
300	30	9,510	-39.8		266	22.0
250	30	10,731	-48.6		265	26.6
200	28	12,177	-56.0		268	28.6
175	26	13,018	-58.6		267	30.9
150	24	13,984	-61.1		274	27.6
125	19	15,099	-63.7		275	24.3
100	16	16,455	-65.8		279	20.6
80	14	17,804	-65.9		262	11.1
60	14	19,563	-62.4			
50	14	20,693	-60.4			
40	12	22,094	-57.4			
30	10	23,923	-54.6			
20	5	26,607	-50.6			
15						

MAZATLAN, MEXICO
(1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	14	28.6	75		
1,000	30	92	28.0	75		
950	30	553	25.5	65		
900	30	1,023	23.6	55		
850	30	1,520	20.8	55		
800	30	2,042	17.9	49		
750	30	2,595	14.1	49		
700	30	3,170	10.1	53		
650	29	3,788	5.8	56		
600	28	4,433	1.3			
550	28	5,132	-2.5			
500	27	5,876	-7.2			
450	26	6,699	-12.5			
400	25	7,579	-18.8			
350	22	8,560	-26.0			
300	20	9,659	-34.1			
250	16	10,906	-43.6			
200	6	12,361	-54.8			
175						
150						
125						
100						
80						
60						
50						
40						
30						
20						
15						

MCGRATH, ALASKA
(992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	103	-4.9	67	338	2.1
1,000	31	41				
950	31	444	-6.7	71	359	2.5
900	31	864	-8.2	77	31	2.3
850	31	1,307	-8.7	77	321	1.4
800	31	1,774	-10.4	68	309	1.4
750	31	2,272	-12.4	60	259	3.5
700	31	2,794	-15.3	51	295	4.9
650	31	3,354	-18.6	47	246	3.5
600	31	3,942	-22.6	47	201	4.1
550	31	4,578	-27.1	49	222	3.3
500	31	5,254	-31.9	50	248	4.1
450	31	5,999	-37.2		247	3.7
400	31	6,794	-42.6		272	6.8
350	31	7,684	-48.1		294	12.4
300	31	8,690	-51.8		297	18.3
250	31	9,869	-52.0		276	27.8
200	29	11,333	-50.1			
175	28	12,203	-49.5			
150	27	13,213	-49.8			
125	25	14,392	-49.7			
100	22	15,842	-49.5			
80	17	17,277	-49.8			
60	13	19,160	-50.8			
50	12	20,325	-51.4			
40	11	21,794	-51.5			
30						
20						
15						

MEDFORD, OREG.
(969 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	401	12.6	71	192	2.1
1,000	31	132				
950	31	570	13.7	60	242	2.1
900	31	1,019	10.9	61	266	3.9
850	31	1,493	7.7	64	243	5.4
800	31	1,990	4.4	64	243	8.2
750	31	2,521	1.5	58	244	10.9
700	30	3,071	-1.4	49	257	14.8
650	30	3,661	-5.3	50	268	15.9
600	30	4,282	-8.7	46	270	17.7
550	30	4,955	-12.4	44	282	18.5
500	30	5,673	-17.1	46	283	19.6
450	30	6,465	-22.8	44	278	16.9
400	30	7,309	-28.7	43	275	19.0
350	29	8,248	-35.4		300	17.5
300	29	9,304	-42.7		310	15.9
250	29	10,512	-50.4		332	13.8
200	29	11,942	-57.7		336	12.6
175	29	12,779	-60.0		317	8.9
150	29	13,739	-60.7		278	12.0
125	29	14,871	-61.3		266	13.8
100	29	16,254	-61.2		260	16.5
80	26	17,646	-60.5		266	14.2
60	26	19,444	-59.1		266	13.8
50	25	20,594	-58.2		269	7.4
40	22	22,014	-57.0		277	10.5
30	21	23,839	-55.0			
20	5	26,425	-52.4			
15						

MIAMI, FLA.
(1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	4	24.5	82	41	4.5
1,000	31	131	23.9	79	54	6.4
950	31	582	21.0	79	72	9.1
900	31	1,046	18.0	77	75	8.7
850	31	1,534	15.1	75	82	6.4
800	31	2,046	12.2	66	108	3.5
750	31	2,589	9.5	58	138	3.9
700	31	3,155	6.5	49	161	1.7
650	30	3,766	3.2	38	211	2.9
600	30	4,408	-.4	31	219	3.1
550	30	5,094	-4.7		230	5.4
500	30	5,842	-9.3		236	7.2
450	28	6,658	-14.9		231	9.3
400	27	7,534	-21.0		237	11.8
350	27	8,507	-28.1		242	13.8
300	27	9,593	-36.7		253	17.9
250	27	10,829	-46.2		270	20.4
200	27	12,276	-56.8		265	22.5
175	27	13,112	-61.8		269	23.5
150	27	14,055	-66.4		269	21.6
125	27	15,146	-70.5		282	16.5
100	27	16,461	-72.4		290	5.4
80	27	17,780	-69.5		70	4.3
60	27	19,525	-63.0		77	12.6
50	27	20,654	-60.0		83	12.6
40	27	22,057	-56.7		81	16.7
30	26	23,894	-53.6		87	15.0
20	23	26,515	-48.9		85	16.9
15	9	28,415	-46.9			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

MIDLAND, TEXAS (917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	871	20.2	46	123	4.9
1,000	31	113				
950	31	567				
900	31	1,034	21.3	39	132	7.8
850	31	1,526	18.3	39	167	10.9
800	31	2,043	15.2	35	204	7.4
750	31	2,590	11.4	35	228	6.4
700	31	3,158	7.4	37	245	7.0
650	31	3,766	2.7	42	262	9.5
600	31	4,405	-1.6	36	281	11.7
550	31	5,093	-6.2	31	272	15.3
500	31	5,831	-11.3		271	16.5
450	31	6,640	-17.0		279	20.2
400	31	7,503	-23.7		277	23.1
350	31	8,464	-30.9		277	27.0
300	31	9,539	-39.1		278	31.5
250	31	10,764	-47.9		278	37.5
200	30	12,207	-56.1		278	42.3
175	29	13,048	-59.5		272	40.8
150	28	14,010	-62.9		274	32.4
125	27	15,123	-66.5		275	29.1
100	24	16,463	-69.3		261	16.7
80	24	17,797	-67.0		260	6.6
60	24	19,553	-62.5		343	1.9
50	25	20,686	-59.7		90	6.0
40	25	22,088	-57.2		139	2.3
30	23	23,919	-54.3		95	4.5
20	15	26,545	-50.7			
15						

MONTGOMERY, ALA. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	17.8	88	54	2.1
1,000	31	161	20.0	73	66	4.3
950	31	606	18.3	66	84	8.2
900	31	1,065	15.1	68	93	8.4
850	31	1,548	13.0	60	97	6.0
800	31	2,055	10.8	48	100	4.1
750	31	2,595	8.1	42	87	1.6
700	31	3,158	5.3	39	13	2.3
650	30	3,765	1.9		338	3.5
600	30	4,400	-1.9		310	3.5
550	30	5,089	-6.4		310	5.2
500	30	5,824	-11.5		301	8.0
450	30	6,629	-17.5		289	10.1
400	30	7,494	-24.1		288	11.7
350	30	8,453	-31.5		280	14.8
300	30	9,525	-39.7		274	19.2
250	30	10,746	-48.3		270	24.5
200	30	12,187	-56.5		271	30.3
175	30	13,027	-59.3		274	29.5
150	29	13,986	-62.3		272	28.6
125	28	15,101	-65.3		270	24.9
100	27	16,445	-68.0		275	15.3
80	27	17,787	-66.5		282	10.9
60	27	19,543	-62.5		317	3.9
50	27	20,674	-60.1		321	1.4
40	27	22,075	-57.2		137	.8
30	24	23,907	-54.3		109	1.9
20	13	26,542	-50.5		156	2.5
15	6	28,385	-48.3			

NANTUCKET, MASS. (1023 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	10.9	82	66	3.5
1,000	31	201	12.6	76	69	2.9
950	31	630	10.7	65	281	1.6
900	31	1,080	9.1	53	272	3.3
850	31	1,552	7.6	46	294	6.0
800	31	2,050	6.5	38	286	7.6
750	31	2,581	4.4	35	289	8.0
700	31	3,137	1.6	35	275	11.5
650	31	3,733	1.8	31	282	11.3
600	31	4,363	-5.5		275	13.8
550	31	5,042	-9.7		275	17.7
500	31	5,769	-14.8		273	19.2
450	31	6,568	20.4		278	20.0
400	31	7,419	-26.7		282	20.8
350	31	8,368	-33.8		271	23.7
300	31	9,430	-41.9		265	28.2
250	31	10,640	-50.4		268	34.8
200	30	12,064	-58.3		267	36.3
175	30	12,898	-60.6		273	39.8
150	30	13,854	-61.4		273	37.9
125	30	14,980	-62.8		279	36.1
100	29	16,347	-63.6		283	25.6
80	27	17,718	-62.1		278	14.6
60	25	19,502	-60.2		274	10.7
50	25	20,642	-58.7		278	7.8
40	23	22,047	-57.1			
30	20	23,869	-55.4			
20	8	26,453	-53.2			
15						

NASHVILLE, TENN. (999 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	17.4	72	75	0.8
1,000	31	169			42	2.5
950	31	612	17.4	58	86	7.0
900	31	1,070	14.7	57	125	5.4
850	31	1,552	12.2	55	130	4.9
800	31	2,058	10.1	48	106	2.7
750	31	2,595	7.4	41	60	2.1
700	31	3,157	4.3	42	7	1.7
650	31	3,759	.9	41	334	2.3
600	31	4,395	-2.9	39	326	3.9
550	31	5,077	-7.3		303	5.6
500	31	5,814	-12.3		298	7.4
450	31	6,615	-18.1	31	290	8.7
400	31	7,480	-24.4	33	283	10.3
350	31	8,438	-31.9		279	11.7
300	31	9,507	-40.2		277	15.9
250	31	10,724	-49.5		271	20.4
200	31	12,157	-57.3		266	28.0
175	31	12,995	-59.6		270	28.9
150	30	13,956	-61.2		267	28.4
125	25	15,086	-64.2		273	22.9
100	23	16,441	-66.4		270	19.2
80	23	17,797	-64.7		279	10.5
60	21	19,565	-60.9		275	7.0
50	18	20,706	-59.0		257	4.3
40	17	22,114	-56.7		320	2.3
30	14	23,952	-54.0		316	6.8
20						
15						

N.Y. INT. AP, IDLEWILD (1023 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	13.0	77	15	4.9
1,000	30	199	13.4	71	41	5.6
950	30	637	11.6	70	83	5.2
900	30	1,081	9.1	67	95	3.9
850	30	1,555	8.5	51	102	1.2
800	30	2,055	7.0	45	10	.8
750	30	2,586	4.7	41	274	1.9
700	30	3,143	1.9	38	279	5.8
650	29	3,743	-1.3	39	276	9.7
600	29	4,373	-5.2	39	263	10.9
550	29	5,050	-9.4	34	270	12.6
500	29	5,781	-14.2	33	270	15.3
450	29	6,574	-20.2		270	18.6
400	29	7,433	-26.6		276	21.0
350	28	8,384	-34.0		273	26.0
300	28	9,447	-41.6		266	32.4
250	27	10,659	-50.4		268	38.7
200	26	12,082	-59.3		260	44.9
175	26	12,913	-61.2		265	45.3
150	26	13,866	-62.3		269	40.0
125	24	14,990	-63.1		272	33.6
100	24	16,357	-64.1		276	29.3
80	21	17,725	-63.3		274	22.5
60	16	19,487	-61.2		287	13.0
50	14	20,618	-59.8		292	10.1
40	12	22,017	-58.8		282	10.1
30	9	23,847	-55.9			
20						
15						

NOME, ALASKA (1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	-1.8	80	22	1.4
1,000	31	33			24	3.7
950	31	438	-4.1	76	95	1.0
900	31	863	-6.5	73	218	.8
850	31	1,308	-8.7	68	267	2.9
800	31	1,776	-10.8	61	280	3.7
750	31	2,272	-13.6	58	272	5.4
700	31	2,790	-16.6	56	255	6.6
650	31	3,349	-19.8	54	279	7.6
600	31	3,933	-23.3	52	288	7.8
550	31	4,566	-27.3	51	298	8.7
500	31	5,244	-31.7	47	294	8.9
450	31	5,986	-36.8		296	10.3
400	30	6,777	-42.4		314	14.6
350	30	7,668	47.3		290	7.4
300	30	8,678	-50.9		282	10.1
250	29	9,865	-51.9		280	12.6
200	29	11,315	-49.8		282	17.7
175	29	12,189	-49.4		285	20.0
150	28	13,205	-49.8		285	21.4
125	28	14,397	-49.6		281	20.6
100	28	15,857	-49.5		285	26.6
80	28	17,316	-50.1		281	26.8
60	27	19,192	-51.2		272	27.6
50	27	20,375	-51.8		272	28.4
40	25	21,821	-52.6		280	27.4
30	20	23,690	-52.6		269	32.2
20	8	26,330	-51.1			

NORFOLK, VA (1021 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	16.6	87	62	7.8
1,000	31	185	16.7	79	69	10.7
950	31	627	14.8	75	76	12.2
900	31	1,078	12.5	71	87	9.7
850	31	1,556	10.7	65	85	8.0
800	31	2,060	8.5	64	76	5.1
750	31	2,597	6.1	59	74	2.7
700	31	3,154	3.2	57	131	.8
650	31	3,757	-.1	53	239	1.7
600	31	4,388	-3.7	52	254	4.1
550	31	5,074	-7.6	48	265	6.8
500	31	5,805	-12.6	43	267	7.6
450	31	6,610	-18.2	43	261	12.8
400	31	7,470	-24.3	43	254	16.9
350	31	8,429	-31.8	43	247	22.3
300	30	9,502	-39.7		250	26.8
250	30	10,723	-49.0		250	34.8
200	30	12,155	-58.0		254	39.2
175	30	12,990	-60.5		257	38.7
150	28	13,941	-62.4		256	34.8
125	25	15,059	-64.6		259	29.7
100	23	16,424	-66.2		270	22.0
80	22	17,773	-65.5		273	13.4
60	19	19,539	-61.9		292	6.2
50	17	20,674	-60.1		277	4.5
40	16	22,075	-58.2		285	3.5
30	13	23,890	-55.1			
20	5	26,494	-52.5			

NORTH PLATTE, NEBR. (917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	12.9	53	125	3.5
1,000	31	100				
950	31	543				
900	31	1,002	16.8	38	136	6.0
850	31	1,488	14.8	35	185	9.9
800	31	1,998	12.4	35	230	8.9
750	31	2,541	9.5	31	271	11.5
700	31	3,105	5.9	31	275	14.0
650	31	3,709	1.6	33	275	14.8
600	31	4,347	-3.1	36	269	15.9
550	31	5,031	-8.2	35	275	17.5
500	31	5,762	-13.2	30	279	16.9
450	31	6,562	-19.3		280	17.7
400	31	7,419	-26.1		282	18.1
350	31	8,370	-33.6		285	17.5
300	31	9,432	-42.0		275	19.8
250	31	10,640	-50.8		276	27.0
200	31	12,068	-57.9		275	24.3
175	31	12,904	-60.0		270	26.8
150	31	13,862	-61.1		270	31.7
125	31	14,988	-62.7		269	32.2
100	31	16,361	-62.7		274	25.1
80	31	17,738	-62.1		277	15.5
60	30	19,522	-59.9		279	13.8
50	29	20,665	-57.9		289	12.8
40	21	22,081	-57.6		292	12.0
30	10	23,922	-55.0			
20						

OAKLAND, CALIF. (1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	15.1	75	283	6.2
1,000	30	139	14.8	72	282	6.4
950	30	576	14.5	59	282	7.4
900	30	1,030	13.1	51	287	6.6
850	30	1,508	11.2	47	295	6.8
800	30	2,013	8.8	39	299	6.8
750	30	2,555	5.5	41	294	7.6
700	30	3,105	1.9	44	293	8.9
650	30	3,703	-1.7	39	288	10.9
600	30	4,332	-5.5	38	285	13.6
550	30	5,006	-9.9	37	288	15.9
500	30	5,738	-14.8	33	292	17.3
450	30	6,537	-20.4	32	290	21.8
400	30	7,388	-26.8		295	22.9
350	30	8,337	-34.5	35	294	25.1
300	30	9,396	-42.5		298	26.0
250	30	10,604	-50.8		298	26.6
200	30	12,033	-57.9		290	26.8
175	30	12,870	-59.8		279	28.0
150	29	13,823	-61.5		271	30.9
125	28	14,947	-62.9		271	29.7
100	27	16,315	-63.5		266	25.4
80	26	17,683	-62.2		265	21.4
60	26	19,469	-59.8		271	13.2
50	26	20,609	-59.0		271	13.2
40	25	22,012	-57.2		271	9.9
30	20	23,828	-55.2		267	9.1
20	11	26,378	-54.3			

OKLAHOMA CITY, OKLA. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	391	18.8	57	155	4.3
1,000	31	134				
950	31	580	21.0	44	157	7.8
900	31	1,044	18.4	45	179	10.5
850	31	1,531	15.2	47	196	8.0
800	31	2,042	12.3	48	214	5.8
750	31	2,589	9.2	45	261	4.7
700	31	3,148	5.6	40	282	6.0
650	31	3,752	1.7	35	291	7.2
600	31	4,389	-2.6	33	305	9.5
550	30	5,075	-7.1		290	10.5
500	30	5,809	-12.1		286	13.2
450	30	6,613	-18.0		288	15.2
400	30	7,474	-24.8		281	17.9
350	30	8,430	-32.3		277	20.4
300	30	9,498	-40.5		271	23.3
250	30	10,716	-48.8		272	25.6
200	30	12,155	-56.2		275	28.9
175	30	12,997	-58.7		276	30.3
150	29	13,961	-61.0		271	31.5
125	28	15,087	-63.6		276	28.4
100	27	16,444	-66.0		275	22.7
80	27	17,800	-64.5		277	12.8
60	26	19,572	-61.1		285	6.0
50	26	20,708	-59.1		284	1.6
40	26	22,113	-56.8		324	1.9
30	20	23,945	-54.7		277	6.2
20						

OMAHA, NEBR. (969 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	403	15.9	51	155	5.2
1,000	31	127				
950	31	570	17.6	43	157	7.6
900	31	1,027	15.2	42	188	14.4
850	31	1,509	12.9	40	213	17.7
800	31	2,016	10.2	44	230	15.9
750	31	2,556	7.1	44	245	15.5
700	31	3,114	3.9	44	254	14.4
650	31	3,716	.1	42	257	16.1
600	31	4,349	-4.1	41	257	20.0
550	31	5,031	-8.8	36	257	17.3
500	31	5,760	-14.3	33	254	18.5
450	31	6,558	-20.1		262	21.6
400	30	7,410	-26.9		260	21.4
350	30	8,358	-34.2		260	22.9
300	30	9,418	-42.4		267	25.6
250	30	10,625	-51.1		269	27.2
200	30	12,050	-58.4		270	30.1
175	30	12,885	-60.5		270	30.7
150	29	13,842	-61.8		271	31.1
125	29	14,966	-63.2		270	30.1
100	28	16,336	-63.4		267	27.4
80	27	17,708	-62.7		270	19.0
60	26	19,491	-60.0		277	14.0
50	25	20,632	-58.7		279	11.1
40	22	22,037	-57.4		266	9.5
30	20	23,856	-55.6		270	11.1
20						

PEORIA, ILL. (995 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	201	15.2	61	139	3.5
1,000	31	161				
950	31	602	15.9	49	159	9.5
900	31	1,055	13.5	47	200	10.3
850	31	1,534	11.5	42	226	11.1
800	31	2,039	9.1	40	244	10.3
750	31	2,579	6.5	34	251	10.3
700	31	3,134	3.1	36	266	9.9
650	31	3,734	-.6	33	261	9.9
600	31	4,366	-4.6	35	267	11.3
550	31	5,046	-9.1	33	273	12.2
500	31	5,776	-14.0	32	273	14.8
450	31	6,574	-19.6	33	268	17.9
400	31	7,432	-26.3	38	268	20.2
350	31	8,381	-33.7	38	258	20.8
300	31	9,442	-42.0		257	23.3
250	31	10,649	-51.3		257	29.3
200	31	12,069	-58.9		264	29.1
175	31	12,902	-60.3		267	32.8
150	30	13,859	-61.8		269	29.1
125	30	14,982	-62.7		268	28.2
100	29	16,349	-63.7		267	22.5
80	28	17,719	-62.6		263	17.3
60	22	19,491	-60.7		272	10.7
50	20	20,620	-59.4		268	8.2
40	20	22,019	-58.0		274	9.7
30	17	23,827	-56.7		278	8.0
20	10	26,387	-54.5			

PHOENIX, ARIZ. (972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	341	23.5	34	244	1.2
1,000	31	93				
950	31	547	25.8	22	272	4.7
900	31	1,019	22.7	23	257	5.8
850	31	1,512	19.0	25	230	7.0
800	31	2,028	15.1	28	209	8.4
750	31	2,580	11.0	31	199	9.9
700	31	3,141	6.8	31	206	11.7
650	31	3,751	2.5	27	219	12.0
600	31	4,388	-1.9		232	14.6
550	31	5,075	-6.6		237	16.1
500	31	5,811	-11.9		241	18.5
450	31	6,620	-17.7		247	21.8
400	31	7,480	-24.2		254	25.4
350	31	8,439	-31.6		258	27.0
300	31	9,510	-39.8		253	31.3
250	31	10,731	-48.4		250	29.9
200	31	12,173	-56.1		248	34.0
175	31	13,015	-58.9			
150	28	13,986	-61.4			
125	28	15,106	-64.8			
100	27	16,455	-66.7			
80	27	17,805	-65.3			
60	27	19,568	-61.9			
50	26	20,704	-58.9			
40	26	22,110	-56.8			
30	17	23,948	-54.4			
20						

PITTSBURGH, PA. (981 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	353	13.1	73	98	4.1
1,000	31	188				
950	31	626	13.5	65	127	5.6
900	31	1,077	11.6	65	182	5.8
850	31	1,553	9.9	55	225	5.6
800	31	2,055	7.5	50	243	5.2
750	31	2,591	5.3	41	251	5.2
700	31	3,146	2.7	42	269	6.6
650	31	3,744	-.9	43	272	8.5
600	31	4,376	-4.8	44	276	8.9
550	31	5,055	-8.9	36	278	12.2
500	31	5,780	-13.7	34	276	13.6
450	31	6,578	-20.2		276	15.5
400	31	7,434	-26.8		278	18.6
350	31	8,382	-34.1		272	21.0
300	31	9,441	-42.6		268	24.7
250	31	10,645	-48.4		263	26.6
200	31	12,062	-59.7		262	34.4
175	27	12,894	-61.5		258	33.2
150	23	13,837	-62.2		260	34.2
125	18	14,959	-63.3		263	30.9
100	14	16,332	-64.4		261	25.1
80	8	17,651	-64.5			
60	8	19,417	-62.6			
50	8	20,542	-62.0			
40	6	21,916	-60.7			
30	5	23,690	-58.3			
20						

PORTLAND, ME. (1022 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	20	7.2	85	274	2.9
1,000	31	196	10.2	69	265	5.6
950	31	628	9.2	62	273	9.1
900	31	1,069	7.4	55	285	11.7
850	31	1,539	6.3	43	293	11.3
800	31	2,035	5.0	38	286	12.4
750	31	2,565	2.5	40	285	13.0
700	31	3,114	-.5	39	280	15.5
650	31	3,707	-3.8	37	278	18.5
600	31	4,330	-7.6	41	276	21.6
550	31	5,005	-11.6	39	271	25.1
500	31	5,726	-16.4	35	269	27.0
450	31	6,515	-22.0		267	28.9
400	31	7,366	-28.3		263	31.3
350	31	8,309	-35.4		265	33.6
300	31	9,365	-43.0		261	39.2
250	31	10,570	-51.0		265	44.7
200	31	11,999	-57.2		263	49.1
175	31	12,839	-59.4		265	45.6
150	30	13,800	-60.1		266	43.7
125	30	14,932	-61.6		269	41.2
100	30	16,312	-61.6		270	35.9
80	30	17,698	-60.4		268	28.7
60	29	19,496	-59.6		269	17.9
50	29	20,638	-58.7		265	15.5
40	25	22,035	-57.9		274	11.8
30	21	23,856	-55.5		266	10.7
20	8	26,447	-53.4			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

RAPID CITY, S. DAK. (903 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	966	11.3	38	5	3.1
1,000	30	94				
950	30	534				
900	30	993			8	3.9
850	30	1,472	12.6	36	268	3.3
800	30	1,977	9.1	39	264	8.7
750	30	2,515	6.3	42	262	15.2
700	30	3,072	3.0	43	258	17.9
650	30	3,669	- 1.3	45	253	19.6
600	30	4,300	- 6.1	47	252	23.7
550	30	4,974	-10.9	49	256	25.8
500	30	5,700	-16.2	46	256	29.1
450	30	6,492	-21.9	43	256	30.1
400	30	7,339	-28.2	41	257	30.5
350	30	8,282	-35.7		259	33.0
300	28	9,329	-44.0		261	34.2
250	28	10,528	-52.6		260	37.1
200	28	11,944	-59.3		262	36.9
175	26	12,781	-60.8		262	39.2
150	22	13,732	-61.4		259	37.5
125	16	14,882	-61.4		264	32.1
100	8	16,291	-62.6			
80						
60						
50						
40						
30						
20						

ST. CLOUD, MINN. (977 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	316	11.5	64	156	1.9
1,000	31	121				
950	31	558	13.6	54	182	7.4
900	31	1,008	11.6	52	213	13.6
850	31	1,485	9.6	49	243	15.2
800	31	1,986	7.3	46	261	16.9
750	31	2,520	4.4	45	268	18.6
700	31	3,073	1.1	41	270	21.6
650	31	3,667	- 2.3	38	268	25.3
600	31	4,297	- 6.2	39	264	28.2
550	31	4,969	-10.6	38	263	29.1
500	31	5,699	-15.5	37	266	28.9
450	31	6,491	-21.0		262	29.5
400	31	7,344	-27.5		257	26.8
350	31	8,290	-34.9		255	28.4
300	31	9,346	-43.3		264	26.4
250	31	10,549	-52.0		264	25.4
200	31	11,969	-58.6		262	27.2
175	31	12,804	-60.2		262	28.9
150	31	13,764	-60.3		265	30.5
125	31	14,898	-60.5		269	25.8
100	31	16,287	-60.6		269	24.1
80	30	17,679	-59.9		270	18.5
60	27	19,490	-58.2		268	17.5
50	26	20,640	-58.3		271	10.3
40	21	22,048	-57.3		270	11.1
30	13	23,877	-55.9			
20						

SALEM, OREG. (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	12.1	77	196	3.9
1,000	31	130	12.5	73	198	3.5
950	31	557	10.0	72	208	7.0
900	31	1,006	7.2	74	228	9.1
850	31	1,473	4.4	73	231	11.5
800	31	1,965	2.1	69	234	13.0
750	31	2,487	- .3	63	242	13.8
700	31	3,034	- 3.2	56	246	16.9
650	31	3,620	- 6.6	53	246	20.4
600	31	4,238	-10.3	51	252	23.9
550	31	4,906	-14.2	49	255	26.4
500	31	5,620	-18.6	50	258	29.5
450	31	6,406	-24.0	50	257	34.4
400	31	7,248	-30.3	50	257	35.7
350	30	8,199	-36.4	47	256	39.6
300	30	9,250	-43.5		268	41.8
250	30	10,453	-51.2		276	41.0
200	30	11,878	-57.7		280	34.2
175	28	12,715	-58.5		273	35.0
150	25	13,682	-59.8		278	29.1
125	24	14,815	-60.4		270	24.5
100	22	16,206	-61.0		267	23.1
80	17	17,619	-59.6		269	20.6
60	14	19,433	-58.8		274	13.2
50	12	20,571	-58.0		272	13.8
40	12	21,977	-57.7		271	10.9
30	8	23,837	-54.9			
20	5	26,516	-50.8			

SALT LAKE CITY, UTAH (872 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,288	11.2	55	156	1.4
1,000	30	117				
950	30	561				
900	30	1,013				
850	30	1,499	12.9	45	109	1.4
800	30	2,006	10.1	44	259	2.5
750	30	2,550	6.1	46	245	6.8
700	30	3,101	1.9	50	238	11.5
650	30	3,706	- 2.3	50	227	16.7
600	30	4,326	- 6.5	54	236	20.0
550	30	5,008	-11.1	54	234	20.2
500	30	5,726	-16.0	49	237	22.1
450	30	6,524	-21.5	44	241	25.8
400	30	7,370	-27.8	43	245	27.0
350	29	8,313	-35.3	43	245	28.2
300	29	9,369	-43.0		248	32.1
250	29	10,576	-50.7		246	34.6
200	29	12,006	-57.2		251	35.5
175	29	12,848	-58.4		255	35.0
150	28	13,813	-60.1		254	32.8
125	27	14,943	-61.4		256	29.5
100	24	16,319	-62.2		253	23.1
80	14	17,697	-61.1		247	18.6
60	8	19,480	-58.1			
50	6	20,652	-58.5			
40	5	22,064	-57.0			
30						
20						

SAN ANTONIO, TEX. (988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	22.9	54	114	2.7
1,000	31	137				
950	31	591	22.8	51	122	10.7
900	31	1,055	19.4	54	134	9.1
850	31	1,544	16.2	56	131	4.7
800	31	2,056	13.3	52	124	2.3
750	31	2,604	10.3	42	327	1.6
700	31	3,167	7.1	37	311	5.1
650	31	3,783	3.2	38	300	8.0
600	31	4,417	- .8	33	302	9.1
550	31	5,108	- 5.4		299	14.0
500	30	5,846	-10.4		294	15.3
450	30	6,659	-16.2		297	17.3
400	30	7,524	-22.7		293	22.1
350	30	8,488	-30.3		289	24.9
300	30	9,566	-38.6		288	30.7
250	30	10,794	-47.1		285	38.7
200	30	12,243	-55.7		284	41.0
175	30	13,084	-60.0		288	36.7
150	30	14,035	-64.5		285	27.4
125	30	15,137	-68.5		269	25.3
100	29	16,463	-71.2		270	22.1
80	28	17,783	-69.0			
60	28	19,525	-63.2			
50	27	20,655	-59.9			
40	25	22,052	-57.7			
30	22	23,878	-54.7			
20	15	26,479	-51.8			

SAN DIEGO, CALIF. (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	16.5	79	300	3.1
1,000	31	128			309	3.9
950	31	570	15.4	65	304	3.9
900	31	1,023	14.7	47	294	2.7
850	31	1,504	12.8	41	275	2.7
800	31	2,011	10.6	34	267	3.5
750	31	2,554	8.2	30	266	5.4
700	31	3,113	4.9	27	254	8.0
650	31	3,717	1.3		251	9.7
600	31	4,353	- 2.9		247	12.6
550	31	5,035	- 7.6		246	14.4
500	31	5,772	-12.7		249	18.3
450	31	6,573	-18.8		251	22.1
400	30	7,434	-25.4		256	24.7
350	30	8,389	-32.4		254	30.1
300	29	9,463	-39.6		256	36.5
250	29	10,686	-48.3		257	41.6
200	27	12,126	-56.3		257	43.1
175	27	12,968	-59.2		254	44.1
150	27	13,925	-62.4		255	43.1
125	26	15,042	-64.8		253	35.7
100	26	16,396	-66.5		253	25.6
80	26	17,746	-65.7		259	15.2
60	24	19,506	-61.8		259	2.5
50	24	20,640	-59.4		355	1.2
40	23	22,041	-56.8		77	2.7
30	20	23,860	-54.8		106	2.5
20	8	26,451	-53.0			
15						

SAN JUAN, P. R. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	24.3	88	141	3.7
1,000	31	124	25.3	77	121	7.4
950	31	578	22.7	78	100	12.0
900	31	1,044	20.0	76	99	12.0
850	31	1,535	17.2	72	98	10.1
800	31	2,051	14.7	66	98	9.1
750	31	2,602	11.9	60	96	9.1
700	31	3,170	8.7	57	94	8.9
650	31	3,785	5.2	55	101	8.2
600	31	4,430	1.6	53	111	7.6
550	31	5,127	- 2.3	49	110	7.4
500	31	5,876	- 7.1	45	110	7.4
450	31	6,701	-12.4	42	108	8.4
400	31	7,580	-18.4	37	114	7.4
350	31	8,561	-25.7	37	142	3.3
300	30	9,657	-34.4		172	4.5
250	30	10,903	-44.5		222	7.2
200	30	12,357	-56.3		262	12.0
175	28	13,190	-62.4		272	12.2
150	28	14,126	-68.4		289	11.3
125	27	15,206	-72.9		315	10.1
100	21	16,505	-74.5		13	3.9
80	18	17,800	-72.7		92	11.1
60	15	19,511	-65.2		90	18.3
50	15	20,633	-61.0		91	23.7
40	13	22,027	-57.4		94	30.5
30	10	23,866	-54.2		92	36.3
20	6	26,489	-49.4			
15						

SANTA MARIA, CALIF. (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	74	14.2	78	294	4.5
1,000	31	137	14.1	78	306	4.9
950	31	580	14.6	68	350	8.0
900	31	1,028	14.5	54	359	8.0
850	31	1,509	12.3	48	1	7.0
800	31	2,015	9.9	42	358	6.4
750	31	2,557	7.1	38	337	6.4
700	31	3,113	3.8	37	311	8.5
650	31	3,712	.0	33	299	8.9
600	31	4,347	- 4.1	31	292	10.5
550	31	5,027	- 8.9		285	9.7
500	31	5,759	-13.8		284	12.8
450	31	6,556	-19.6		279	15.2
400	31	7,415	-26.3		292	13.6
350	31	8,365	-33.8		298	15.5
300	31	9,427	-41.2		294	16.7
250	31	10,644	-48.6		265	22.0
200	30	12,090	-55.7		261	24.1
175	30	12,934	-58.5		256	28.6
150	30	13,896	-60.7		261	29.1
125	29	15,028	-62.3		259	25.1
100	29	16,399	-64.0		251	21.4
80	29	17,766	-63.2		262	14.0
60	29	19,545	-60.5		280	4.9
50	28	20,686	-58.5		320	3.3
40	23	22,093	-56.3		15	.8
30	21	23,931	-54.0		349	3.5
20	12	26,549	-51.6			
15						

SANTA MONICA, CALIF. (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	16.9	80	255	3.5
1,000	31	129	16.4	79	253	4.3
950	31	569	17.0	59	262	4.3
900	31	1,026	15.5	48	257	1.0
850	31	1,509	13.2	43	213	2.3
800	31	2,016	10.7	37	191	1.7
750	31	2,555	7.6	36	276	2.1
700	31	3,116	4.4	35	262	6.4
650	31	3,717	.7	32	255	7.6
600	31	4,353	- 3.6	35	259	11.8
550	31	5,036	- 8.3	32	262	14.0
500	31	5,767	-13.6	30	259	16.1
450	31	6,562	-19.7		260	16.9
400	31	7,422	-26.4		263	19.0
350	31	8,372	-33.4		258	23.7
300	31	9,437	-40.6		257	28.9
250	30	10,654	-48.6		258	34.0
200	30	12,094	-56.4		258	33.8
175	30	12,936	-58.6		258	33.6
150	30	13,898	-61.5		255	33.0
125	30	15,020	-64.1		254	30.5
100	30	16,379	-65.4		256	24.1
80	30	17,739	-64.1		260	15.7
60	30	19,510	-61.3		304	4.5
50	29	20,647	-59.0		327	2.7
40	29	22,053	-56.5		39	1.9
30	28	23,888	-54.2		33	2.7
20	25	26,496	-51.3		297	5.2
15	16	28,356	-50.1			

S. STE. MARIE, MICH. (994 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	7.9	84	121	2.7
1,000	31	168				
950	31	597	9.7	67	190	9.5
900	31	1,042	8.3	58	221	14.8
850	31	1,513	6.5	53	239	15.9
800	31	2,008	4.4	48	251	18.1
750	31	2,537	1.9	46	258	20.0
700	31	3,085	- 1.0	44	261	21.6
650	31	3,674	- 4.3	44	262	23.5
600	31	4,299	- 8.1	43	261	25.3
550	29	4,966	-12.7	46	268	27.4
500	29	5,687	-17.4	42	276	29.3
450	28	6,474	-22.9	39	277	31.3
400	26	7,317	-29.4	37	281	33.6
350	26	8,255	-36.6	39	275	34.4
300	25	9,304	-44.2		276	37.7
250	25	10,503	-52.3		279	45.1
200	23	11,914	-58.4		278	45.1
175	22	12,763	-59.8		276	43.1
150	22	13,726	-59.6		269	36.9
125	19	14,867	-60.1		268	35.7
100	15	16,261	-60.3		271	28.6
80	15	17,655	-58.7		263	22.9
60	15	19,464	-58.0		263	17.1
50	15	20,611	-58.2		269	14.2
40	14	22,009	-57.3		269	12.2
30	13	23,834	-55.1		271	10.7
20	9	26,429	-53.0			
15						

SEATTLE, WASH. (1000 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	10.0	84	172	5.2
1,000	31	127			163	3.9
950	31	557	8.7	76	202	10.7
900	31	999	6.0	76	218	13.6
850	31	1,465	3.1	78	230	14.0
800	31	1,954	.6	77	239	15.0
750	31	2,475	- 2.2	70	246	15.9
700	31	3,015	- 5.3	63	254	19.0
650	31	3,600	- 8.4	57	255	23.5
600	31	4,210	-12.2	51	254	26.0
550	31	4,876	-16.2	47	255	27.4
500	31	5,582	-20.5	47	258	32.6
450	31	6,360	-25.8	47	257	38.5
400	31	7,196	-31.8	50	258	43.3
350	31	8,127	-38.5	51	264	46.6
300	31	9,172	-44.7		270	54.0
250	31	10,372	-51.2		273	52.6
200	31	11,802	-56.3		272	45.8
175	31	12,648	-57.4		267	43.1
150	30	13,619	-58.7		263	40.0
125	24	14,753	-58.9		262	36.9
100	21	16,130	-57.8		264	31.7
80	20	17,527	-56.9		261	22.5
60	15	19,340	-56.6		261	18.5
50	13	20,481	-56.6		265	15.9
40	12	21,903	-56.6		267	12.2
30	10	23,720	-55.2		261	12.0
20						
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SHREVEPORT, LA. (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	76	19.8	65	109	3.5
1,000	31	146	21.6	57	108	5.8
950	31	594	19.9	49	110	7.2
900	31	1,054	16.6	53	116	5.1
850	31	1,538	13.8	49	104	3.1
800	31	2,047	11.2	44	105	1.4
750	31	2,589	8.2	41	260	1.6
700	31	3,149	5.1	34	281	2.9
650	31	3,755	1.2	36	296	4.7
600	31	4,389	- 2.7		300	6.8
550	31	5,072	- 6.7		296	9.3
500	31	5,811	-11.6		286	10.5
450	31	6,615	-17.4		283	15.2
400	31	7,481	-24.0		274	15.7
350	31	8,440	-31.7		269	20.2
300	31	9,511	-39.7		270	23.3
250	31	10,733	-48.5		272	31.3
200	31	12,173	-56.3		270	37.1
175	31	13,015	-59.4		273	39.0
150	31	13,972	-62.5		277	36.5
125	28	15,086	-65.9		273	28.0
100	26	16,430	-68.7		266	18.5
80	24	17,761	-67.6		255	8.5
60	23	19,512	-62.8		37	1.4
50	22	20,642	-60.4		95	4.5
40	21	22,043	-58.0		115	1.6
30	18	23,875	-55.4		51	4.5
20	9	26,515	-50.8			
15						

SPOKANE, WASH. (930 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	8.8	71	205	5.8
1,000	31	115				
950	31	544				
900	31	993	8.5	64	206	11.1
850	31	1,463	5.6	61	222	15.2
800	31	1,956	2.6	59	232	15.3
750	31	2,479	- .8	58	242	15.2
700	31	3,023	- 4.1	59	247	17.3
650	31	3,611	- 7.6	60	250	20.0
600	31	4,222	-11.5	57	253	22.0
550	31	4,888	-15.4	55	254	25.3
500	31	5,597	-20.4	53	258	28.9
450	31	6,374	-25.8	53	260	32.6
400	31	7,212	-31.7	51	263	35.2
350	31	8,142	-38.7		266	35.2
300	31	9,184	-45.5		267	38.1
250	31	10,381	-51.9		270	42.3
200	30	11,815	-56.4		274	39.8
175	30	12,661	-57.0		276	36.1
150	29	13,631	-58.8		268	32.1
125	29	14,776	-59.0		267	29.3
100	29	16,173	-59.2		268	26.4
80	28	17,573	-58.3		267	24.3
60	27	19,387	-57.6		269	18.1
50	24	20,541	-57.7		266	14.4
40	20	21,960	-56.7		280	14.0
30	18	23,798	-55.2		272	11.7
20	9	26,372	-53.4			
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SWAN ISLAND, W. I. (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	10	27.0	81	58	6.0
1,000	30	115	26.2	81	53	8.2
950	30	569	22.6	83	58	10.5
900	30	1,036	19.5	80	65	9.7
850	30	1,527	16.3	79	72	9.1
800	30	2,041	13.3	75	73	8.7
750	30	2,590	10.4	72	73	7.6
700	30	3,154	7.4	69	80	5.8
650	30	3,770	4.2	59	73	4.9
600	30	4,408	.8	50	74	4.9
550	30	5,105	- 3.3	44	83	4.1
500	30	5,850	- 7.8	42	61	2.3
450	30	6,676	-12.7	36	316	1.9
400	29	7,553	-18.8		315	4.9
350	28	8,533	-26.1		310	8.4
300	29	9,628	-34.7		295	11.1
250	28	10,874	-44.7		292	12.0
200	27	12,326	-56.6		285	15.9
175	27	13,161	-62.8		283	16.1
150	27	14,094	-69.2		277	12.2
125	27	15,168	-74.3		294	8.0
100	26	16,456	-77.1		49	3.5
80	25	17,749	-72.9		89	12.8
60	24	19,471	-65.2		94	22.5
50	22	20,594	-61.7		89	25.1
40	16	21,981	-57.8		91	34.0
30	10	23,828	-53.0			
20	5	26,430	-49.4			
15						

TAMPA, FLA. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	21.7	83	27	6.0
1,000	31	146	21.2	80	39	9.3
950	31	592	18.7	78	57	11.5
900	31	1,053	16.2	75	66	8.0
850	31	1,537	13.5	71	60	4.7
800	31	2,046	11.1	62	58	4.1
750	31	2,591	8.6	50	44	3.1
700	31	3,150	5.9	42	275	1.6
650	31	3,760	2.8	36	252	2.9
600	31	4,396	- 1.2		270	3.1
550	31	5,086	- 5.6		262	6.0
500	31	5,825	-10.2		264	7.4
450	31	6,638	-16.0		264	9.9
400	31	7,506	-22.4		262	11.7
350	29	8,469	-29.9		264	15.3
300	29	9,549	-38.2		259	22.0
250	28	10,781	-47.7		273	31.9
200	27	12,223	-57.5		276	34.0
175	27	13,058	-61.6		277	32.6
150	24	14,002	-65.8		279	28.0
125	23	15,101	-69.8		281	21.8
100	23	16,421	-71.8		278	9.1
80	23	17,742	-69.5		313	3.1
60	20	19,482	-63.8		79	8.2
50	20	20,607	-60.9		88	10.7
40	20	22,005	-58.0		90	12.8
30	20	23,833	-54.2		85	13.0
20	14	26,441	-49.8		83	12.2
15	7	28,297	-47.5			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	TATOOSH ISLAND, WASH. (1010 MB.)						TOPEKA, KANS. (985 MB.)						TUCSON, ARIZ. (925 MB.)						WASHINGTON, D. C. (1013 MB.)						WINNEMUCCA, NEV. (869 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	31	10.1	85	206	5.2	31	270	17.5	53	167	4.1	31	781	23.2	28	277	2.7	31	88	13.9	80	72	3.1	31	1,310	9.4	58	284	1.2
1,000--	31	114	10.3	81	202	4.9	31	139					31	86					31	195	15.1	71	77	5.4	31	118				
950 ---	31	540	7.3	77	236	6.4	31	583	18.6	43	165	9.9	31	540					31	634	13.2	70	80	6.2	31	557				
900----	31	981	4.5	77	248	8.2	31	1,043	15.6	46	186	14.2	31	1,017	23.5	23	290	6.4	31	1,082	11.0	69	74	3.5	31	1,011				
850----	31	1,445	1.8	74	260	9.7	31	1,525	13.0	47	206	15.3	31	1,512	19.9	25	258	7.0	31	1,557	9.1	63	22	1.7	31	1,493	12.5	45	268	1.7
800----	31	1,932	- .4	70	261	13.2	31	2,032	10.3	46	223	15.5	31	2,030	15.7	30	229	8.4	31	2,058	7.5	55	330	1.6	31	1,999	8.7	47	256	4.7
750----	31	2,450	- 3.0	65	252	16.3	31	2,572	7.7	39	234	12.8	31	2,577	11.3	34	212	10.5	31	2,594	5.2	50	217	1.4	31	2,537	4.5	52	251	10.3
700----	31	2,989	- 5.9	54	250	19.4	31	3,132	4.3	36	241	11.1	31	3,145	6.8	36	206	10.9	31	3,149	2.6	47	271	2.5	31	3,087	.3	57	251	13.8
650----	30	3,564	- 9.3	45	253	23.9	31	3,736	.5	36	253	11.1	31	3,750	2.2	37	207	9.7	31	3,748	- .7	45	271	3.9	31	3,681	- 3.8	56	255	14.6
600----	29	4,177	-13.0	43	258	28.2	31	4,368	- 3.8	34	252	10.5	31	4,391	- 1.9	31	227	10.7	31	4,380	- 4.2	40	281	6.2	31	4,304	- 8.1	54	257	16.3
550----	29	4,835	-16.9	46	263	31.9	31	5,047	- 8.7		253	9.9	31	5,076	- 6.5		244	14.8	31	5,063	- 8.2	36	284	7.8	31	4,977	-12.7	50	261	19.8
500----	29	5,544	-21.4	47	262	35.5	31	5,780	-13.9		259	10.5	31	5,815	-11.5		248	19.6	31	5,793	-13.2		270	8.9	31	5,695	-17.6	48	259	21.2
450----	29	6,316	-26.5	42	266	37.9	31	6,577	-19.9		253	14.0	31	6,625	-17.3		250	23.9	31	6,593	-19.0		269	10.7	31	6,489	-22.9	40	260	21.4
400----	29	7,154	-32.1	39	263	44.1	31	7,433	-26.3		251	14.8	31	7,487	-23.9		252	29.3	31	7,452	-25.5		273	11.8	31	7,330	-28.5	36	264	23.5
350----	29	8,084	-38.2		265	51.3	31	8,383	-33.5		250	16.9	31	8,447	-31.2		256	34.2	31	8,405	-32.9		259	17.3	31	8,273	-35.6	38	266	24.1
300----	28	9,145	-44.0		264	60.2	31	9,444	-41.6		264	22.3	31	9,521	-39.3		258	43.3	31	9,470	-41.2		257	24.7	31	9,330	-42.5		269	26.6
250----	27	10,340	-50.8		260	48.6	30	10,651	-50.7		272	25.4	31	10,745	-47.9		259	49.0	31	10,683	-50.1		252	29.9	31	10,540	-50.5		268	25.4
200----	27	11,776	-54.9		255	53.4	30	12,078	-57.8		275	25.3	31	12,187	-56.3		260	56.5	30	12,112	-58.4		255	30.9	31	11,974	-56.4		264	26.0
175----	27	12,626	-56.0		259	43.5	30	12,914	-59.8		271	28.4	31	13,028	-59.6		258	55.0	30	12,945	-60.8		259	31.7	31	12,818	-58.4		264	26.2
150----	27	13,603	-56.8		264	39.4	30	13,870	-61.7		274	28.2	31	13,984	-62.6		259	48.4	28	13,897	-61.6		266	31.9	30	13,781	-59.5		262	27.4
125----	27	14,756	-57.4		266	34.2	30	14,993	-63.2		271	26.8	31	15,099	-65.7		259	34.6	26	15,012	-63.8		271	28.7	29	14,911	-61.2		264	26.6
100----	25	16,161	-56.9		266	27.4	30	16,356	-64.8		270	25.4	25	16,445	-68.1		257	23.3	23	16,375	-65.0		278	22.1	29	16,295	-61.7		265	24.1
80-----	25	17,576	-56.5		264	23.9	28	17,719	-63.6		267	15.3	24	17,785	-66.5		263	9.7	22	17,740	-63.5		274	15.0	28	17,679	-60.0		259	20.8
60-----	24	19,399	-56.6		261	19.4	25	19,490	-60.8		276	11.5	21	19,538	-62.6		346	1.2	22	19,513	-61.2		272	9.1	27	19,481	-58.8		266	18.6
50-----	24	20,557	-55.7		263	16.9	25	20,625	-59.2		290	8.0	20	20,669	-59.7		71	4.3	21	20,648	-59.3		287	6.4	25	20,630	-58.1		270	15.2
40-----	24	21,977	-55.9		284	11.3	23	22,024	-57.7		273	9.7	18	22,078	-57.2		86	5.1	19	22,054	-57.1		274	5.1	24	22,036	-57.4		270	17.3
30-----	16	23,829	-55.4		295	6.4	14	23,849	-55.6		285	9.1	11	23,908	-54.7		68	4.5	14	23,886	-54.2		273	9.3	24	23,867	-54.8		275	16.5
20-----	7	26,442	-52.3				6	26,450	-52.6				5	26,472	-52.7				6	26,534	-50.0				7	26,448	-52.7			

Standard pressure surface (mb.)	YAKUTAT, ALASKA (998 MB.)						YUMA, ARIZ. (999 MB.)						* DENVER, COLO. (832 MB.)						* OGDEN, UTAH (852 MB.)						* RANTOUL, ILL. (989 MB.)					
					Wind						Wind						Wind						Wind						Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	12	3.7	87	120	6.8	31	105	25.8	28	258	3.7	30	1,661	23.2	32	140	4.3	29	1,450	23.6	25	61	1.2	30	227	21.5	64	165	0.6
1,000--	31	-4			122	7.0	31				318	1.4	30	20					29	26					30	127				
950----	31	416	2.9	77	130	9.1	31	544	24.0	26	251	5.1	30	490					29	491					30	577	21.8	61	237	3.3
900----	31	849	.3	73	137	10.1	31	1,012	20.5	27	255	3.1	30	971					29	969					30	1,043	18.6	64	268	4.5
850----	31	1,305	- 2.5	72	146	10.3	31	1,501	16.7	30	262	2.7	30	1,475					29	1,470			28	2.1	30	1,531	15.1	66	288	5.4
800----	31	1,783	- 5.5	70	153	9.7	31	2,014	13.0	29	227	4.1	30	2,006	22.4	31	180	7.6	29	1,997	20.7	24	260	2.9	30	2,042	11.9	63	291	4.7
750----	31	2,293	- 8.8	65	165	9.3	31	2,558	10.0		232	4.7	30	2,565	18.5	33	194	6.4	29	2,555	15.9	26	244	7.2	30	2,587	8.8	56	319	6.4
700----	31	2,818	-12.4	62	171	9.3	31	3,121	6.4		223	6.4	30	3,149	13.6	39	222	5.1	29	3,130	11.0	30	243	12.0	30	3,148	5.6	50	325	8.0
650----	31	3,383	-16.5	58	178	7.8	31	3,726	2.5		228	7.0	30	3,768	8.3	44	231	6.4	29	3,747	5.9	34	243	16.1	30	3,754	1.7	51	325	9.7
600----	31	3,976	-20.7	57	182	9.3	31	4,367	- 1.9		243	10.1	30	4,423	2.6	50	244	8.5	29	4,392	.5	37	236	19.2	30	4,391	- 1.7	45	317	9.9
550----	31	4,616	-25.3	54	184	7.8	31	5,052	- 6.9		241	12.6	30	5,116	- 3.3	56	255	13.0	29	5,082	- 5.1	39	234	24.5	30	5,078	- 5.5	39	317	12.8
500----	31	5,298	-30.2	51	192	9.5	30	5,789	-12.1		246	16.9	30	5,865	- 9.5	61	264	16.7	29	5,823	-11.3	40	234	27.2	30	5,820	-10.1	39	311	14.2
450----	31	6,077	-35.5		197	8.7	30	6,588	-18.0		252	18.8	30	6,680	-15.4	54	266	20.0	29	6,633	-17.4		239	30.3	30	6,633	-15.8		309	15.2
400----	31	6,850	-41.2		217	12.0	30	7,454	-24.9		248	20.4	30	7,549	-21.7	42	261	19.4	29	7,495	-23.7		241	30.1	30	7,500	-21.9		306	17.5
350----	31	7,745	-46.5		224	14.4	30	8,410	-32.1		249	25.1	30	8,516	-29.3	40	260	22.3	29	8,455	-31.4		240	30.5	30	8,468	-29.0		299	18.3
300----	31	8,756	-50.5		248	15.5	30	9,479	-39.9		253	30.3	30	9,596	-38.0		256	26.8	29	9,526	-39.9		243	35.4	30	9,553	-36.7		290	24.7
250----	28	9,942	-50.3		261	15.9	29	10,696	-48.6		256	34.4	30	10,824	-47.6		254	30.9	29	10,747	-48.2		243	41.4	30	10,788	-46.2		286	29.5
200----	26	11,381	-49.3		267	20.6	28	12,138	-56.3		253	37.9	30	12,265	-56.3		251	36.3	29	12,191	-54.6		244	39.8	30	12,237	-55.9		286	28.9
175----	25	12,258	-49.3		267	23.3	28	12,979	-58.9		255	38.1	30	13,106	-59.4		254	34.4	29	13,041	-56.4		247	40.6	30	13,080	-59.2		286	25.8
150----	23	13,250	-49.1		275	20.8	28	13,938	-61.7		255	35.2	30	14,062	-62.7		254	27.8	29	14,015	-58.1		242	34.0	30	14,039	-61.6		297	23.1
125----	20	14,420	-49.3		270	19.6	26	15,067	-64.3		257	32.6	30	15,177	-65.7		252	20.8	29	15,156	-60.5		237	28.7	30	15,163	-63.1		310	18.6
100----	17	15,869	-49.3		265	21.0	21	16,428	-66.3		259	22.0	29	16,531	-65.7		233	11.7	29	16,538	-62.1		233	17.3	29	16,525	-64.4		332	11.3
80-----	16	17,324	-50.3		275	17.7	15	17,773	-65.3		267	14.8	28	17,892	-63.2		182	3.9	28	17,917	-60.5		206	6.0	28	17,892	-62.3		356	8.0
60-----	14	19,197	-52.2		264	18.5	12	19,530	-61.4				25	19,678	-58.9		96	11.7	26	19,721	-56.6		111	6.6	24	19,680	-58.1		56	8.7
50-----	13	20,367	-52.5				10	20,670	-58.7				25	20,827	-57.0		96	13.0	26	20,882	-55.0		102	10.1	23	20,830	-56.6		74	10.3
40-----	9	21,833	-53.2				7	22,068	-55.8				24	22,248	-54.7		90	15.5	24	22,317	-52.8		97	14.4	23	22,251	-54.5		83	14.0
30-----	6	23,710	-52.9				5	23,893	-53.8				23	24,097	-52.0		97	16.9	20	24,173	-50.7		98	15.7	21	24,103	-52.0		81	16.3
20-----							5	26,515	-50.3				17	26,740	-47.7		90	17.5	11	26,833	-47.3				18	26,736	-49.5		80	17.7
15-----													#12	28,622	-45.7		95	19.2	6	28,741	-44.6				‡15	28,648	-46.4		90	20.2

10 mb., 6 obs., 21,341 m., -41.9°C.
‡ 10 mb., 10 obs., 21,373 m., -43.1°C.

* Air Force data for June 1956. July data will be included in the November issue of this publication.

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. OCTOBER 1956

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	ALBUQUERQUE, N. MEX								
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Oct.									
1------	----	----	----	----	1.25	----	----	----	----
2------	0.75	0.86	0.97	1.12	1.25	----	----	----	----
3------	.75	.86	.96	----	----	----	----	----	----
4------	.72	.83	.95	1.10	1.28	----	----	----	----
5------	----	----	----	----	Cloudy	----	----	----	----
6------	.61	.75	.84	1.02	1.14	1.03	----	----	----
7------	.46	.60	.75	.93	1.17	----	----	----	----
8------	----	----	----	----	Cloudy	----	----	----	----
9------	----	----	----	----	1.24	1.17	----	----	----
10-----	----	----	----	----	Cloudy	----	----	----	----
11-----	.73	.86	.97	1.12	1.31	----	----	----	----
12-----	----	----	----	----	Cloudy	----	----	----	----
13-----	.78	.90	1.01	1.18	1.29	1.22	1.10	1.02	0.91
14-----	.80	.93	1.03	1.18	1.31	----	1.07	1.01	.88
15-----	.84	.95	1.04	1.21	1.29	1.23	1.10	1.01	.90
16-----	.76	.88	.99	1.13	1.28	1.22	1.07	.94	.81
17-----	----	----	----	----	Cloudy	----	----	----	----
	Recorder inoperative for remainder of the month								
Averages	.72	.84	.95	1.11	1.26	1.17	1.09	1.00	.88
	BLUE HILL, MASS.								
	Air mass								
	4.86	3.89	2.92	1.94	*0.97	1.94	2.92	3.89	4.86
Oct.									
1------	0.85	0.95	1.06	----	----	----	----	0.87	0.75
3------	----	----	----	----	1.30	1.26	1.12	.97	.84
5------	.84	.94	1.06	1.30	1.38	1.28	1.11	.97	.88
6------	----	.91	1.08	1.24	1.35	1.21	1.07	.95	.87
8------	----	.95	1.10	1.27	1.34	1.27	1.10	.97	.86
9------	----	----	----	----	1.36	1.26	1.07	.95	.84
10-----	.89	.99	1.13	1.26	----	----	----	----	----
11-----	.89	1.01	----	1.28	1.38	1.17	1.00	.89	79
12-----	.93	1.02	----	1.27	----	----	----	----	----
13-----	K.78	K.92	K1.06	K1.20	K1.26	K1.12	K.89	K.74	K.61
14-----	K.52	K.65	K.79	KM.93	----	KM.79	KM.56	KM.41	KM.30
15-----	K.55	K.77	KM.83	KM.99	KM1.08	K1.00	K.80	K.61	----
16-----	K.61	K.74	K.93	K1.11	K1.12	----	----	----	----
19-----	----	----	----	----	----	1.26	1.10	.97	.87
20-----	.96	----	1.19	1.32	----	----	----	1.00	.93
24-----	----	----	----	----	----	----	1.13	1.02	.93
28-----	----	----	.95	----	----	1.30	1.14	.99	.87
29-----	----	----	----	----	----	----	1.06	.93	.85
30-----	----	----	----	----	----	1.27	.96	.79	.71
31-----	----	.93	1.04	1.12	----	----	----	----	----
Averages	.78	.90	1.02	1.19	1.29	1.18	1.01	.88	.79

Date	Sun's zenith distance								
	A. M.				0.0°	P M			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	TABLE MOUNTAIN, CALIF.								
	Air mass								
	3.76	3.01	2.26	1.51	*0.75	1.51	2.26	3.01	3.76
Oct.									
8-----	----	----	----	H1.44	----	----	----	----	----
12----	----	----	----	MH1.50	----	----	----	----	----
13----	----	----	----	1.47	----	----	----	----	----
15----	----	----	----	1.47	----	----	----	----	----
16----	----	----	----	H1.42	----	----	----	----	----
17----	----	----	----	H1.45	----	----	----	----	----
18----	----	----	----	H1.47	----	----	----	----	----
19----	----	----	----	H1 47	----	----	----	----	----
20----	----	----	----	H1.48	----	----	----	----	----
25----	----	----	----	1.47	----	----	----	----	----
26----	----	----	----	1.47	----	----	----	----	----
27----	----	----	----	H1.47	----	----	----	----	----
29----	----	----	----	1.46	----	----	----	----	----
30----	----	----	----	1.46	----	----	----	----	----
Averages	----	----	----	1.46	----	----	----	----	----
	MADISON, WIS.								
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Oct.									
1-----	----	----	----	----	1.09	0.98	0.72	0.56	Ac<25°
2-----	0.79	0.96	1.09	1.26	1.42	1.29	1.10	.84	----
4-----	.88	.99	1.12	1.24	1.38	1.18	Ci	Ci	.85
5-----	.87	1.00	1.22	1.30	1.32	----	.29	.22	.17
7-----	----	1.07	1.20	1.32	1.40	1.28	1.12	----	----
10----	.95	1.02	1.14	Ci	Ci	1.04	.88	.75	.61
13----	.44	.55	.68	.94	Ci	----	----	----	----
17----	.55	.70	Ci	----	----	----	----	----	----
18----	----	----	----	1.04	1.09	----	----	----	----
23----	.98	Ci	Ci	----	Ci<45°	----	----	----	----
26----	----	----	----	----	1.34	1.28	1.03	.74	.54
28----	K.62	K.73	K.85	H1.09	1.14	1.14	.90	.78	.64
Averages	.76	.88	1.04	1.17	1.27	1.17	.86	.65	.56
	WASHINGTON, D. C. (WBCO)								
	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Oct.									
1-----	----	1.03	1.15	----	----	----	----	----	----
2-10--	----	----	----	----	Cloudy	----	----	----	----
11----	SK0.63	SK.66	SK.78	SK1.33	----	SK1.31	SK0.96	SK0.81	SH0.69
12----	SK.63	SK 66	SK.79	SK1.33	----	SK1.31	SK.96	SK.81	SK.67
15----	----	SK.94	----	SK1.12	----	SH1.12	SK.79	----	----
16----	SK.54	SK.61	----	----	----	----	----	----	----
17-31-	----	----	----	----	Cloudy	----	----	----	----
Averages	.60	.78	.91	1.26	----	1.25	.90	.81	.68

H	Haze	K	Smoke	SK	Slight smoke
MH	Moderate haze	MK	Moderate smoke	SH	Slight haze

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

Discontinued September 2, 1956

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

Discontinued September 2, 1956

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-----------	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys-------	398	311	499	69	539	532	165	359	541	518	592	548	469	532	449	521	477	477	331	38	443	559	344	381
Date-----------	22	23	24	25	26	27	28		29	30	31	1	2	3	4									
Langleys-------	90	17	522	419	43	272	447	259	554	459	412	146	23	29	511	305								

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

Discontinued September 2, 1956

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-----------	1	2	3	4	5	6	7		8	9	10	11	12	13	14		15	16	17	18	19	20	21	
Langleys-------	140	192	82	83	51	53	105	101	48	68	78	63	92	65	102	74	76	77	122	82	84	63	145	93
Date-----------	22	23	24	25	26	27	28		29	30	31	1	2	3	4									
Langleys-------	144	29	62	122	82	176	175	106	52	69	82	110	40	53	46	65								

Note: Langley is the unit used to denote one gram calorie per square centimeter.

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month

OCTOBER 1956

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	225	258	115	*162	170	*17	120	185	182	178	177	**	187	207	202	*119	*-16	*221	*56	*72	*-10	*88	*141	151	**	**	*32	94	*-3	*-10	76	121

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of alfalfa. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

* Estimated values owing to occurrence of rain during period. While rain is falling, radiation is assumed to be zero.

** Radiometer inoperative.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh The instrument with which they were measured has not been checked by the Weather Bureau

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1956	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.
Oct. 1------	105	493	220	831	462	---	---	46	426	394	438	439	383	687	84	464	468	370	454
Oct. 2------	174	569	244	219	426	---	46	169	412	347	419	308	493	677	126	467	265	456	382
Oct. 3------	36	476	239	214	404	---	---	229	407	430	412	443	529	692	194	358	375	375	429
Oct. 4------	36	568	199	515	371	---	65	251	404	126	357	104	551	676	239	348	390	455	391
Oct. 5------	46	526	12	408	393	---	163	80	241	457	386	457	563	682	442	459	449	461	433
Oct. 6------	102	537	183	169	405	---	65	122	405	445	412	436	529	681	408	252	338	439	419
Oct. 7------	50	533	166	528	401	---	51	136	385	176	---	178	551	677	26	463	87	471	129
Average-------	78	529	181	412	409	---	78	148	383	339	404	338	514	682	217	402	339	432	377
Oct. 8------	89	445	122	532	161	---	116	54	391	437	265	429	543	459	348	503	477	417	298
Oct. 9------	79	---	33	504	---	---	62	46	397	403	335	395	534	682	233	516	445	399	308
Oct. 10------	126	482	227	482	---	---	25	79	316	438	138	409	510	639	164	457	400	291	160
Oct. 11------	102	520	64	347	---	---	20	86	367	425	35	402	410	655	296	513	432	369	397
Oct. 12------	48	339	46	529	---	---	66	25	350	356	126	349	404	693	396	482	409	352	420
Oct. 13------	34	552	47	522	---	---	40	106	258	399	194	378	406	580	216	415	404	236	413
Oct. 14------	40	551	104	521	106	---	29	165	258	353	345	317	485	669	97	182	395	225	419
Average-------	74	481	92	491	---	---	51	80	334	402	206	383	470	625	250	438	423	327	345
Oct. 15------	57	550	198	511	106	---	74	86	335	344	380	311	259	639	286	287	400	286	412
Oct. 16------	112	534	133	318	170	---	61	89	341	351	367	337	512	(715)	248	57	400	374	402
Oct. 17------	71	308	29	496	24	---	62	135	340	256	355	263	455	674	262	126	342	308	385
Oct. 18------	33	415	164	488	159	---	91	157	327	94	61	95	344	673	240	135	282	352	332
Oct. 19------	86	494	13	196	72	---	60	79	313	327	373	353	449	546	345	301	361	324	395
Oct. 20------	100	518	218	37	35	---	69	161	328	375	325	349	509	573	341	127	250	285	346
Oct. 21------	31	497	94	369	227	---	14	70	325	297	208	247	517	549	241	121	331	286	351
Average-------	70	474	121	345	113	---	62	111	330	292	296	279	435	(624)	281	165	338	316	375
Oct. 22------	44	485	102	454	48	---	18	73	156	183	281	89	516	684	238	204	156	349	344
Oct. 23------	27	436	123	459	183	---	16	75	188	30	98	51	516	647	---	326	247	372	318
Oct. 24------	34	268	52	472	61	421	34	105	164	335	269	338	477	415	297	395	252	338	384
Oct. 25------	63	475	86	471	125	209	11	27	176	302	74	333	463	655	314	103	378	91	347
Oct. 26------	47	468	247	406	173	230	10	8	294	86	173	88	220	531	311	181	230	374	69
Oct. 27------	23	458	115	478	196	459	13	46	205	245	214	121	459	682	245	132	---	365	352
Oct. 28------	15	452	149	461	---	286	10	74	175	288	335	300	422	665	297	200	---	357	355
Average-------	36	435	125	457	131	321	16	58	194	210	206	189	439	611	283	220	253	321	310
Oct. 29------	15	225	136	382	---	264	13	100	116	330	313	316	372	603	291	93	---	277	142
Oct. 30------	23	455	50	377	---	166	14	141	268	302	53	292	325	628	259	116	---	86	66
Oct. 31------	17	415	143	437	---	---	18	152	264	263	207	230	474	691	263	275	---	191	333
Nov. 1------	26	199	61	445	---	---	16	93	46	166	116	125	385	676	249	204	---	173	70
Nov. 2------	17	447	12	449	---	391	12	112	21	58	159	33	251	586	275	372	---	217	333
Nov. 3------	9	430	19	447	241	325	9	79	181	61	196	70	224	684	---	346	---	81	322
Nov. 4------	12	315	---	427	143	126	5	71	257	297	104	---	262	592	154	270	---	126	315
Average-------	17	355	70	423	---	254	12	107	165	211	164	178	328	637	249	239	---	164	226

1956	Dodge City, Kans.	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Ft. Worth, Tex.	Fresno, Calif.	Grand Junction, Colo.	Grand Lake, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Honolulu, T. H.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, New York
Oct. 1------	523	423	402	236	514	493	128	176	480	---	413	431	441	81	537	---	394	---	448
Oct. 2------	540	426	356	133	555	(341)	47	485	365	---	439	417	374	232	556	---	266	---	250
Oct. 3------	(517)	433	451	233	(557)	280	107	481	269	---	346	430	193	148	298	---	123	498	398
Oct. 4------	517	435	164	282	549	450	91	511	135	---	378	342	168	238	289	---	384	497	87
Oct. 5------	457	444	438	295	532	465	77	517	339	---	264	356	200	534	213	---	401	541	(410)
Oct. 6------	515	175	441	274	541	388	108	504	395	---	413	421	61	271	334	---	317	586	(216)
Oct. 7------	513	360	---	287	533	466	47	533	317	---	339	403	434	614	338	---	436	561	147
Average-------	(512)	385	375	249	(540)	(412)	87	458	328	---	370	400	267	302	366	---	331	537	(280)
Oct. 8------	472	393	(401)	270	539	309	148	515	365	---	108	402	458	620	560	---	418	566	425
Oct. 9------	366	412	392	281	552	332	107	490	385	---	330	395	431	609	547	---	435	559	307
Oct. 10------	395	412	404	261	545	330	80	440	348	---	411	360	419	567	507	---	390	542	280
Oct. 11------	441	297	417	246	536	199	80	494	408	---	382	147	401	431	405	---	380	570	435
Oct. 12------	421	353	387	183	389	384	80	322	447	---	294	349	408	551	528	---	314	565	320
Oct. 13------	427	356	396	237	528	468	57	265	429	---	355	203	424	53	524	---	365	---	344
Oct. 14------	464	373	347	147	522	449	63	346	430	---	374	161	424	542	---	---	378	---	351
Average-------	427	371	(392)	232	516	353	88	410	402	---	322	288	424	482	512	---	383	560	352
Oct. 15------	393	271	342	229	497	460	86	(245)	423	---	390	189	415	532	335	---	338	546	345
Oct. 16------	430	317	(344)	218	503	454	128	160	419	---	384	199	301	352	55	---	---	536	347
Oct. 17------	445	324	242	143	488	449	77	253	407	---	312	251	56	237	179	---	---	535	345
Oct. 18------	282	266	65	228	506	354	123	321	371	421	359	228	258	390	460	---	311	448	160
Oct. 19------	355	365	309	182	505	436	118	(455)	394	397	269	356	63	331	374	---	190	517	394
Oct. 20------	459	127	353	98	516	429	42	384	393	419	375	239	62	113	185	---	242	520	219
Oct. 21------	465	245	329	164	520	369	53	---	380	416	366	174	51	78	88	---	189	521	286
Average-------	404	274	(283)	180	505	422	90	(303)	398	413	351	234	172	290	239	---	254	518	299
Oct. 22------	449	287	235	152	(497)	(374)	69	---	356	302	301	321	199	322	350	---	161	366	232
Oct. 23------	444	304	97	(107)	481	(73)	99	---	110	159	192	175	363	330	237	---	313	385	50
Oct. 24------	345	269	282	215	446	424	109	---	369	146	41	198	266	479	205	---	319	501	233
Oct. 25------	446	311	324	77	501	382	74	---	354	366	257	211	---	240	200	---	278	487	360
Oct. 26------	426	63	114	69	489	---	24	---	344	381	304	48	---	203	70	---	171	463	279
Oct. 27------	417	345	262	104	471	386	---	---	345	372	318	58	---	---	227	---	326	508	41
Oct. 28------	401	312	301	140	482	122	---	---	363	356	251	324	---	224	49	---	318	423	291
Average-------	418	270	231	(123)	(481)	(293)	75	---	320	297	238	191	---	300	191	---	269	448	212
Oct. 29------	102	301	(319)	197	257	378	52	---	354	35	36	283	---	264	164	---	295	483	330
Oct. 30------	426	286	---	72	480	393	41	---	148	370	298	(150)	---	146	12	(400)	226	457	193
Oct. 31------	426	128	210	200	456	283	86	448	364	196	---	80	108	272	286	(704)	123	451	92
Nov. 1------	406	79	194	197	362	352	67	430	319	114	122	296	265	361	374	639	80	471	278
Nov. 2------	256	278	46	177	431	(377)	75	(160)	328	246	59	287	117	417	430	439	239	469	108
Nov. 3------	110	77	80	152	422	392	41	97	324	157	232	270	245	376	374	668	287	465	147
Nov. 4------	173	43	289	142	429	346	67	32	333	278	356	79	77	109	222	471	169	453	168
Average-------	271	170	(190)	162	405	(360)	61	(233)	310	199	184	(207)	162	278	266	(554)	203	464	188

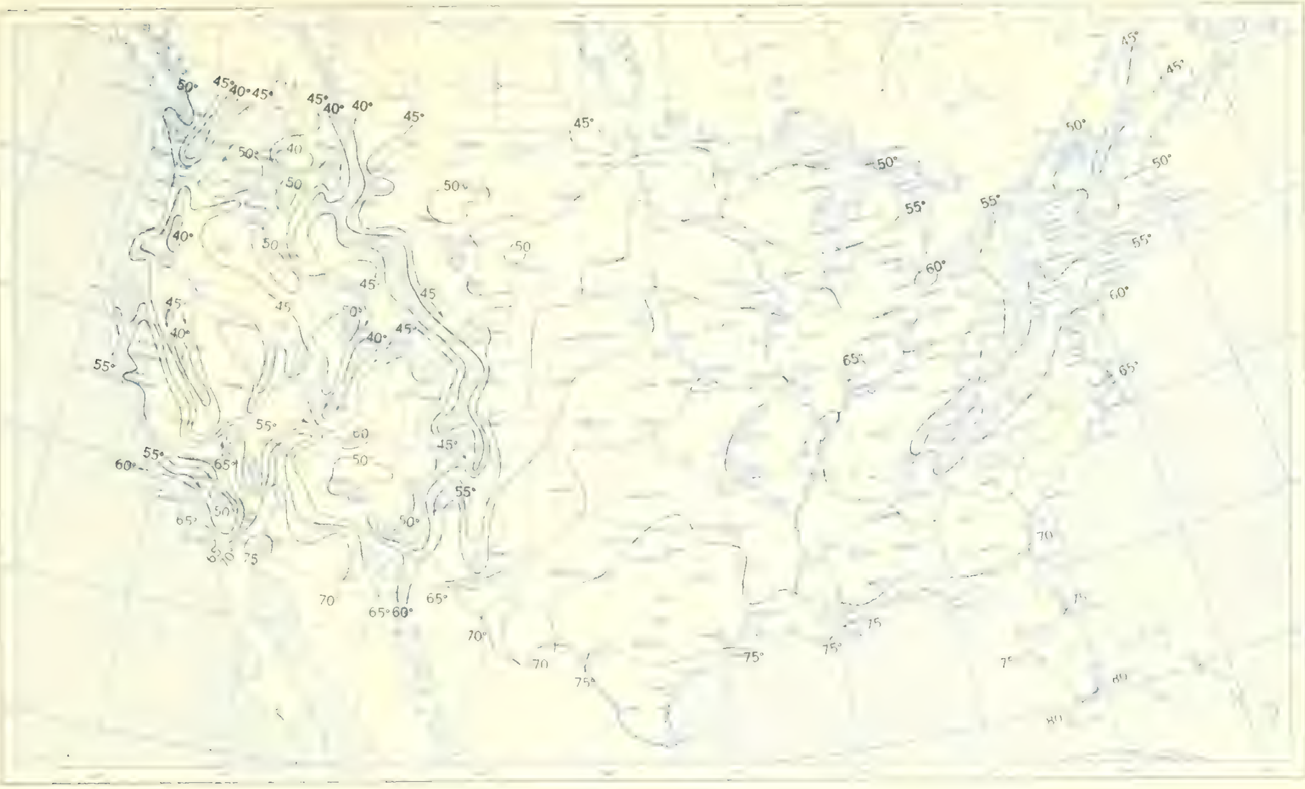
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued OCTOBER 1956

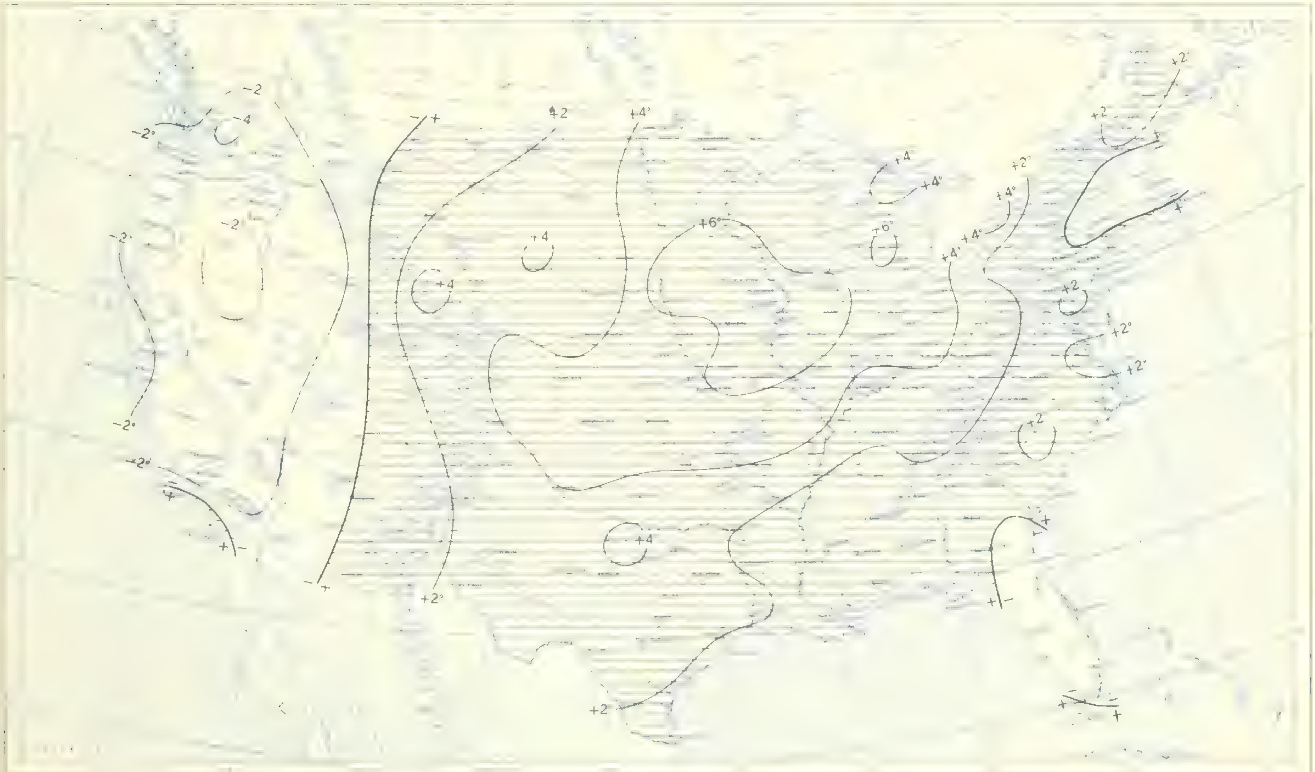
1956	Lander, Wyo.	Lake Charles, La.	Las Vegas, Nev.	Little Rock, Ark.	Los Angeles, Calif. (urban)	Los Angeles, Calif.	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Prosser 4 NE, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seattle-Tacoma, Wash.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
Oct. 1------	537	427	540	---	327	394	381	---	439	382	524	313	371	498	400	370	161	432	310	454	477	381	253	493	480	438	---	226	328	354	505	421	415	---	461	567	492	138
Oct. 2------	537	442	340	---	288	311	410	86	416	515	354	326	403	328	230	463	138	491	337	437	476	367	437	524	339	(210)	---	244	287	335	381	345	231	---	412	563	343	305
Oct. 3------	495	469	442	---	357	385	379	69	412	540	508	196	473	474	153	476	429	492	450	442	465	444	384	458	456	429	489	339	367	352	474	225	387	---	474	569	404	240
Oct. 4------	452	362	498	---	101	218	409	151	357	521	508	---	131	63	174	482	298	519	141	326	458	90	431	397	---	416	73	44	181	252	82	24	358	---	---	557	109	332
Oct. 5------	459	482	540	454	337	402	401	206	400	443	517	227	474	431	290	477	432	512	461	411	441	438	364	538	310	481	490	355	(336)	315	455	350	405	---	471	392	288	173
Oct. 6------	477	517	413	452	215	---	323	204	407	493	503	452	458	318	337	468	331	489	446	414	450	354	210	542	196	84	438	320	352	361	46	201	236	---	444	509	97	226
Oct. 7------	393	519	504	506	489	443	413	79	256	483	493	507	183	237	526	518	197	435	178	407	447	488	417	517	235	195	255	144	353	366	248	350	112	---	209	608	410	324
Average-------	479	460	468	---	302	359	388	133	384	482	487	337	356	336	301	465	284	481	332	413	459	366	357	496	336	(322)	349	239	(315)	334	313	274	306	---	412	538	306	248
Oct. 8------	382	553	492	494	485	479	409	151	262	512	514	504	453	430	497	480	392	503	---	357	409	508	416	504	328	447	462	346	149	348	454	523	379	---	456	602	473	295
Oct. 9------	414	547	492	450	451	470	403	60	212	352	480	450	422	438	461	438	281	513	394	353	430	515	404	502	446	224	450	316	158	336	477	471	319	---	441	578	432	256
Oct. 10------	414	527	461	435	419	449	386	54	113	484	498	461	445	452	474	461	392	496	302	215	403	484	366	515	464	427	445	268	342	68	473	442	318	---	---	380	427	339
Oct. 11------	335	501	501	433	282	354	144	57	83	297	506	415	445	432	448	410	400	448	426	106	384	402	220	407	392	337	461	346	61	81	463	368	380	---	438	---	444	291
Oct. 12------	457	400	485	379	422	464	338	---	235	447	395	402	416	271	438	445	272	456	395	327	417	447	333	361	503	199	464	277	52	209	392	388	222	---	373	533	427	309
Oct. 13------	445	475	489	407	452	443	262	66	299	84	279	440	422	303	463	221	206	494	362	383	365	492	235	371	(499)	380	423	270	173	241	394	388	251	---	423	559	414	195
Oct. 14------	461	475	490	351	448	432	70	94	371	323	425	397	367	339	444	85	301	485	297	257	430	482	385	415	(478)	331	391	271	56	127	372	333	315	---	364	593	413	214
Average-------	415	497	487	421	423	442	287	80	225	357	442	439	424	381	461	363	321	485	363	285	405	476	337	439	(444)	335	442	299	142	201	432	416	312	---	416	541	433	271
Oct. 15------	448	509	495	367	469	412	241	161	(359)	178	450	427	352	323	465	357	269	481	344	56	385	491	315	230	489	374	320	280	78	62	380	70	290	---	323	583	410	311
Oct. 16------	451	409	495	382	383	330	305	104	291	518	491	426	355	255	419	468	222	476	674	111	406	473	351	469	425	282	359	288	163	89	389	---	241	---	358	556	310	191
Oct. 17------	448	476	498	329	364	286	311	99	282	534	301	---	310	223	290	367	211	468	323	55	401	402	321	451	455	405	308	256	25	127	367	404	291	---	264	---	214	250
Oct. 18------	384	438	455	302	202	153	299	169	209	526	215	190	46	50	193	157	373	465	174	205	391	289	277	160	382	---	34	153	65	102	293	506	293	---	31	553	220	235
Oct. 19------	362	---	496	251	350	295	260	166	313	512	485	201	393	383	254	323	368	---	550	242	295	423	275	467	---	---	447	323	46	233	321	445	353	486	421	527	279	238
Oct. 20------	357	---	512	111	460	425	(205)	35	297	344	369	222	398	222	261	423	309	461	349	71	390	478	296	388	449	---	394	288	38	79	140	237	138	456	383	431	206	80
Oct. 21------	283	---	497	---	310	258	202	154	285	289	370	82	375	215	186	522	149	459	316	356	369	265	338	511	459	---	403	243	269	307	285	281	211	462	289	514	168	240
Average-------	390	458	493	291	363	308	(261)	127	(291)	414	383	258	318	239	295	374	272	468	390	157	377	403	310	382	443	---	324	261	98	143	311	324	260	---	296	527	258	221
Oct. 22------	346	---	423	354	243	211	247	143	133	322	384	198	238	49	93	554	---	434	185	200	388	247	323	498	422	---	145	126	(63)	216	70	243	189	479	134	353	63	50
Oct. 23------	254	---	369	301	261	304	325	49	233	477	367	289	134	146	178	529	---	323	24	152	249	329	323	490	---	---	178	91	155	42	158	475	126	317	181	509	198	162
Oct. 24------	7	---	523	304	413	422	257	160	125	381	377	355	266	172	396	517	---	440	388	147	91	464	178	371	452	---	346	303	35	159	338	369	332	441	306	535	82	141
Oct. 25------	286	---	505	255	441	424	103	141	85	465	394	275	378	353	206	547	---	452	360	149	344	460	34	280	442	---	403	299	193	124	397	438	319	504	352	568	175	33
Oct. 26------	169	---	506	335	409	396	258	23	190	326	392	153	120	118	79	545	(319)	437	173	214	190	439	270	480	434	---	161	123	149	86	54	347	210	482	143	526	80	167
Oct. 27------	271	---	506	337	322	313	263	26	251	484	374	367	314	173	418	520	---	431	313	47	272	429	140	395	428	---	212	76	43	36	120	484	291	482	201	361	51	113
Oct. 28------	237	---	166	326	226	263	269	78	244	417	260	347	320	336	394	104	---	387	332	254	276	244	235	297	431	---	247	270	144	87	120	452	238	391	216	568	300	122
Average-------	224	---	428	316	331	333	246	89	180	410	364	284	253	193	252	474	---	415	254	166	259	373	215	401	435	---	242	184	(112)	107	180	401	244	442	219	489	136	113
Oct. 29------	126	---	---	282	399	398	253	114	53	329	279	336	357	308	403	139	240	397	320	132	94	440	331	314	428	---	385	266	46	197	322	449	258	237	343	517	116	189
Oct. 30------	307	---	---	162	381	388	178	149	109	492	383	193	308	183	272	183	270	425	322	128	(359)	422	52	351	192	---	268	243	73	170	174	449	228	475	235	544	41	62
Oct. 31------	225	---	339	180	356	349	248	102	178	475	386	133	265	27	98	284	206	409	292	277	314	362	34	463	418	---	99	47	102	143	67	466	193	468	106	512	119	145
Nov. 1------	266	---	418	317	392	402	172	120	46	385	367	331	126	57	272	266	51	436	77	222	164	421	35	---	414	---	65	154	119	102	237	414	129	468	---	481	78	31
Nov. 2------	230	---	393	95	380	374	39	78	198	(459)	314	332	30	68	342	220	120	419	159	186	56	423	115	---	402	49	81	30	90	226	187	401	24	468	70	521	73	32
Nov. 3------	106	---	415	64	365	389	69	45	138	403	313	275	65	81	360	148	90	422	147	131	151	436	30	81	394	31	145	83	230	233	61	388	176	474	123	---	71	40
Nov. 4------	201	---	400	215	388	381	27	132	43	445	292	286	313	315	368	19	245	416	286	52	269	429	30	58	406	87	349	148	97	41	147	390	87	475	311	372	120	36
Average-------	209	---	393	188	380	383	141	106	109	(427)	334	269	209	148	302	180	175	418	229	161	(201)	419	89	253	379	166	199	139	108	159	171	422	156	438	198	491	88	76

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

Chart I. A. Average Temperature (°F.) at Surface, October 1956.

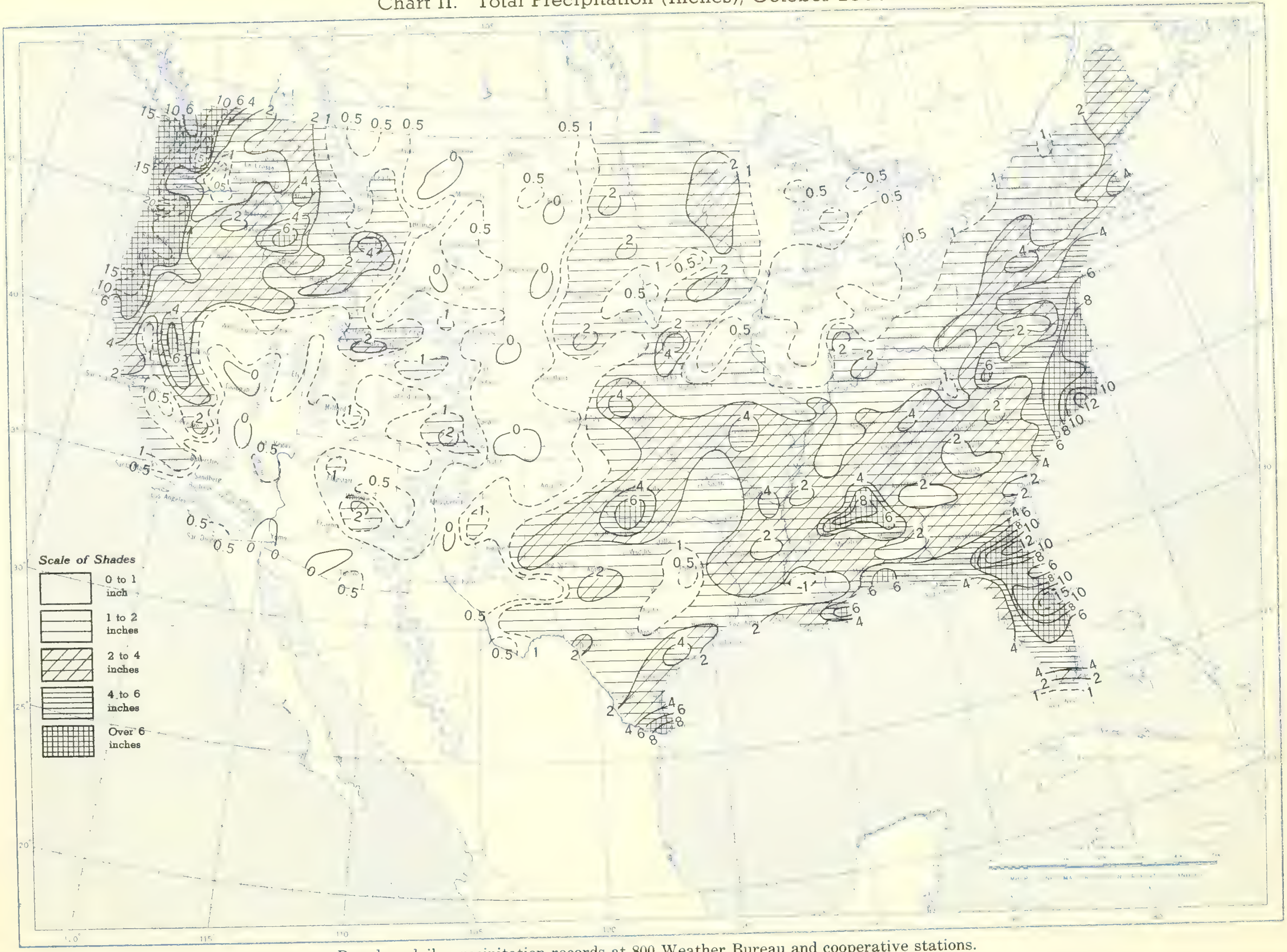


B. Departure of Average Temperature from Normal (°F.), October 1956.



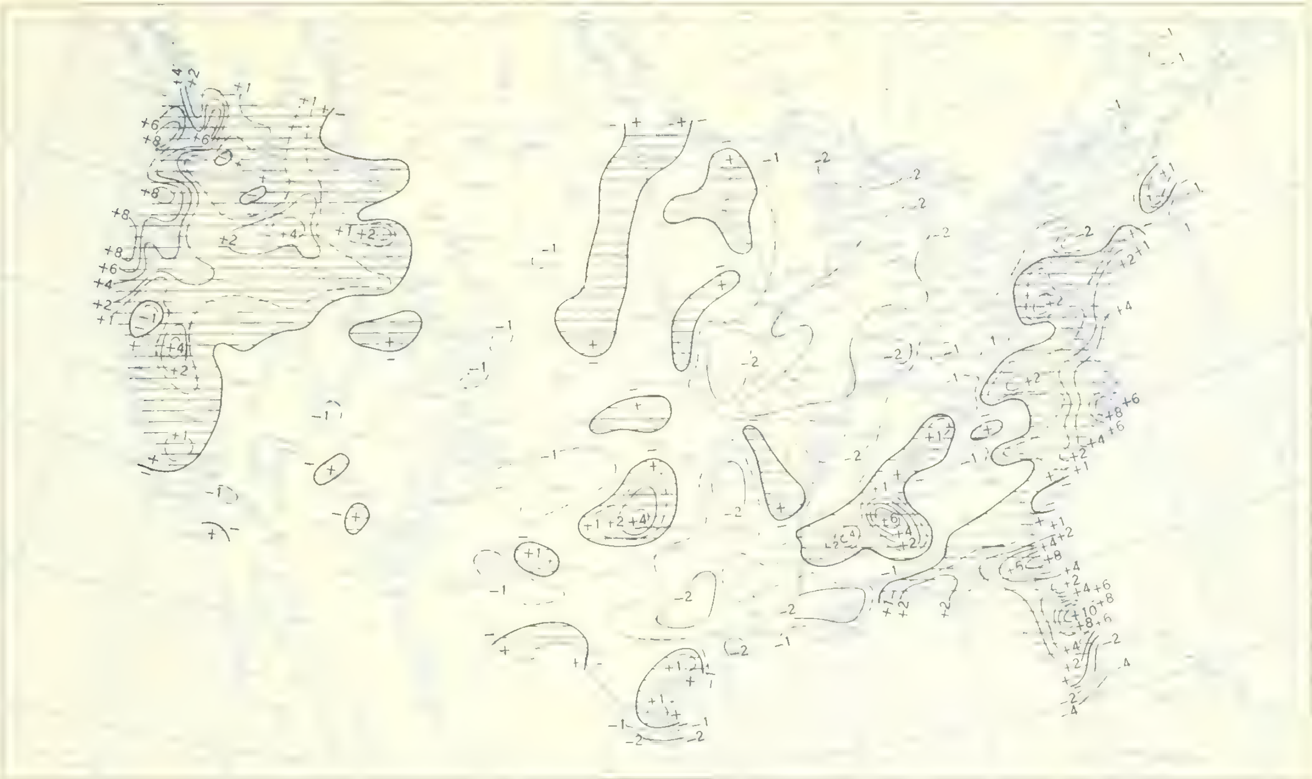
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), October 1956.

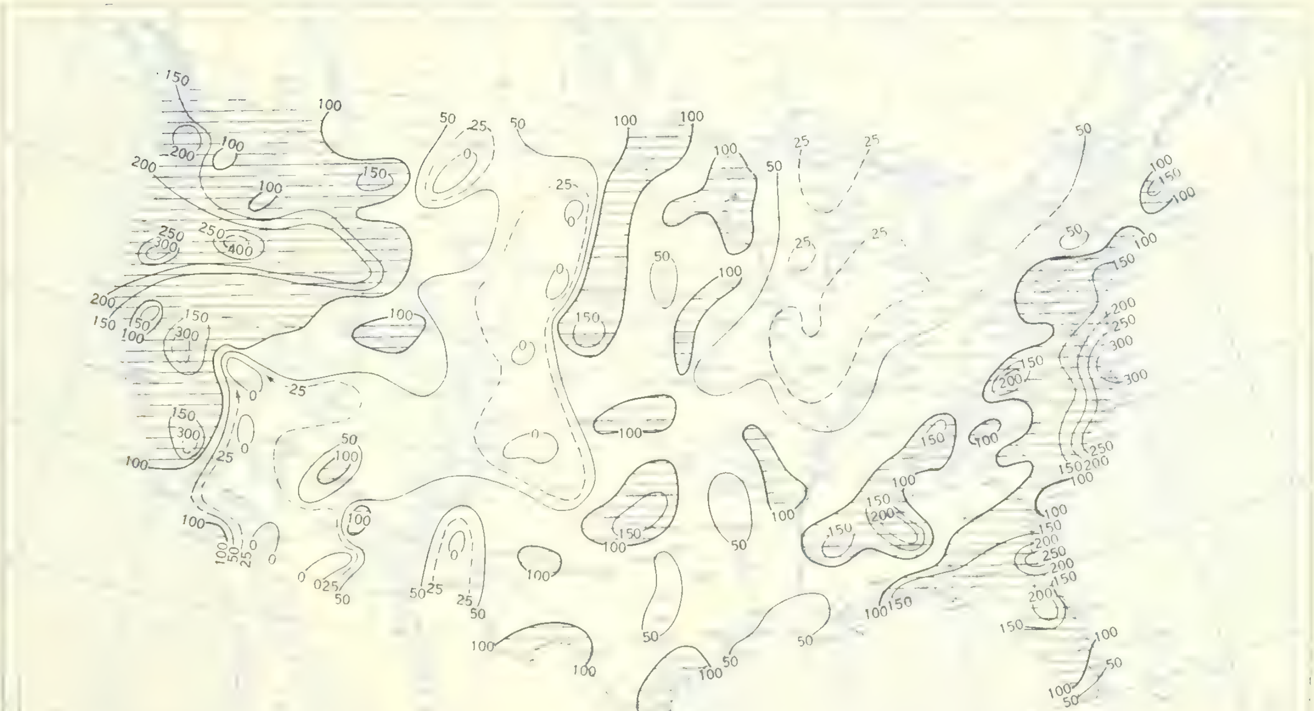


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), October 1956.

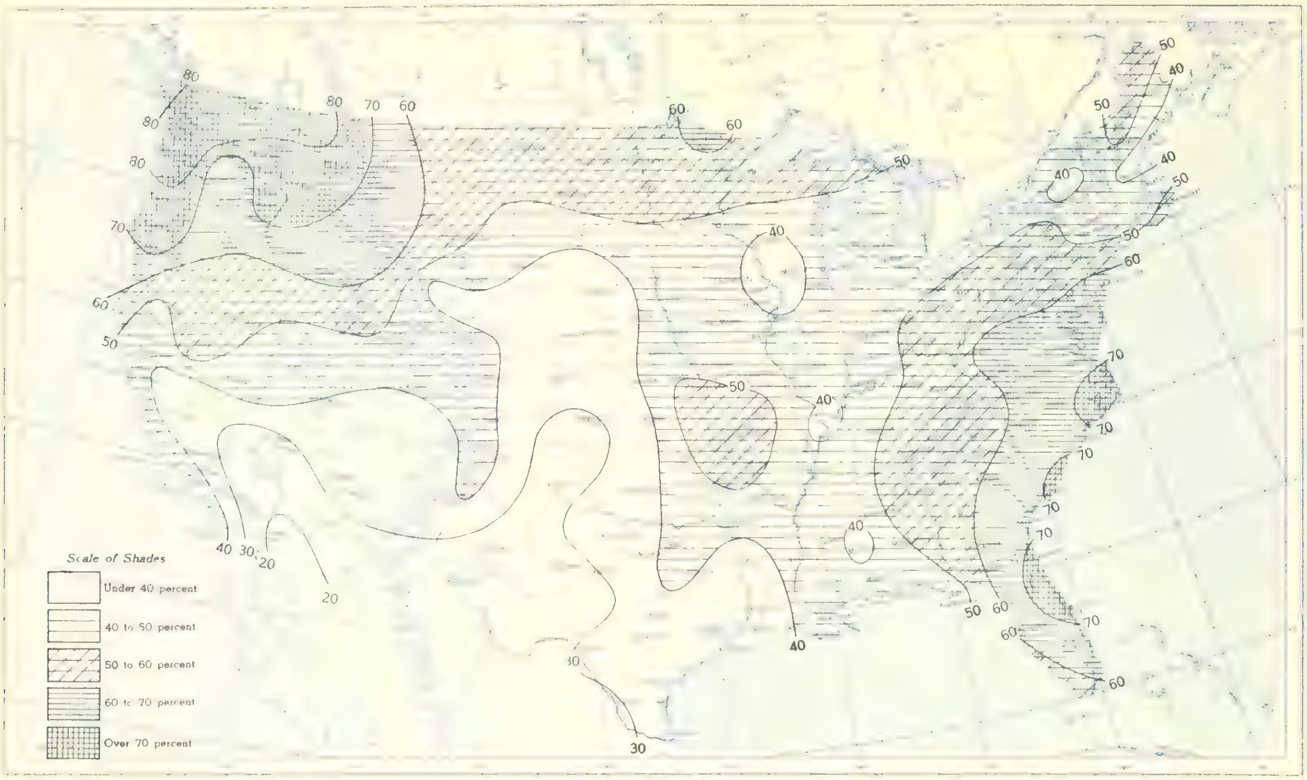


B. Percentage of Normal Precipitation, October 1956.

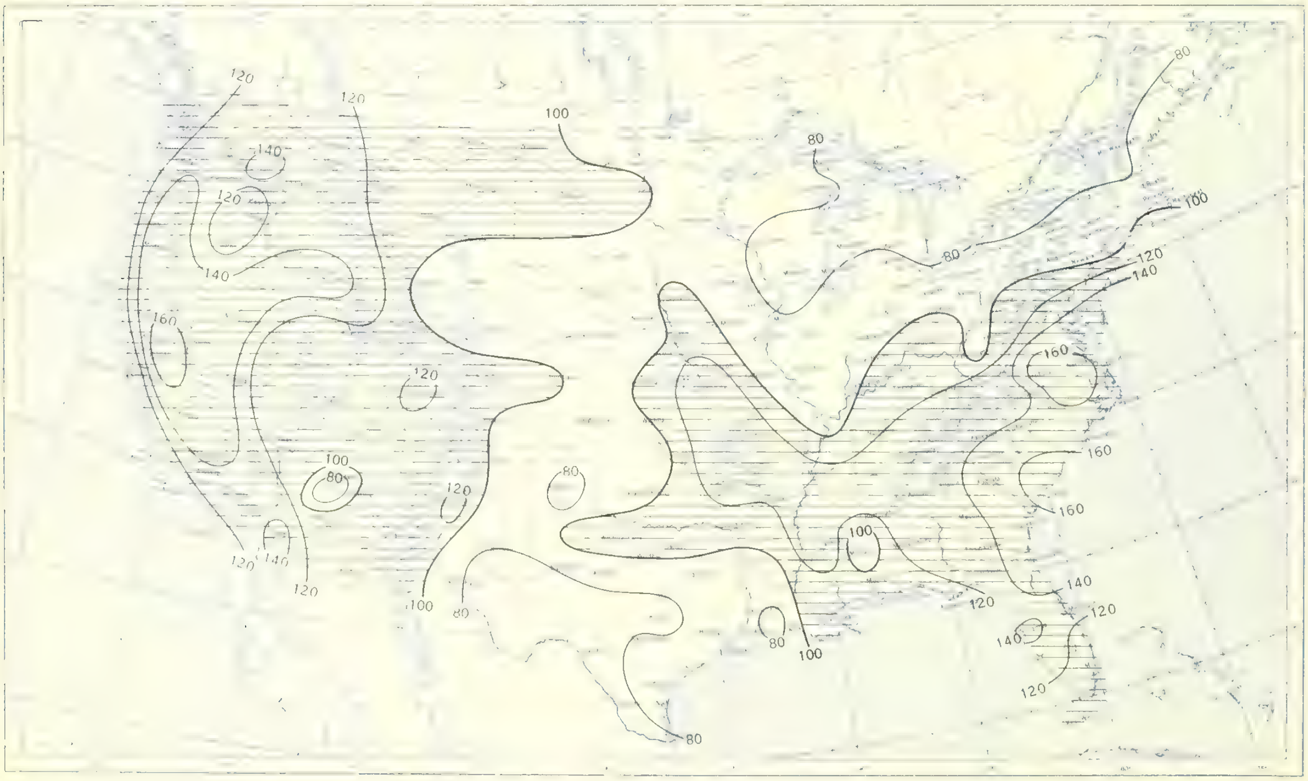


Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, October 1956.

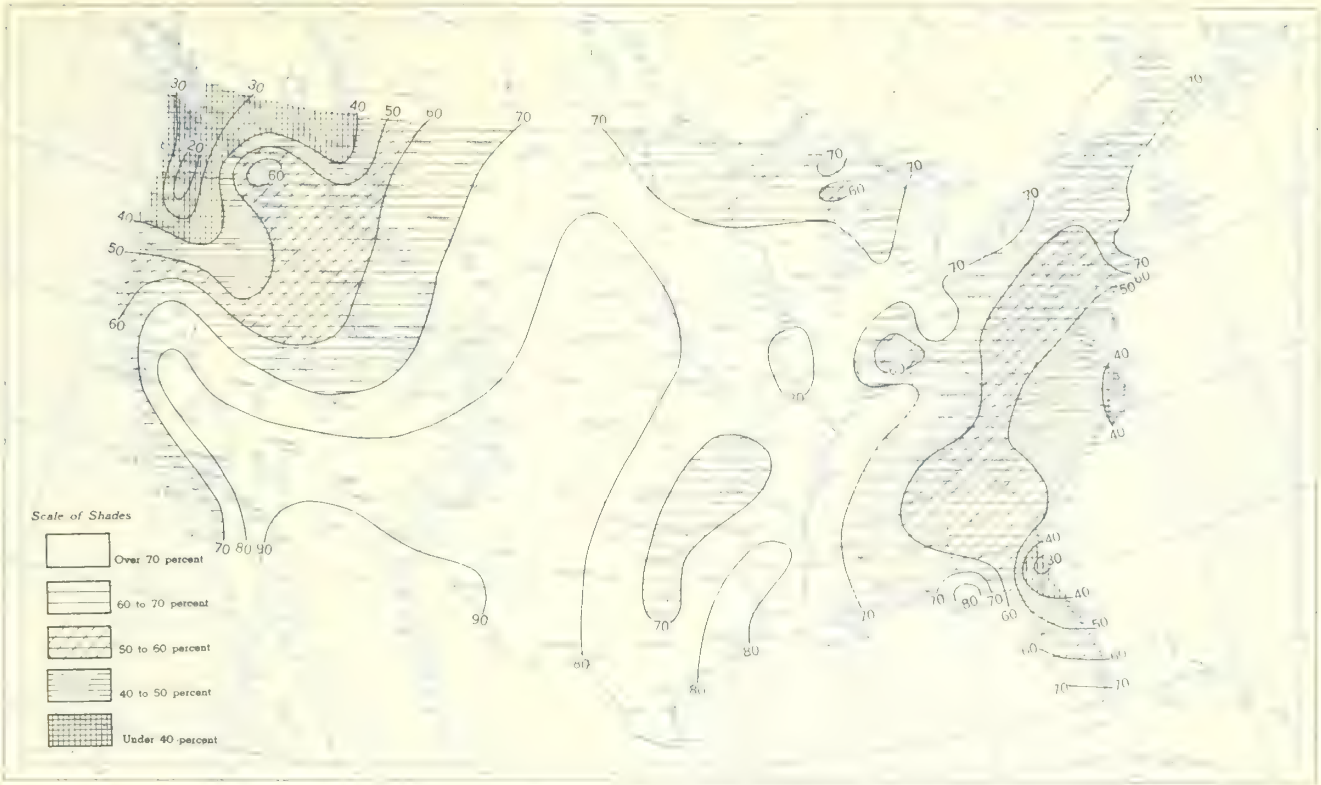


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, October 1956.

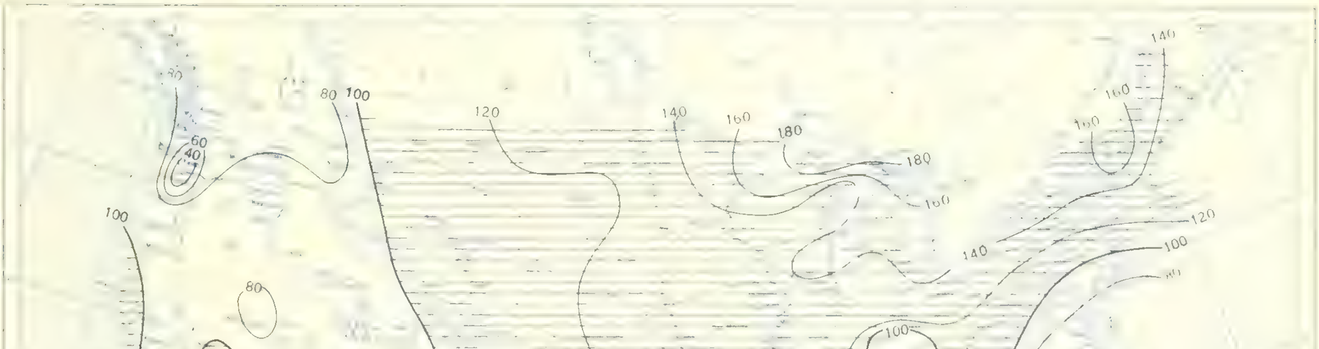


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, October 1956.



B. Percentage of Normal Sunshine, October 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, October 1956. Inset: Percentage of Mean Daily Solar Radiation, October 1956. (Mean based on period 1951-55.)

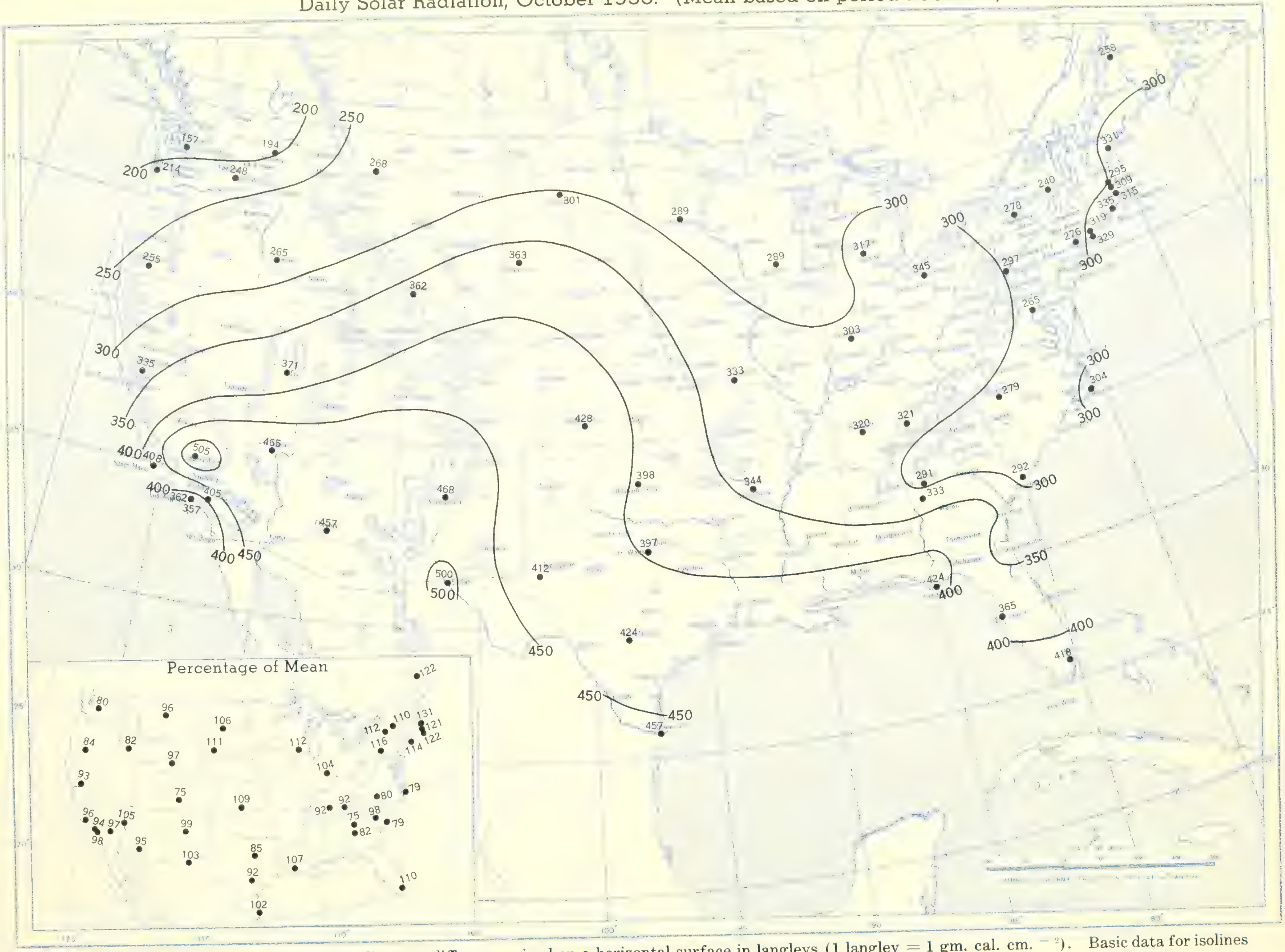
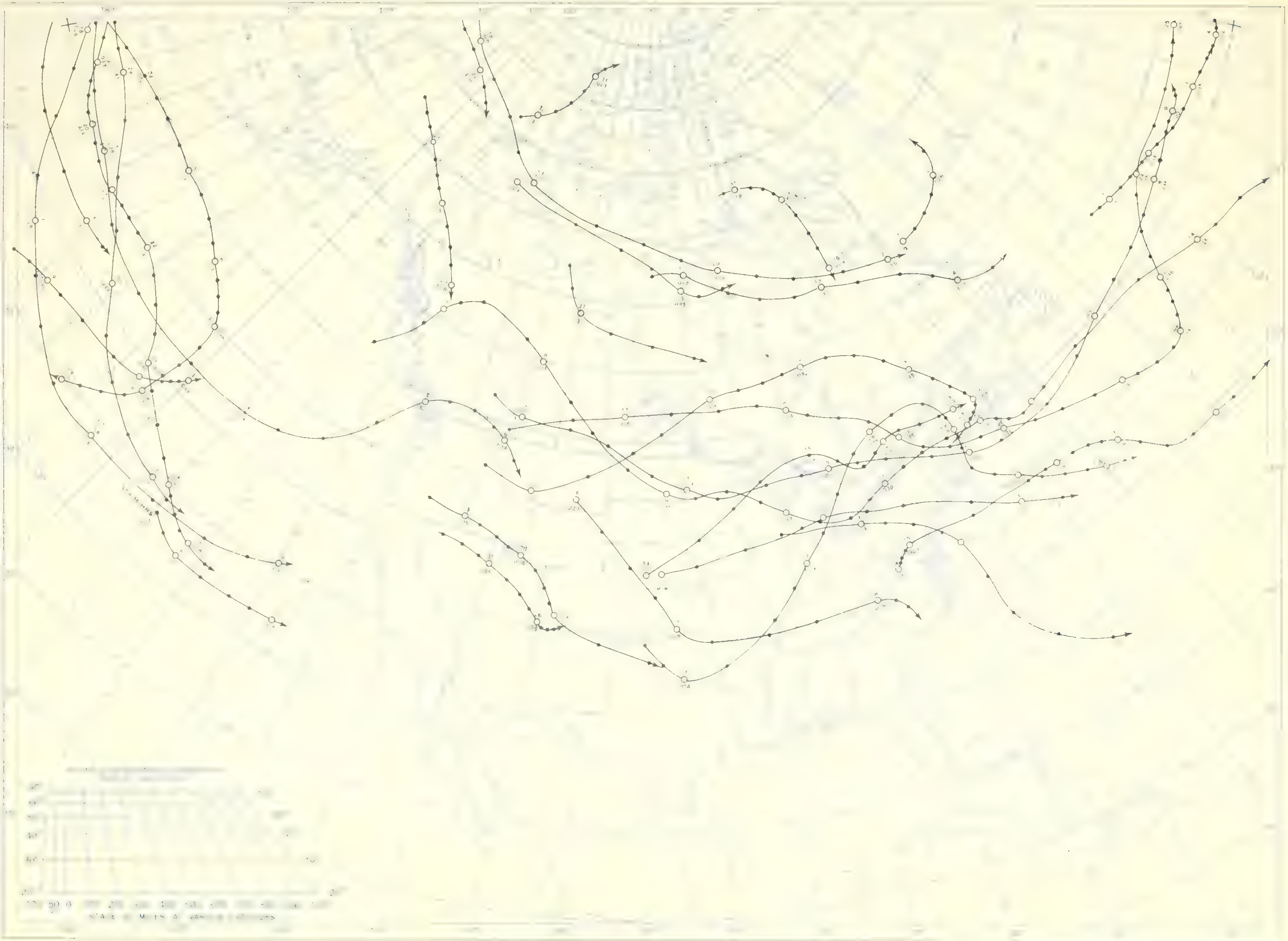


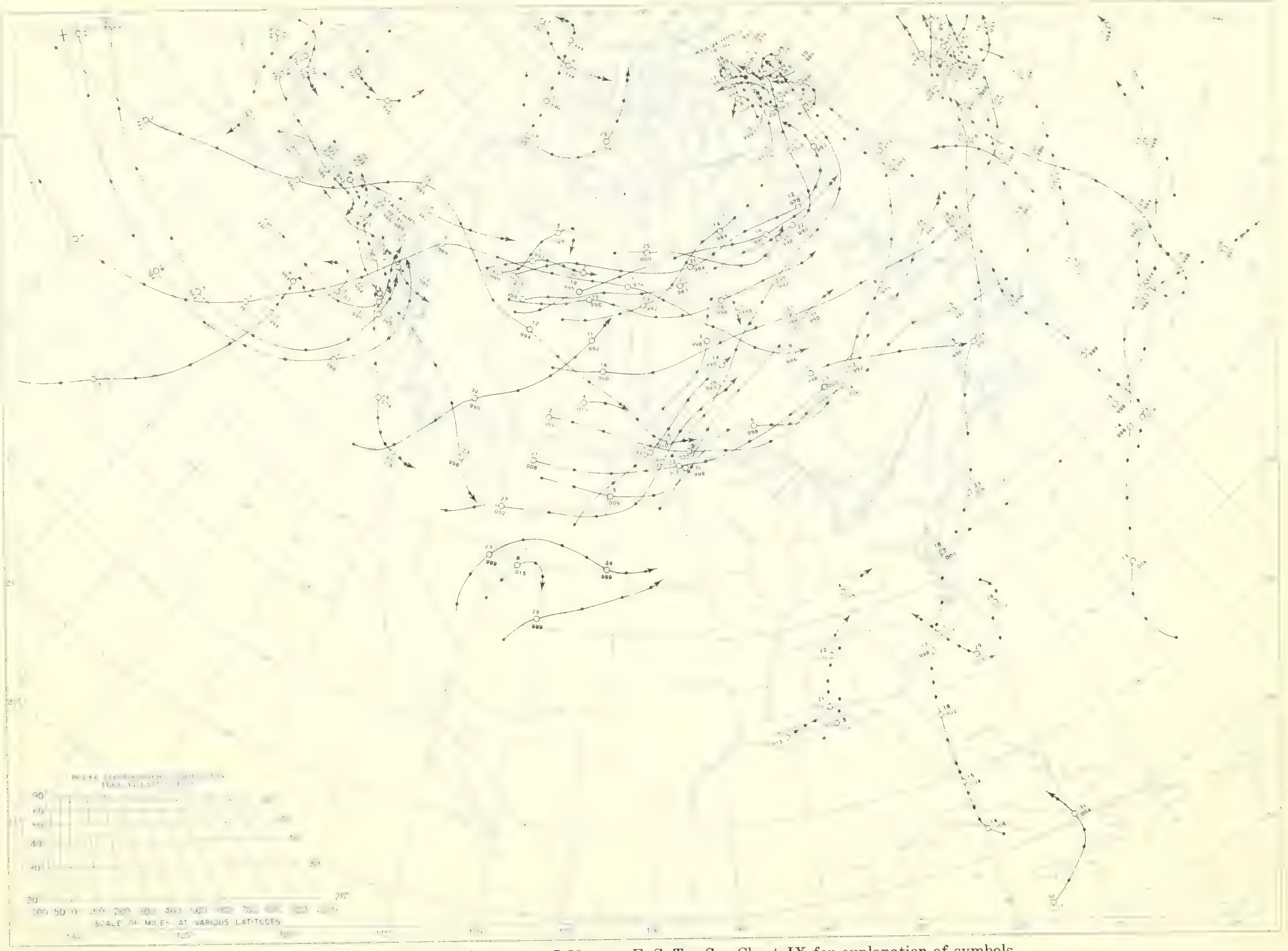
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm. $^{-2}$). Basic data for isolines are shown on chart. Further estimates are obtained from supplementary data for which limits of accuracy are wider than for those data shown.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, October 1956.



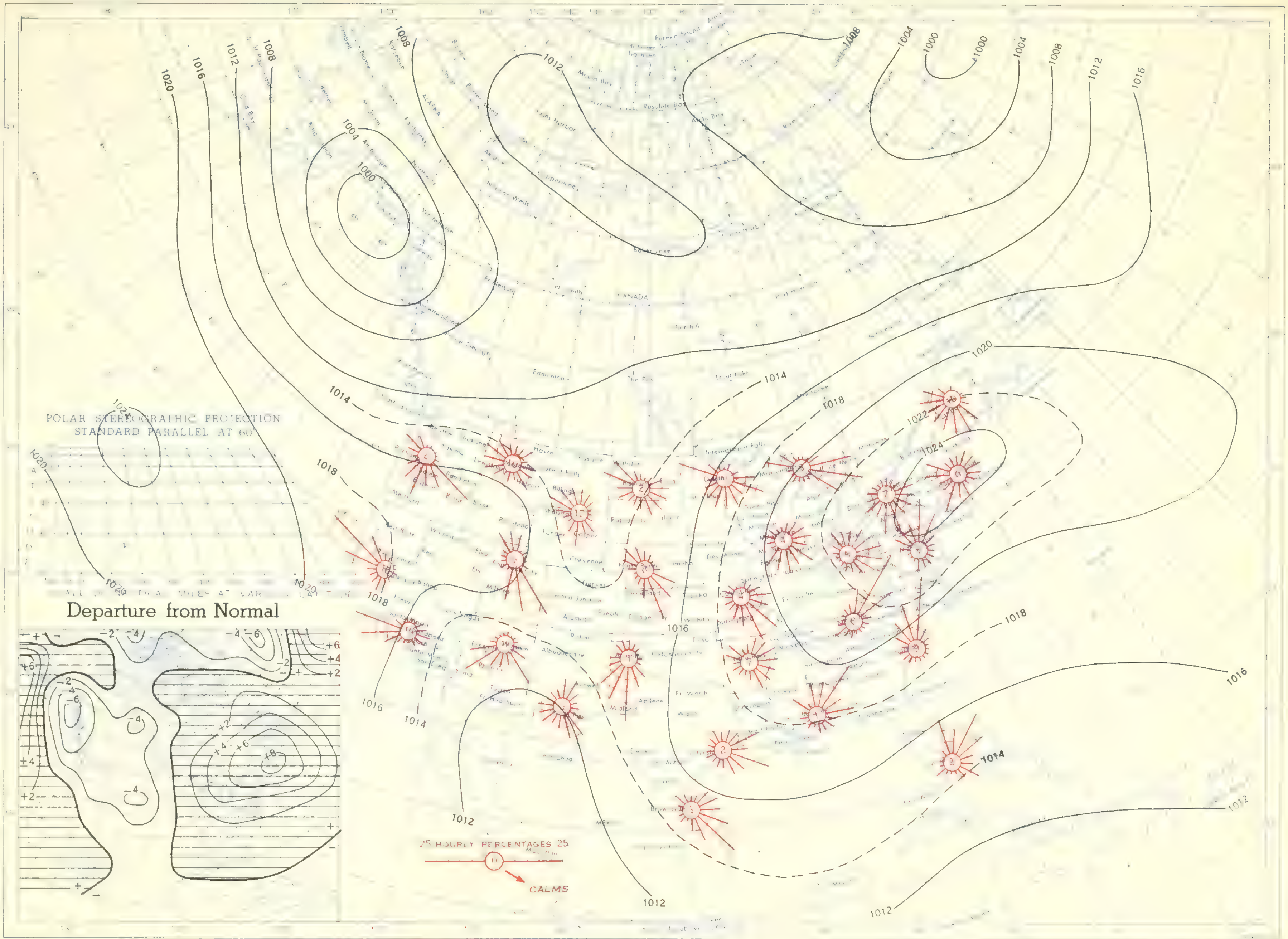
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, October 1956.



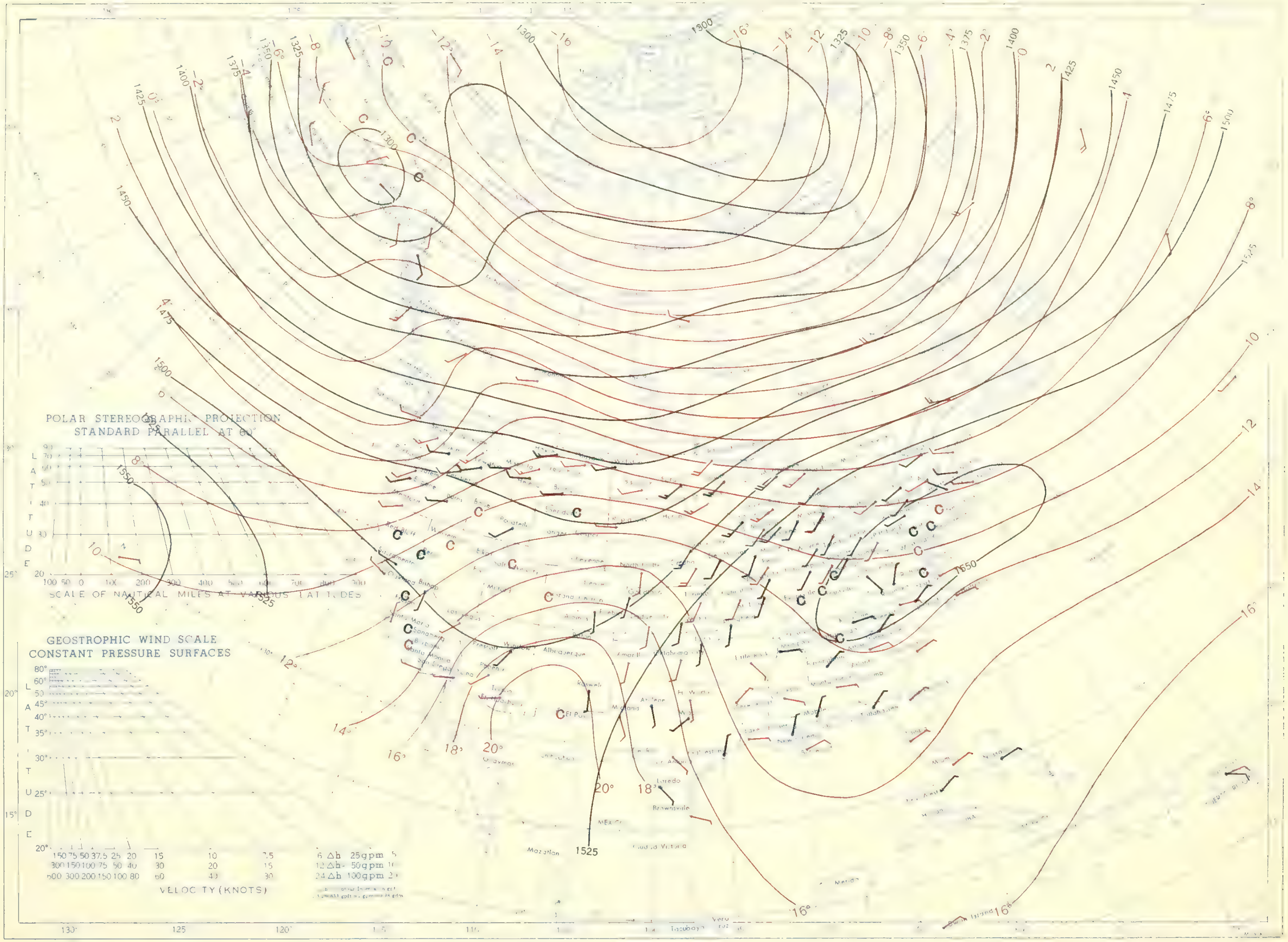
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Pressure (mb.) and Surface Windroses, October 1956. Inset: Departure of Average Pressure (mb.) from Normal, October 1956.



Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

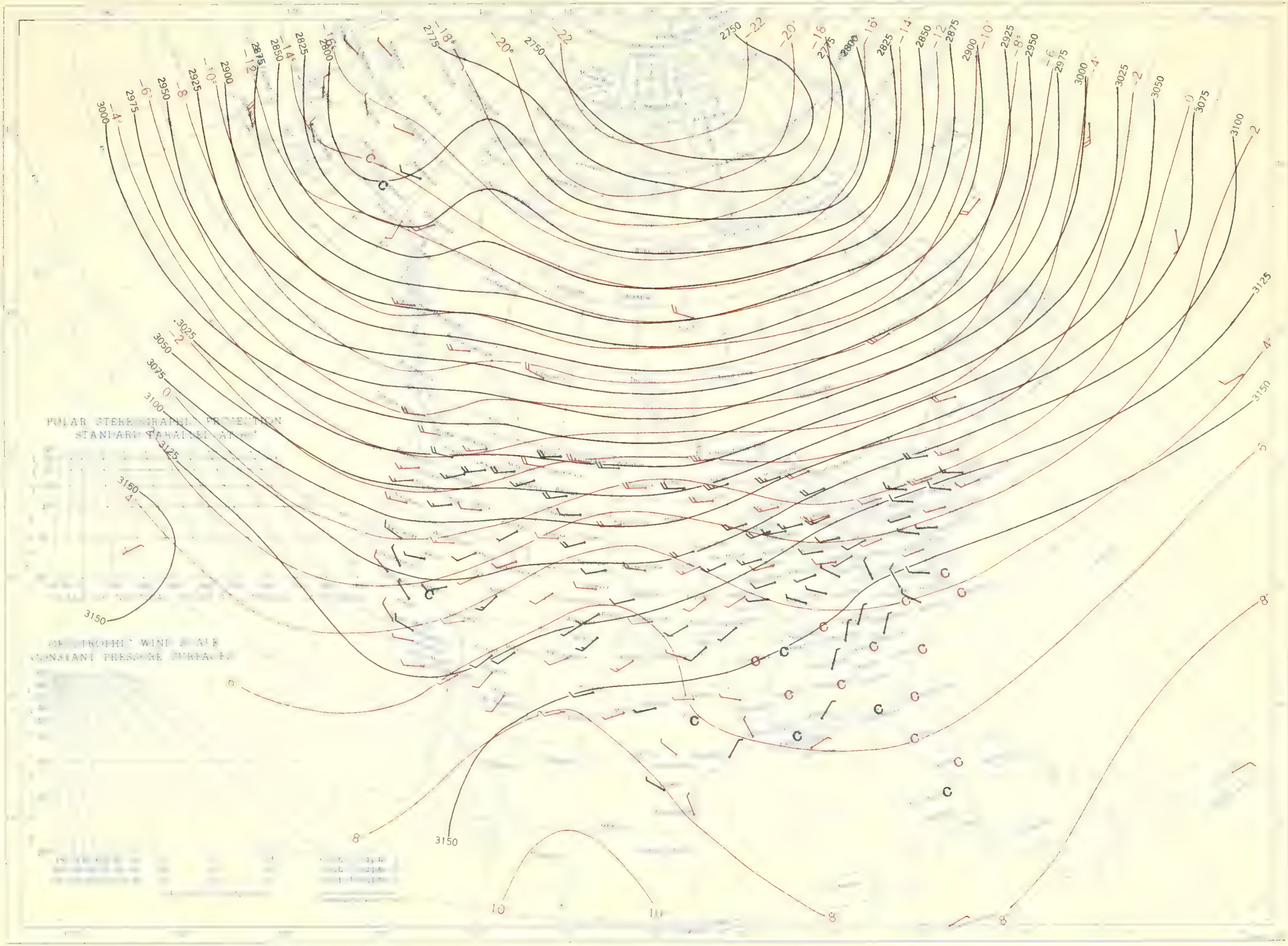
Chart XII. 850-mb. Surface, 0300 GMT, October 1956. Average Height and Temperature, and Resultant Winds.



Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and

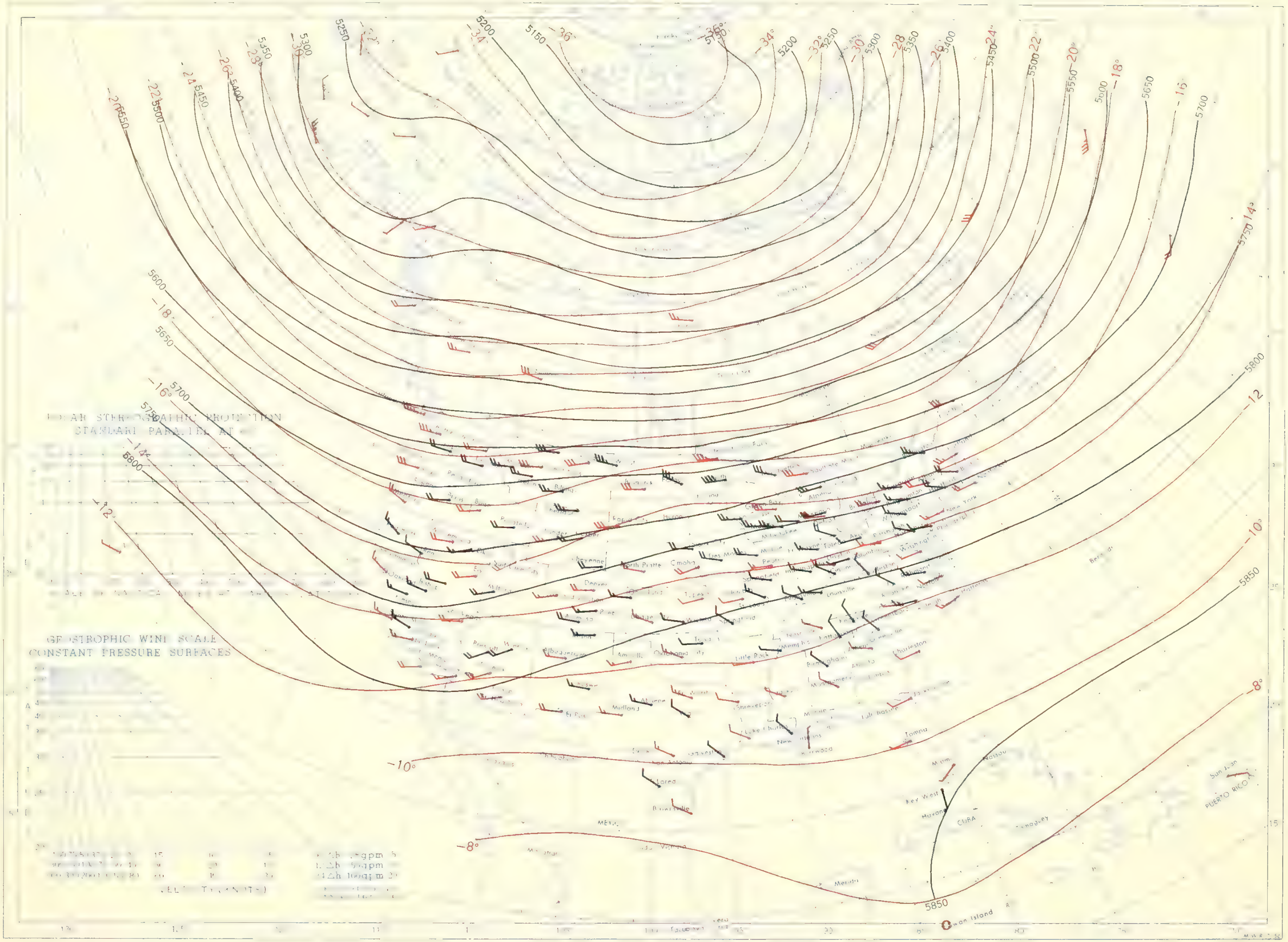
Chart XIII 700 mb. Surface, 0300 GMT, October 1956 Average Height and Temperature, and Resultant Winds

Chart XIII. 700-mb. Surface, 0300 GMT, October 1956. Average Height and Temperature, and Resultant Winds.



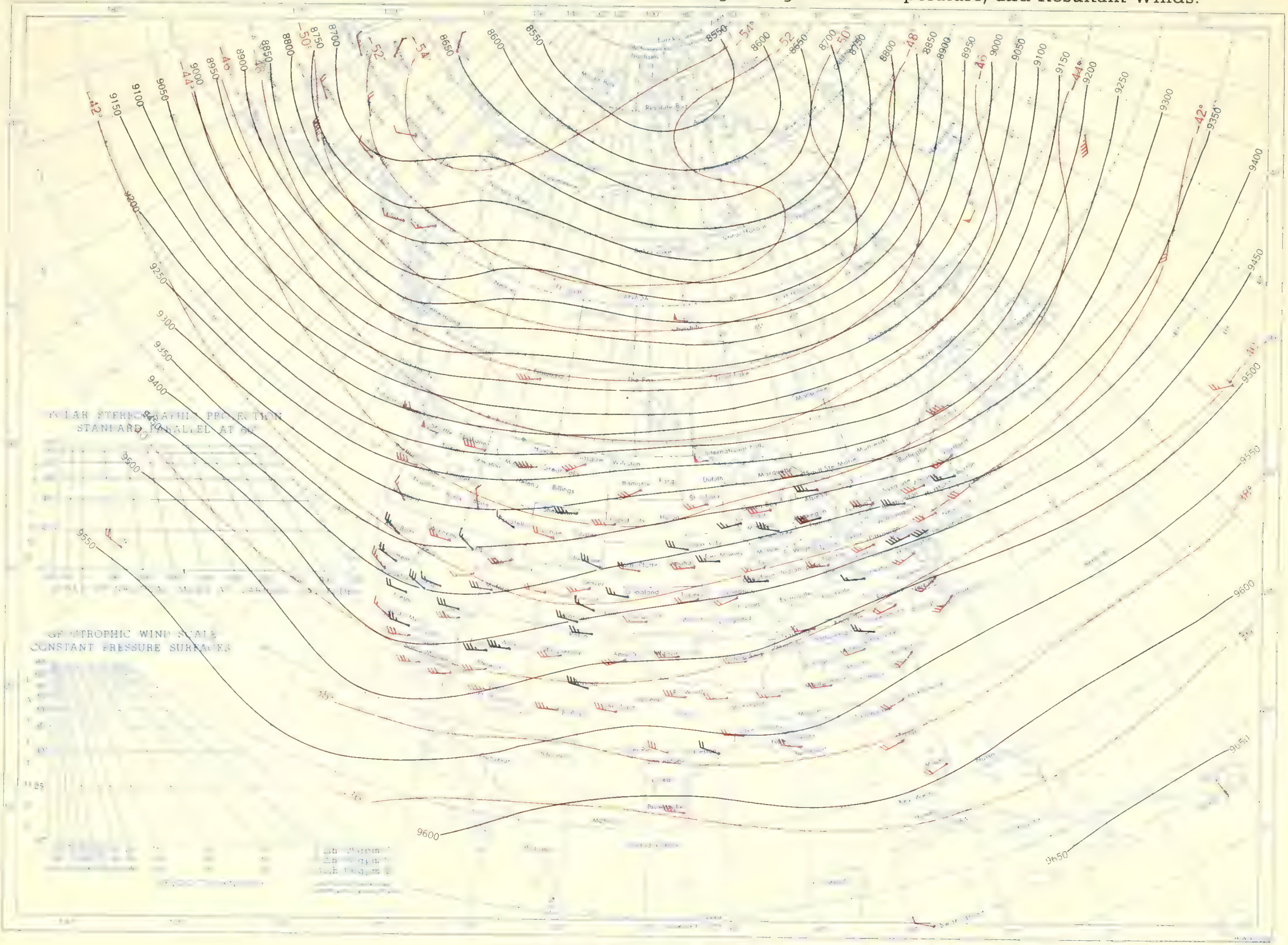
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 0300 GMT, October 1956. Average Height and Temperature, and Resultant Winds.



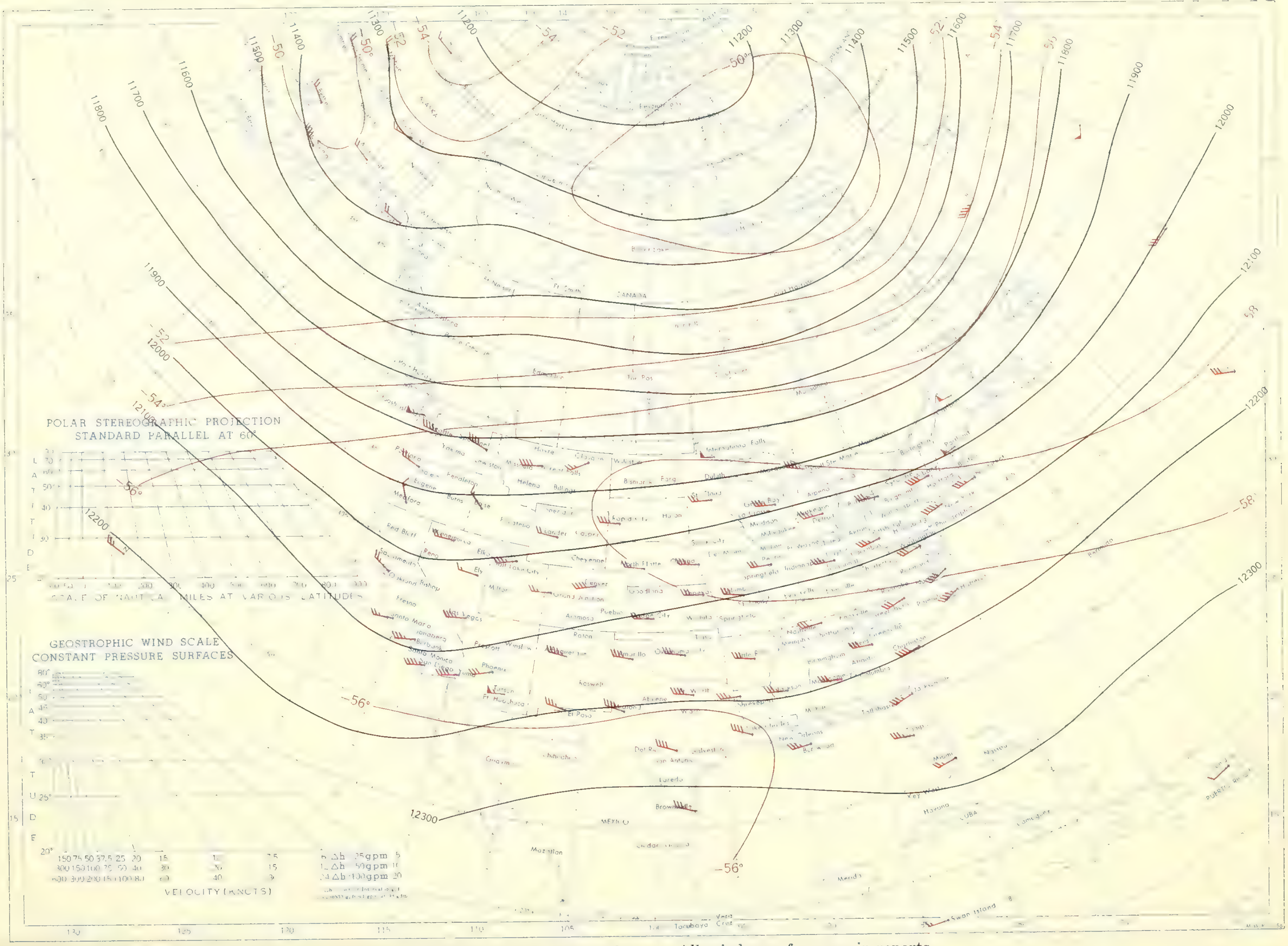
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 0300 GMT, October 1956. Average Height and Temperature, and Resultant Winds.



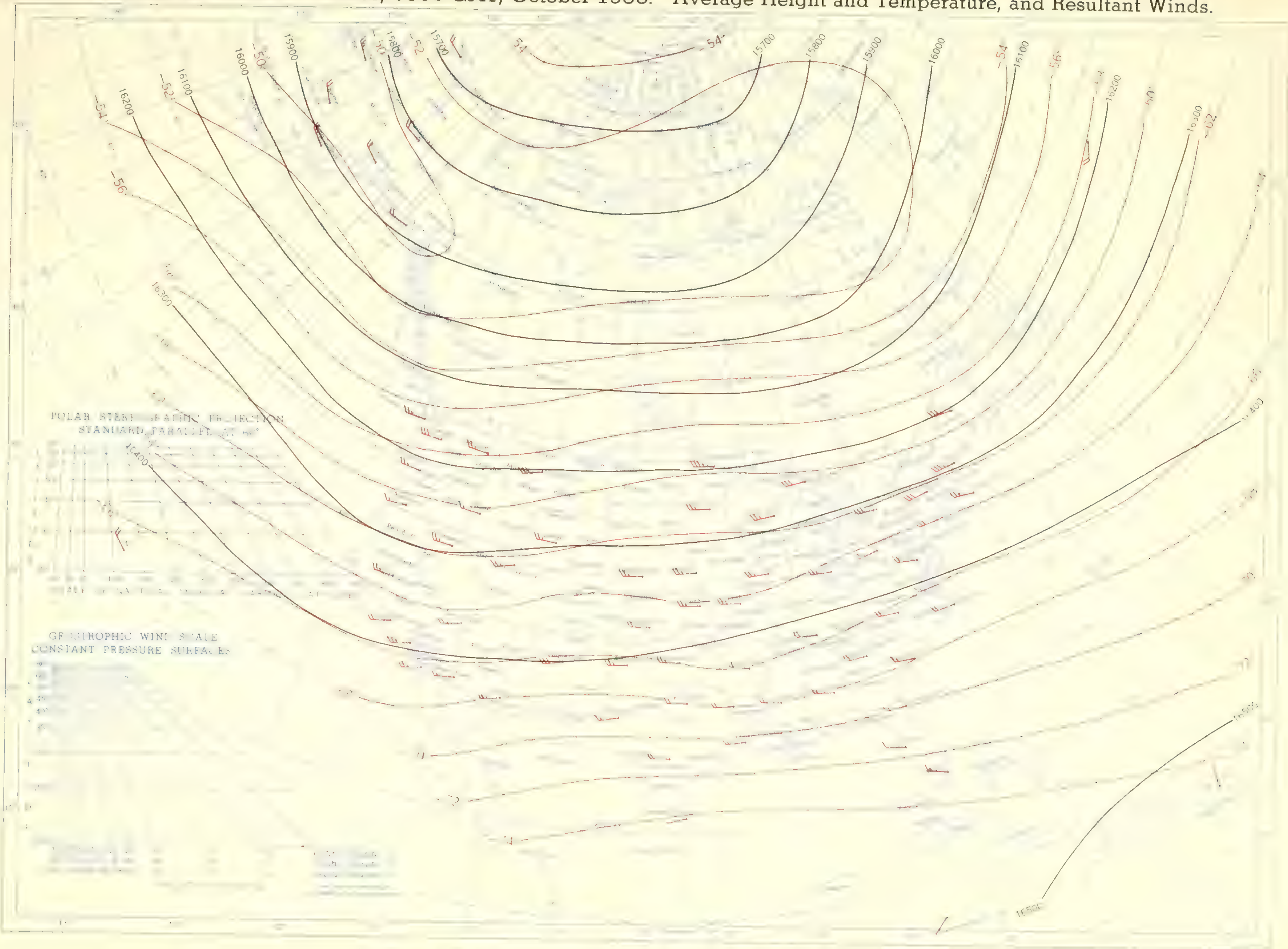
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 0300 GMT, October 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

Chart XVII. 100-mb. Surface, 0300 GMT, October 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

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CLIMATOLOGICAL DATA

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NOVEMBER 1956

Volume 7 No. 11

ASHEVILLE: 1957

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NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 11

NOVEMBER 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

November was relatively cold and dry in most of the Country. Temperatures, fluctuating widely during the month, were featured by record-breaking cold snaps for so early in the season in the Far West at the beginning of the month, in the East and South during the second week, a damaging freeze in Florida as the month ended, and a late season heat wave in the Far Southwest early in the second week.

High pressure (highest average for November on record at several stations) was the controlling weather factor in the Far West during much of the month, particularly during the last week when a strong temperature inversion kept temperatures above freezing at higher elevations while freezing occurred in the valleys which became shrouded with fog and smoke.

Precipitation was conspicuous by its absence in the southwestern Great Plains and Far Southwest where severe drought persisted with occasional duststorms, and forest fires burned over large areas in southern California.

Precipitation was well above normal in the northern Great Plains, much of which was in the form of snow. A blizzard occurred in parts of the northwestern Great Plains on the 3d and 4th.

TEMPERATURE.--Temperatures, averaging within 4° of normal, were above along the central and southern California coast and along the Canadian Border east of the Continental Divide and below elsewhere.

In the Far West temperatures during the first few days were much below seasonable levels, and freezing extended to the Mexican Border in places. Although this freeze was among the earliest on record in the Far Southwest, it caused only slight damage to truck locally, and improved cotton picking conditions.

Temperatures rose rapidly to unseasonably high levels in the Far Southwest following the 5-day cold snap there. San Diego, Calif., recorded its highest temperature, 96°, on record for so late in the season on the 9th, and at four other stations in southern California temperatures either on the 9th or 10th reached 100° for the month's highest.

By the end of the first decade cold air had overspread all areas east of the Rockies and temperatures dropped to freezing or below in south-central and southeastern Texas, almost to the Gulf coast from Louisiana eastward, and even in some colder locations of central Florida with scattered frost occurring in the Everglades. Jacksonville and Miami, Fla., recorded their lowest November temperatures on record, 31° and 49°, respectively, on the 10th. On the 11th record lows for so early in the season in the Northeast included 8° and 12° at Putnam and Hartford, Conn., and 16° at Providence, R. I. In the South subfreezing temperatures damaged tender truck in scattered localities but overall losses were minor.

Freezing occurred in northern Florida on the 23d, and in much of the Peninsula on the 29th and 30th. The latter freeze which continued through December 3, caused considerable damage to unprotected vegetables and slight damage to citrus fruit.

The month's lowest temperature, -30°, was recorded at West Yellowstone, Mont., on the 19th.

PRECIPITATION.--In most areas west of the Continental Divide, the southwestern Great Plains, parts of the Ohio Valley, and in the Gulf and Atlantic coastal sections from southern Mississippi to eastern North Carolina, precipitation for the month was less than 50 percent of normal. Totals were less than one-half inch except in the Ohio Valley where they exceeded an inch.

The month was among the driest Novembers on record in the southwestern Great Plains and west of the Continental Divide. San Francisco, Calif., received only 0.06 inch, Burns, Oreg., 0.23, Yuma, Ariz., none, Del Rio and Amarillo, Tex., 0.02 inch and a trace, respectively. In the southwestern Plains fall-planted grains were in poor condition and water supplies in many sections remained critically low.

In the remaining sections of the central and lower Great Plains rainfall of 1 to over 2 inches early in the month replenished topsoil moisture sufficiently to permit growth of grains and pastures, and marketing of livestock was sharply reduced as hopes for winter feed were revived. Subsoil moisture continued short.

In Florida and adjacent coastal areas fall crops and pastures were in only fair condition due to the cold, dry weather.

In the northern Plains snowfall and rain furnished as much as 200 percent of the normal November precipitation, and topsoil moisture generally was adequate.

SNOWFALL.--Snowfall was well above normal in most northern areas between the Rocky and Appalachian Mountains. The heaviest fall in the northwestern Great Plains occurred on the 2d and 3d when northwestern Kansas received 6 to 8 inches, the Black Hills of South Dakota 2 to 4 feet, eastern Wyoming up to a foot, and 1 to 8 inches covered most of Colorado.

During the week ending the 19th heavy snows fell in many sections from the northern Rockies eastward. Up to a foot fell in Minnesota and Wisconsin, 3 inches in northern Pennsylvania, and 6 inches in the Hudson Valley early in the week, while New England received 1 to 6 inches during its first general moderate to heavy snowstorm of the season.

A Thanksgiving Day storm brought heavy snow to the Great Lakes region with communities along the eastern shores of Lakes Erie and Ontario reporting falls of 1 to 2 feet from Erie, Pa., to western New York.

DESTRUCTIVE STORMS.--Heavy rains and flooding in southeastern Pennsylvania and southern Maryland on the 1st and 2d were responsible for losses estimated in excess of $500,000.

High tides along the east coast of Florida during the first week caused damage estimated at more than $1,000,000.

On the 18th and 19th high winds in southern California damaged property and citrus groves, and helped spread a fire which burned over 44,000 acres of brush and timberland before being controlled. The fire caused 11 deaths, many injuries, and damage in the millions of dollars.

Probably the month's worst outbreak of storms occurred in New England on the 21st and 22d when cold front thunderstorms and tornadoes was responsible for losses estimated at well over $1,000,000.

Snowstorms with high winds in northern areas on several occasions caused several thousand dollars damage.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

NOVEMBER 1956

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Chatom	86	3	Valley Head 3S	11	23	Paint Rock	4.11	Coffee Springs 2NW	T
Arizona	Bouse	92	9	Ganado	-6	2	Willcox	.38	160 Stations	.00
Arkansas	3 Stations	85	3+	Mount Magazine	10	29	Louann 2SE	8.91	Marshall	2.10
California	4 Stations	100	9+	White Mountain 2	-9	20	Gasquet RS	3.25	326 Stations	.00
Colorado	Eversoll Ranch	82	11	Eagle CAA AP	-22	21	Akron CAA AP	3.20	Paradox	T
Connecticut	Falls Village	74	1	4 Stations	8	11+	Mead Pond Res	6.96	Bridgeport WB AP	2.96
Delaware	2 Stations	78	2	Georgetown 5SW	15	24	Dover	6.51	Selbyville	2.72
Florida	do	90	2+	3 Stations	19	28	Pompano Beach	2.60	Mt. Pleasant	.00
Georgia	Homerville	89	14	Blairsville Exp. Sta.	10	28	Flat Top	4.27	2 Stations	.00
Idaho	2 Stations	72	10	Gray 6NNW	-28	19	Sugar	3.02	4 Stations	.00
Illinois	3 Stations	81	4+	Vandalia CAA AP	3	23	Grand Tower 2N	4.88	Quincy Dam 21	.50
Indiana	2 Stations	82	4+	Greensburg 3SW	-2	24	Spencer 3W	3.91	Gary Disposal Plt	1.08
Iowa	Keosauqua	77	11	5 Stations	-2	23	Guthrie Center	4.34	Keokuk	.49
Kansas	Medicine Lodge	83	11	2 Stations	6	29	Bonner Springs	3.02	11 Stations	T
Kentucky	Owensboro 2W	85	3	Falmouth	7	24	Sebree	4 32	Hyden	.45
Louisiana	2 Stations	88	2+	4 Stations	17	10+	Gueydan 5S	9.74	Buras 2NW	.30
Maine	Woodland	74	2	Fort Kent	-14	25	Rockland	5.08	Orono	1.73
Maryland	Western Port	81	15	Oakland 1SE	-9	24	Royal Oak	13.13	Picardy	.11
Massachusetts	Plymouth	79	1	West Cummington	1	25	Fitchburg 2S	5.39	South Egremont	2.13
Michigan	2 Stations	74	1+	2 Stations	-12	23	Ironwood Power CO	5.40	Grand Ledge	.91
Minnesota	Collegeville St John U	69	2	Big Falls Ranger Sta.	-19	23	Marshall	3.44	Kettle Falls	.53
Mississippi	Liberty 3E	89	3	Hickory Flat 1WNW	13	30	Holcomb	5.19	Paulding	.11
Missouri	Greenville 4NNW	83	11	Memphis	6	24	Van Buren	5.84	2 Stations	.25
Montana	3 Stations	72	10	West Yellowstone	-30	19	Essex	2.49	9 Stations	T
Nebraska	Greeley	80	13	Fort Robinson	-8	20	Harrison	2.90	Atlanta	T
Nevada	2 Stations	85	7+	Ely WB AP	-8	20	Jarbidge	.45	25 Stations	.00
New Hampshire	Surry Mountain Dam	77	2	First Conn Lake	-3	25	Mount Washington	5.15	Bethlehem	1.79
New Jersey	Pleasantville 1N	77	17	Layton 3NW	5	24+	Bridgeton 1NE	8.14	Belleplain	2.01
New Mexico	Ft. Sumner	85	11	Eagle Nest	-23	21	Lake Maloya	1.09	87 Stations	.00
New York	2 Stations	80	2	Saranac Lake	-11	24	Croton Lake	7.64	Barker 4NE	.55
North Carolina	Hamlet	84	12	Celo 2S	7	25+	Clingmans Dome	7.53	Wilmington WB AP	.52
North Dakota	Wahpeton State School	65	11	Munich 4 SW	-14	22	Gackle	D2.99	Tioga 1E	.22
Ohio	Philo	82	4	4 Stations	1	24	Geneva 3SW	3.86	Carroll 2SSE	.68
Oklahoma	Okeene	86	11	Freedom	6	29	Signal Mountain Tower	7.80	4 Stations	.00
Oregon	Astor Exp. Station	77	23	Ukiah	-12	19	Astoria	4.25	3 Stations	.00
Pennsylvania	Berwick	80	1	Springs 1SW	-4	24	Watsontown	6.82	Coraopolis Neville Is.	.32
Rhode Island	2 Stations	73	1	Kingston	11	11	Greenville	4.85	Block Island WB AP	3.06
South Carolina	do	85	2	Chester 2SW	13	28	Caesars Head	4.21	Hilton Head	.08
South Dakota	Rapid City	71	10	Deerfield 5NW	-12	8+	Lead	6.30	Ralph	.19
Tennessee	Shelbyville 3	84	2	Mountain City 2	9	28	Haw Knob	5.10	Shelbyville 3	.92
Texas	Rio Grande City 1E	95	2	Seymour	10	29	Hagansport	7.66	Several Stations	.00
Utah	Zion NP	78	9+	Silver Lake Brighton	-18	19	Silver Lake Brighton	1.51	25 Stations	.00
Vermont	3 Stations	76	1+	Mount Mansfield	-15	26	Mays Mill	6.45	St Albans Bay	1.06
Virginia	Back Bay Wildlife Rfg	82	2	Monterey	4	24	Walkerton	7.88	Woodstock	.42
Washington	Packwood	70	8+	Stockdill Ranch	-5	19	Grotto	8.66	Quincy 3S	.03
West Virginia	Wellsburg 3NE	85	15	Canaan Valley	-14	24	Pickens 1	4.00	Petersburg	.15
Wisconsin	Williams Bay	75	1	Couderay	-26	23	Portage	4.55	Spooner Exp. Farm	.56
Wyoming	2 Stations	74	10+	Bondurant	-29	20	Esterbrook	4.08	4 Stations	T
Puerto Rico	Dos Bocas	95	21	Garzas Dam	55	23+	Villalba 2N	15.78	Culebra Island	1.24

+ And also on a later date or dates.

D Water equivalent of snowfall wholly or partly estimated, using a ratio of 1 inch of water equivalent to every 10 inches of new snowfall.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

Table 2

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days Max. 90° F or above	No. of days Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No. of days .01 inch or more	No. of days With thunderstorms	Snow, Sleet Total	Snow, Sleet Max depth on ground	Average hourly speed	Prevailing direction	Fastest mile Speed	Fastest mile Direction	Fastest mile Date	Clear	Partly cloudy	Cloudy	Sky cover tenths sunrise to sunset	Possible sunshine
	Ft.	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In	In.	In			In	In	M p. h.		M p h			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	995.6	1021.4	63	38	50.3	-1.7	80	3	22	23+	0	13	37	66	2.18	-1.80	1.06	5	1	T	T	8.2	NW	33	NW	16	15	7	8	1.1	71
Mobile	211	1013.0	1021.2	68	44	56.3	2.4	82	2	25	23	0	7	46	73	1.09	-2.98	.56	4	2	0.0	0	9.4	N	--	---	--	15	7	8	3.8	
Montgomery	198	1013.4	1021.1	65	40	52.5	-2.7	82	2	23	23	0	8	42	71	1.10	2.85	.18	5	0	.0	0	6.7	NW	27	SW	25	17	6	7	3.6	71
ARIZONA																																
Flagstaff	6993	------	------	52	16	33.9	-1.9	71	11	0	20	0	30	--	--	.05	-.84	.05	1	0	1.0	1	- -	- -	-	-	-	26	2	0	.9	
Phoenix	1114	979.3	1019.2	74	42	57.8	-.6	86	10	30	21	0	3	24	28	.00	-.47	.00	0	0	.0	0	1.0	E	*25	NNW	19	26	2	2	1.3	98
Prescott	5014	851.0	1022.0	61	25	43.1	-2.5	75	11	10	20	0	27	-	--	.00	-.62	.00	0	0	.0	0	6.7	S	37	NW	19	26	1	0	1.1	96
Tucson	2558	928.9	1017.7	73	42	57.8	-.4	85	11	28	3+	0	1	19	21	T	-.76	T	0	0	.0	0	8.2	ESE	33	SE	22	25	3	2	1.5	95
Winslow	4880	856.8	1024.8	54	19	36.2	-6.7	69	13	7	21	0	30	7	32	.09	-.34	.09	1	0	7	T	5.8	SE	*31	WNW	1	23	7	0	1.6	
Yuma	199	1013.9	1019.2	78	48	63.4	-.8	91	7+	38	21	3	0	13	16	.00	-.14	.00	0	0	.0	0	7.6	N	37	N	19	21	4	2	1.6	94
ARKANSAS																																
Fort Smith	458	1003.4	1020.4	61	36	48.2	-2.3	80	11	20	29	0	13	36	69	4.53	1.51	2.10	6	6	.0	0	8.7	W	31	SW	20	18	4	8	3.6	64
Little Rock	257	1007.1	1020.3	62	39	50.6	-.9	78	11	23	30	0	11	38	65	5.12	1.20	2.64	7	5	.0	0	9.2	WNW	33	N	26	17	4	9	3.8	70
Texarkana	361	------	------	64	41	52.6	-2.2	80	11+	26	27+	0	7	--	--	3.87	-.46	2.25	6	6	.0	0	-	--	-							-
CALIFORNIA																																
Bakersfield	489	1004.1	1022.6	72	42	56.8	.6	87	8	33	21	0	0	31	42	.00	-.43	.00	0	0	.0	0	3.9	ENE	*23	ESE	20	21	5	1	2.5	--
Bishop	4108	880.8	1023.7	69	26	47.3	1.1	80	8	17	21	0	28	-	--	.00	-.48	.00	0	0	.0	0	---	---				23	5	2	2.0	--
Blue Canyon	5280	844.6	1021.7	60	41	50.4	6.5	71	7+	23	1	0	8	--	--	.18	-6.50	.18	1	0	2.0	7	-	-	-	--	--	20	5	5	2.9	-
Burbank	699	992.9	1019.1	81	48	64.1	4.2	93	6+	40	21	5	0	31	33	.09	-.98	.00	0	0	0	0	2.9	S	*29	NE	19	23	6	1	1.8	-
Eureka (U)	43	1022.4	1024.7	54	43	48.5	-2.8	63	10	35	19	0	0	-	-	.19	-4.15	.34	5	0	.0	0	4.7	--	28	NW	13	10	7	13	5.7	19
Fresno	331	1010.2	1022.6	69	37	53.2	-.3	85	9	30	20+	0	6	35	55	.00	-.75	.00	0	0	.0	0	3.5	E	17	NW	13	21	7	2	2.2	97
Los Angeles (U)	312	------	------	80	54	67.2	5.1	94	9	45	21	5	0	29	29	.00	-1.03	.00	0	0	.0	0	7.0	-	34	NW	1	24	6	0	1.6	96
Los Angeles	99	1014.9	1017.3	79	53	65.9	6.6	95	8+	46	21	4	0	34	35	.00	-1.10	.00	0	0	.0	0	6.1	W	%10	N	1	22	7	1	2.0	--
Mt. Shasta (R)	3544	900.1	1026.1	57	29	43.0	1.5	73	9	18	20	0	19	--	--	.12	-3.71	.07	2	0	.5	T	--		-	----	-	17	6	7	3.6	
Oakland	3	1022.0	1022.4	66	42	53.8	.0	77	10	34	29	0	0	40	66	.04	1.91	.04	1	0	.0	0	5.3	WSW	*31	NNE	19	20	7	3	2.7	
Red Bluff	341	1010.5	1023.6	70	41	55.7	1.2	80	6	30	27+	0	2	33	48	.08	-2.19	.08	1	0	.0	0	7.8	NW	30	N	13	20	5	5	3.3	93
Sacramento	17	1021.3	1022.4	66	40	53.1	.0	77	9	32	28	0	1	37	59	.06	1.44	.06	1	0	.0	0	6.8	NNW	38	N	2	21	6	3	2.7	94
Sandberg (R)	4517	867.6	1023.4	58	44	51.1	1.6	75	12	25	20	0	4	--	--	.00	-.70	.00	0	0	.0	0	19.6		*60	ENE	19	23	5	2	1.9	
San Diego	19	1014.6	1018.0	77	52	64.2	3.4	96	9	45	21	2	0	34	38	.00	-.83	.00	0	0	.0	0	4.6	NW	16	SE	20	24	1	2	2.1	90
San Francisco (U)	52	------	------	68	51	59.4	2.2	78	7	48	15+	0	0	-		.04	-2.23	.04	2	0	.0	0	5.6	--	30	NE	19	21	6	3	2.3	89
San Francisco	8	1021.7	1022.4	66	44	54.9	.5	78	9	38	24	0	0	42	68	.01	-1.61	.01	1	0	0	0	5.5	WNW	35	N	19	20	7	3	3.0	
Santa Maria	238	1011.5	1020.2	76	39	57.8	1.4	93	9	32	19+	3	3	29	44	.00	-.94	.00	0	0	.0	0	5.4	WNW	*21	WNW	18	24	4	2	1.8	
COLORADO																																
Alamosa	7536	774.1	1026.6	44	6	25.2	-4.3	60	11	8	3+	0	30		-	.09	-.29	.09	2	0	3.0	3	- -		--	---	--	20	4	6	3.1	-
Colorado Springs	6173	813.1	1023.7	49	21	34.8	-4.3	73	10	5	20	0	30	15	51	.91	.56	.76	5	0	9.0	6	10.9	NNW	*31	NNE	14	13	8	9	4.5	
Denver	5292	840.5	1021.9	50	25	37.2	-2.1	71	14	10	20	0	27	17	53	1.25	.55	.54	7	0	21.3	11	12.8	S	27	N	2	13	8	9	4.8	66
Grand Junction	4849	866.6	1027.7	45	23	34.3	-4.3	60	10+	9	21	0	29	18	54	.18	-.37	.13	3	0	2.3	2	7.2	ESE	31	NW	14	18	5	7	3.6	73
Pueblo	4639	860.5	1023.1	52	22	37.0	-2.3	76	10	4	21	0	29	20	57	.25	-.22	.13	4	0	3.5	3	7.4	W	40	W	13	16	7	7	4.3	79
CONNECTICUT																																
Bridgeport	7	1017.4	------	53	37	44.8	1.3	68	4	20	24	0	11	--		2.96	.63	1.77	9	0	T	T	----	---		-	--	8	8	14	6.3	-
Hartford	169	1011.0	1017.2	52	31	41.5	.2	69	1	12	11	0	16	31	68	3.75	.27	1.35	13	0	1.0	1	10.9	S	47	S	21	8	9	13	6.3	45
Middletown (U)	133	1013.0	------	52	32	41.8	---	70	1	13	24	0	15	--	--	3.83	--	1.27	12	0	T	0	8.7	---	%52	S	21	--		-	--	--
New Haven	6	1017.0	1017.6	52	35	43.5	.6	69	4	16	11	0	13	--	--	3.19	-.75	1.31	12	0	T	T	7.6	---	34	SW	21	7	9	14	6.6	52
DELAWARE																																
Wilmington	78	1014.9	1018.2	55	36	45.2	-.3	72	2	16	24	0	14	36	72	5.94	2.61	3.83	11	2	T	T	10.9	NW	-	---	-	7	8	15	6.3	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	55	40	47.5	-.5	72	15	21	24	0	8	--	-	2.84	-.36	1.29	7	1	T	0	7.3	---	34	NW	12	--	--	-	---	
Wash. Nat'l. AP	14	1014.1	1018.6	54	38	46.1	-1.6	72	15	20	24	0	11	33	63	2.81	.08	1.47	7	1	T	0	9.6	S	45	NW	12	6	8	16	6.5	52
FLORIDA																																
Apalachicola (U)	13	1018.6	------	69	51	60.0	-1.4	81	3	34	23+	0	0	--	--	1.47	-.98	.94	3	1	.0	0	6.9	---	26	NW	9	20	8	2	2.3	90
Daytona Beach	31	1018.0	1019.6	73	51	62.1	-3.0	83	21	32	28+	0	2	52	75	.46	-1.81	.26	6	1	.0	0	10.3	WNW	*27	N	5	19	7	4	3.2	--
Fort Myers	15	1018.2	------	78	53	65.2	-4.0	86	21	36	24	0	0	--	--	1.35	.14	.70	5	0	.0	0	9.0	---	*30	ENE	3	17	12	1	3.6	--
Jacksonville	24	1018.8	1020.1	71	49	59.8	-1.8	84	16	28	28	0	2	19	73	.38	-1.24	.26	4	0	.0	0	8.9	NW	29	NE	3+	15	11	4	3.8	73
Key West (U)	9	1016.5	------	79	67	72.7	-1.9	85	8+	53	29	0	0	--	--	.22	-1.80	.11	4	0	.0	0	9.2	--	23	NW	22	15	11	1	3.9	82
Lakeland (U)	214	------	------	75	55	64.6	-2.1	85	21	37	23+	0	0	--	--	.24	-1.15	.19	2	0	.0	0	7.3		--	---		21	9	0	2.5	79
Miami (U)	8	------	------	76	61	68.3	-4.0	84	2+	42	28	0	0	-		.82	-1.34	.21	11	0	.0	0	14.7	--	56	NE	3	19	9	2	3.1	84
Miami	8	1016.2	1017.2	79	60	69.8	-2.3	87	2	42	28	0	0	58	71	.34	-2.07	.12	8	0	.0	0	12.1	N	30	NNE	5	9	19	2	4.5	
Miami Beach	9	------	------	79	65	71.4	-2.6	85	2	46	28	0	0	--	--	.67	-1.61	.15	9	0	.0	0	-	--	--	---	-	6	18	6	--	--
Orlando	106	1015.3	1019.7	75	52	63.8	-3.0	85	21	32	28	0	1	53	75	1.26	-.06	1.00	4	1	.0	0	9.2	NNE	30	N	8	19	10	1	2.7	--
Pensacola (U)	13	1018.4	------	68	49	58.4	1.8	80	1+	30	23	0	2	--	--	.76	-3.08	.41	4	0	.0	0	9.7	--	23	NW	21	--	--	-	---	73
Tallahassee	64	1017.7	1020.2	69	44	56.7	-2.1	84	2	23	28	0	5	46	74	.42	-2.10	.27	3	1	.0	0	5.6	NW		-	--	18	7	5	3.2	-
Tampa	19	1018.1	1019.5	76	53	64.8	-1.9	86	2	35	28	0	0	53	71	.45	-.59	.29	3	1	.0	0	10.0	N	*25	NNW	9+	20	10	0	2.8	80
West Palm Beach	15	1016.4	1017.2	78	60	68.9	-2.8	85	1+	40	28	0	0	58	72	.89	2.10	.19	9	0	.0	0	13.4	NW	*32	NE	4	14	11	5	1.1	
GEORGIA																																
Athens	798	990.6	1020.0	61	38	49.7	-2.3	78	2	23	23+	0	10	40	75	2.14	.88	1.05	7	0	.0	0	9.5	NW	*28	NW	22	18	6	6	3.8	-
Atlanta	975	978.5	1021.0	61	40	50.5	-1.4	77	2	24	23	0	8	39	69	1.55	-1.86	.71	6	0	T	0	11.2	NW	27	W	21	16	6	8	1.2	66
Augusta	143	1013.0	1019.7	67	38	52.7	-1.1	82	1	21	23	0	11	41	72	.58	-1.86	.43	3	0	.0	0	6.5	W	*21	W	22	15	9	6	3.7	--
Columbus	385	1006.6	------	65	39	51.8	-2.5	81	2	19	23	0	11	--	--	.31	-2.55	.11	6	0	T	0	-	-	--	--	-	17	6	7	3.8	-
Dawsonville	1110	------	------	60	31	45.5	---	78	2	13	28	0	19	--	--	1.57	----	.69	5	0	T	0	3.9	--	30	N	9+	--	-		---	--
Macon	356	1006.2	1020.0	67	40	53.7	-2.3	84	2	23	28	0	7	40	66	.43	-2.30	.27	4	0	.0	0	9.3	WNW	26	NW	8+	15	9	6	3.7	87
Rome	637	997.2	------	62	33	47.4	-3.1	78	2+	17	23+	0	17	--	--	1.31	-2.45	.96	5	0	T	0	----	---	--	--	-	16	5	9	4.7	
Savannah	48	1017.3	1019.9	68	43	55.6	-2.5	83	2	24	28	0	5	44	71	.28	-1.23	.18	2	0	.0	0	9.0	NE	28	NW	21	15	10	5	3.8	76
Thomasville (U)	283	------	------	70	47	58.5	-1.0	85	1	28	23	0	3	--	-	.18	-2.06	.16	2	0	.0	0		--	--	--		--	-		-	-
IDAHO																																
Boise	2842	930.9	1030.3	44	26	35.3	-4.3	63	12	16	19	0	27	28	79	.41	.94	.22	3	0	1.2	1	6.3	SE	30	NW	13	12	6	12	5.1	67
Idaho Falls 46W (R)	4933	856.4	1030.8	40	11	25.6	-4.4	57	12	2	20	0	30	--	-	.28	-.28	.13	3	0	3.1	1	3.8	-	a30	SW	13	--	-	-	---	-
Idaho Falls 42NW (R)	4790	------	------	38	11	24.5	-4.4	51	11	-3	15+	0	30	--	--	.14	-.17	.05	5	--	---		5.6	---	a34	W	17	-			--	
Lewiston	1413	976.0	1029.3	43	31	36.9	-3.2	56	12	17	19	0	20	--	--	.39	-.96	.21	3	0	T	T	----	---	--	---	--	3	7	20	8.3	
Pocatello	4444	870.6	1030.0	42	19	30.9	-5.0	61	12	3	19	0	29	24	78	.25	-.81	.13	3	0	2.3	1	8.7	SW	46	SW	13	13	4	13	5.0	67
ILLINOIS																																
Cairo (U)	314	1006.1	------	58	39	48.1	-.5	77	4	20	24	0	10	--	--	3.80	.00	2.89	6	1	.1	T	9.2	---	28	SW	14	13	10	7	4.6	67
Chicago	610	992.9	1016.3	49	33	40.6	1.1	70	14	15	23+	0	17	31	69	1.31	-1.02	.60	8	1	1.5	1	10.2	W	40	SW	16	1	11	18	7.9	36
Moline	589	993.9	1016.6	48	29	38.4	-.4	71	1+	10	29	0	21	30	72	2.43	.28	1.04	7	1	2.1	2	12.6	WNW	48	W	15	5	9	16	7.1	42
Peoria	654	994.2	1017.2	49	31	39.9	.2	73	5	10	29	0	18	31	71	2.30	-.05	1.33	9	1	2.8	1	13.6	S	47	W	15	5	9	16	6.9	47
Springfield	589	994.2	1018.0	51	31	41.3	.4	76	4+	7	23	0	17	31	70	2.44	.18	1.00	9	4	2.0	2	14.5	SSW	46	W	15	8	7	15	6.2	48
INDIANA																																
Evansville	383	1003.1	1019.2	56	33	44.1	-1.9	79	3+	17	23+	0	18	32	67	2.32	.88	1.05	7	0	.8	T	9.7	NW	36	SW	15	10	11	9	5.4	56
Fort Wayne	801	984.8	1016.6	48	32	40.1	.4	70	14	16	24	0	18	31	74	2.64	.18	1.79	10	2	1.0	T	13.6	W	54	SW	15	3	10	17	7.4	35
Indianapolis	793	987.5	1018.2	51	32	41.1	-.4	74	3	12	24	0	19	32	72	2.31	.82	1.01	8	1	2.7	2	12.9	WSW	43	NW	12	7	9	14	6.7	45

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F.	%	In.	In.	In.			In.	In.	M p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
INDIANA (Cont'd.)																																
South Bend	768	987.5	1016.0	48	31	39.8	1.1	72	3	14	23	0	17	31	74	2.04	-0.70	0.66	12	1	11.1	5	12.9	SSW	*38	SW	21	1	10	19	7.9	--
IOWA																																
Burlington	694	991.5	1017.8	50	30	39.8	.3	73	11	11	23+	0	19	29	68	1.26	-1.00	.59	6	1	.9	1	12.4	WNW	42	NW	21	5	13	12	6.3	64
Des Moines	948	986.5	1017.8	47	29	37.9	-.5	69	11	9	22	0	20	29	74	1.79	.11	.84	12	1	4.8	3	14.3	NW	45	NW	21	7	7	16	6.7	54
Dubuque	1065	990.2	1016.0	44	26	35.1	-.5	67	1	6	29	0	23	28	74	2.11	.02	1.11	6	1	.7	T	----	---	--	---	--	5	5	20	7.6	--
Sioux City	1094	975.6	1018.3	47	27	36.8	1.3	67	13	8	22	0	21	25	66	1.12	-.08	.56	7	0	4.8	2	16.1	NW	54	N	25	5	11	14	6.7	51
Waterloo	870	------	--- --	44	26	35.3	-.7	66	2	0	23	0	23	--	--	1.20	-.74	.72	6	1	2.7	3	13.9	---	--	---	--	--	--	--	---	--
KANSAS																																
Concordia (U)	1375	968.5	-- -	52	31	41.5	-.6	73	10+	17	28+	0	17	--	61	.54	-.61	.33	4	0	1.7	1	9.1	---	30	NW	21	14	10	6	4.2	82
Dodge City	2594	930.6	1020.3	55	29	41.8	-.9	77	11	13	29	0	21	23	53	.03	-.84	.02	2	0	T	T	15.3	NNW	56	W	2	17	8	5	3.5	78
Goodland	3645	891.0	1020.8	48	24	35.9	-1.6	73	13	13	20	0	29	26	72	1.29	.71	.88	7	2	11.1	6	14.7	NNW	*45	NW	2	13	10	7	4.4	--
Topeka	879	983.1	1019.5	54	30	42.3	-.3	75	14	14	29	0	20	30	65	1.96	.37	1.61	5	1	.2	T	13.0	WNW	49	S	14	11	10	9	4.9	64
Wichita	1321	969.9	1019.6	55	32	43.8	-1.3	80	11	11	29	0	15	30	61	.48	-1.25	.48	2	0	T	T	12.8	S	42	SW	2+	17	8	5	3.4	74
KENTUCKY																																
Lexington	979	982.7	1019.4	53	33	43.2	-.6	77	3	12	24	0	18	33	71	2.32	-.83	1.55	9	0	1.3	1	12.0	S	--	---	--	11	4	15	5.7	--
Louisville	474	999.2	1018.8	54	34	44.0	-1.7	77	3	18	23+	0	16	33	68	1.52	-1.60	.99	7	0	1.2	1	10.3	S	38	S	21	11	5	14	5.7	57
LOUISIANA																																
Baton Rouge	64	1018.3	1021.3	71	45	57.6	-1.5	85	2	25	30	0	6	46	70	1.71	-3.02	.80	6	3	.0	0	9.0	N	--	---	--	13	7	10	4.5	--
Lake Charles	12	1020.0	1020.7	71	48	59.4	.1	84	2+	31	27+	0	2	49	73	2.29	-2.05	1.04	7	3	.0	0	7.6	N	*27	NNW	15	16	4	10	4.2	--
New Orleans (U)	9	1018.6	- --	70	54	61.8	-.7	84	2	40	9+	0	0	--	--	1.92	-2.09	1.75	6	0	.0	0	6.6	---	21	NW	21	14	10	6	3.8	66
New Orleans	3	1018.6	1020.8	71	50	60.2	-.7	85	2	30	28+	0	3	49	70	1.78	-2.31	1.52	5	2	.0	0	9.7	N	*29	NNW	21	15	8	7	4.1	--
Shreveport	252	1011.5	1020.8	66	42	54.1	-1.3	82	20	26	30	0	8	40	65	3.50	-.40	2.01	9	4	.0	0	9.6	NNW	--	---	--	17	4	9	3.7	75
MAINE																																
Caribou	624	991.8	1015.7	40	23	31.4	2.2	68	1	0	25	0	26	26	82	2.77	-.26	1.33	14	0	9.8	5	10.3	NW	*34	WSW	21	5	10	15	6.8	--
Portland	61	1012.4	1016.6	49	27	38.0	.5	65	5	9	19	0	20	30	73	3.93	.14	1.83	11	0	9.1	6	8.3	WSW	34	NE	26	10	8	12	5.4	52
MARYLAND																																
Baltimore (U)	14	- ---	------	57	42	49.3	.6	76	15	23	24	0	6	--	--	2.83	-.13	1.58	7	0	.0	0	----	---	--	---	--	--	--	--	---	--
Baltimore	146	1013.9	1018.8	55	36	45.4	-.2	73	15	17	24	0	14	35	70	2.69	-.27	1.31	9	1	T	0	9.2	NW	50	W	12	8	8	14	6.1	46
Frederick	294	-- ---	--- --	54	33	43.4	-2.0	72	15	15	25	0	17	--	--	2.39	-.56	1.39	7	0	T	0	----	---	--	---	--	--	--	--	---	--
MASSACHUSETTS																																
Blue Hill Obs(R)	629	993.0	1016.8	53	34	42.0	1.3	74	1	13	24	0	13	--	70	3.60	-.60	1.53	9	0	.7	1	15.7	SSW	50	S	21	8	13	9	5.9	52
Boston	15	1011.8	1016.5	54	38	46.1	1.7	71	1+	20	24	0	8	34	66	3.46	-.03	1.70	10	0	.6	1	16.5	SSW	*55	SSW	21	9	8	13	6.0	64
Nantucket	43	1016.6	1017.2	53	39	46.1	1.6	69	1	21	24	0	9	39	75	2.29	-1.43	.83	11	0	2.2	2	12.4	WNW	45	SE	26	5	10	15	7.0	46
Pittsfield	1153	973.1	------	47	28	37.7	.8	76	1	9	24+	0	19	--	--	3.88	-.10	1.06	17	1	8.1	6	----	---	--	---	--	--	--	--	---	--
Worcester	986	980.3	-- --	49	32	40.7	1.1	70	1+	10	24	0	17	--	--	3.28	-1.03	.70	11	0	.2	T	12.9	---	47	SSW	21	9	8	13	6.0	--
MICHIGAN																																
Alpena (U)	587	991.2	------	42	30	36.1	-.1	57	3	8	23	0	21	--	--	1.78	-.40	.81	20	2	8.4	5	11.5	---	42	SW	21	0	6	24	8.8	22
Detroit	619	988.8	1016.2	48	34	40.9	.8	70	1	12	23	0	14	33	75	3.32	1.14	1.22	10	2	6.7	5	11.9	W	42	SW	21	4	7	19	7.2	42
Detroit (Willow Run)	722	986.5	1015.5	48	32	40.0	.3	70	2	10	23	0	16	31	74	2.15	-.05	1.10	9	1	5.8	4	12.3	SW	*35	WSW	21	4	9	17	7.3	--
East Lansing (U)	856	- ----	------	47	32	39.3	1.4	71	2	9	23	0	16	--	--	1.24	-1.06	.50	12	0	3.8	2	6.4	---	26	W	16	--	--	--	---	25
Escanaba (U)	594	990.2	------	41	29	35.0	1.1	65	1	4	23	0	21	--	--	2.62	.42	1.07	13	0	7.4	4	11.0	---	35	N	21	2	5	23	8.4	19
Flint	761	986.8	1015.3	47	30	38.3	.7	69	1	10	23	0	17	31	75	1.55	-.63	.63	13	0	3.9	3	11.9	S	*40	SW	21	1	9	20	8.2	--
Grand Rapids	681	991.5	1015.1	47	32	39.5	1.9	68	1	2	23	0	15	32	78	1.52	-1.01	.53	15	0	6.1	2	11.0	S	50	W	16	1	5	24	8.8	31
Marquette (U)	677	986.1	------	39	29	34.1	.2	59	2+	8	22	0	22	--	78	3.71	.59	.97	18	0	31.0	13	9.3	---	36	S	13	0	3	27	9.3	24
Muskegon	627	991.2	1015.1	47	34	40.5	2.0	68	1+	4	23	0	15	33	75	1.43	-1.21	.44	15	2	6.3	2	----	---	--	---	--	0	5	25	8.8	--
Sault Ste. Marie	721	990.9	1014.1	40	26	33.0	1.5	63	1+	-5	23	0	23	30	87	3.21	-.05	.75	19	2	16.6	7	10.1	E	30	NW	9+	0	5	25	9.2	14
MINNESOTA																																
Duluth	1409	972.9	1015.3	35	21	28.1	1.1	56	2	-10	23	0	24	23	81	1.47	-.31	.59	18	0	17.0	12	15.8	NW	45	NW	7+	2	4	24	8.6	22
Intern'l. Falls	1179	972.9	1015.6	35	18	26.8	2.8	61	3	-16	23	0	25	21	78	.69	-.48	.14	12	0	5.5	3	13.2	SE	--	---	--	1	8	21	8.2	--
Minneapolis	830	982.4	1016.8	41	27	34.1	1.1	63	2	5	23	0	21	28	78	1.35	-.09	.56	11	0	6.8	5	13.2	NW	40	NW	21	3	10	17	7.3	37
Rochester	1017	978.0	1016.3	41	23	32.0	-.5	64	1	-6	23	0	23	27	79	1.36	-.16	.78	11	1	6.1	4	11.1	WNW	--	---	--	3	9	18	7.5	--
St. Cloud	1034	977.0	1016.2	40	23	31.1	1.7	61	2	-4	23	0	23	26	81	2.34	.97	1.06	6	0	7.1	7	7.8	NW	--	---	--	3	8	19	7.6	--
MISSISSIPPI																																
Jackson	305	1008.9	1021.1	66	40	53.1	-2.1	82	2+	20	30	0	12	41	67	1.55	-2.50	.98	5	1	.0	0	7.1	SSE	31	NW	21+	14	8	8	4.2	63
Meridian	294	1006.6	------	67	37	51.9	-2.2	83	2+	18	30	0	12	-	--	.38	-3.65	.17	4	0	.0	0	----	---	--	---	--	17	8	5	3.4	--
Vicksburg (U)	234	1011.6	------	66	45	55.2	-1.6	83	2	28	30	0	4	--	--	1.80	-2.81	1.04	5	2	.0	0	8.9	---	23	S	20	15	7	8	4.0	71
MISSOURI																																
Columbia	778	989.5	1018.4	55	33	43.7	.5	77	11	16	23+	0	15	31	63	.52	-2.09	.28	4	1	T	T	12.1	NW	33	NW	21+	9	8	13	6.0	52
Kansas City	741	983.7	1019.4	54	35	44.1	-.2	76	11	18	29	0	15	30	60	2.18	.01	1.68	5	0	T	T	13.1	SW	40	NW	21	8	12	10	5.6	57
St. Joseph	809	------	------	52	31	41.3	-1.0	73	14	15	29	0	18	--	-	2.74	.74	2.11	4	1	.1	T	14.2	---	*36	WNW	21	9	9	12	5.8	--
St. Louis (U)	465	997.6	------	54	37	45.9	-.1	76	4+	19	22	0	13	--	--	2.53	-.19	1.25	7	3	.5	T	12.9	---	44	SW	14	12	8	10	5.3	62
St. Louis	552	997.6	1018.4	55	35	45.0	.0	79	4	17	24	0	14	32	64	4.19	1.62	1.81	7	3	.4	T	10.5	S	--	---	--	8	10	12	6.1	--
Springfield	1265	970.9	1019.3	54	34	43.9	-.6	73	11+	19	28+	0	17	33	69	2.17	-.58	1.24	8	4	T	T	14.5	S	41	SE	2	12	6	12	5.3	64
MONTANA																																
Billings	3568	896.4	1023.5	48	27	37.5	1.7	64	10	14	2+	0	23	22	58	.97	.29	.45	5	0	8.7	4	14.6	SW	47	NW	18	11	9	10	5.3	68
Butte	5530	835.4	1026.1	40	13	26.8	-1.4	60	10	-4	2	0	29	18	--	.10	-.59	.03	4	0	1.0	2	5.3	NW	*31	WNW	18	12	5	13	5.5	--
Glasgow (U)	2277	944.8	1021.7	44	21	32.9	4.9	64	10	9	15	0	29	22	68	.38	-.14	.29	3	0	.7	1	9.4	WNW	*33	NW	20	5	10	15	6.7	--
Great Falls	3664	893.3	1022.8	48	29	38.3	3.1	65	10	12	19	0	23	21	53	.30	-.37	.13	5	0	2.4	1	19.9	SW	71	SW	12	12	6	12	5.2	80
Havre	2488	931.3	1022.7	47	24	35.3	4.4	67	10	8	19	0	27	23	63	.18	-.30	.06	5	0	1.8	1	9.7	---	34	SW	12+	12	7	11	5.2	71
Helena	3893	880.1	1027.3	44	21	32.6	.9	67	10	10	26+	0	29	21	68	.12	-.52	.04	5	0	.7	T	7.8	W	42	W	17	11	7	12	5.6	60
Kalispell	2965	---- -	------	37	22	29.6	-2.4	58	10	0	19	0	28	--	--	.55	-1.00	.29	7	0	3.9	2	----	---	--	---	--	0	8	22	8.7	--
Miles City	2629	936.0	1022.8	44	24	34.3	1.5	67	10	7	5	0	26	24	--	.61	.12	.21	4	0	4.0	3	12.4	WNW	*38	WNW	20	5	13	12	6.1	--
Missoula	3200	912.0	1030.6	38	23	30.7	-1.2	61	10+	10	19	0	30	25	80	.46	-.65	.26	7	0	1.6	1	4.3	SE	40	SW	17	2	3	25	8.8	17
NEBRASKA																																
Grand Island	1841	951.2	1018.9	50	26	38.1	.5	73	10	10	22	0	23	25	63	.27	-.71	.17	4	1	1.8	2	15.0	NNW	--	---	--	9	12	9	5.3	--
Lincoln (U)	1166	------	------	51	31	40.8	.5	71	11	11	22	0	17	--	--	1.03	-.38	.48	6	1	5.1	4	12.9	---	48	NW	25	9	12	9	5.2	73
Norfolk	1544	961.4	1018.4	48	25	36.6	1.7	70	13	7	22	0	22	26	66	.95	-.11	.44	6	1	2.6	2	----	---	--	---	--	7	11	12	6.4	--
North Platte	2779	920.4	1020.0	48	22	35.1	-1.7	73	13	6	16	0	29	25	71	.78	.23	.43	7	0	5.2	4	11.4	NW	54	N	2	11	10	9	5.2	71
Omaha	978	977.7	1018.6	50	30	39.7	.8	68	11+	10	22	0	19	28	66	1.81	.52	1.20	5	0	5.2	5	13.3	NW	49	N	25	7	12	11	5.9	58
Omaha, N.Omaha AP	1323	968.8	------	47	27	37.3	---	67	11	6	22	0	20	--	--	1.62	----	.93	7	0	5.4	5	----	---	--	---	--	--	--	--	---	--
Scottsbluff	3950	882.2	1022.2	45	21	32.9	-3.2	69	13	0	20	0	28	21	64	1.02	.45	.59	6	0	15.2	8	13.0	NW	*39	NW	2	12	8	10	5.1	--
Valentine (U)	2587	925.2	- --	45	21	32.9	-2.4	68	10	2	16	0	29	--	--	.64	.00	.58	4	1	3.8	2	13.2	---	40	N	27	3	12	15	6.9	66
NEVADA																																
Elko	5075	853.7	1030.7	49	12	30.5	-4.0	67	10	-2	20	0	30	19	69	.08	-.85	.06	2	0	1.4	1	2.4	WSW	*24	NNW	13	18	6	6	3.5	--
Ely	6257	815.8	1028.4	50	11	30.6	-4.6	71	10	-8	20	0	30	11	50	.04	-.65	.03	3	0	1.6	1	11.0	---	38	SW	26	22	6	2	2.5	89
Las Vegas	2162	956.3	1023.0	66	35	50.6	-3.3	79	9	23	20	0	8	10	20	.00	-.22	.00	0	0	.0	0	7.1	W	*35	NW	13	26	4	0	.9	98
Reno	4397	870.3	1029.0	56	17	36.8	-3.4	73	10	9	27	0	30	20	60	T	-.64	T	0	0	T	T	2.2	SSW	29	N	13	18	11	1	2.6	93
Winnemucca	4299	876.7	1029.8	54	15	34.1	-3.5	74	10	1	20	0	30	21	61	.07	-.77	.06	2	0	.1	1	5.2	SE	25	N	13	17	8	5	3.2	75

See footnotes at end of table.

CLIMATOLOGICAL DATA

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
		Station ∅	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days Max. 90° F or above	No. of days Min 32° F or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No. of days .01 inch or more	No. of days With thunderstorms	Snow, Sleet Total	Snow, Sleet Max depth on ground	Average hourly speed	Prevailing direction	Fastest mile Speed	Fastest mile Direction	Fastest mile Date	Clear	Partly cloudy	Cloudy	Sky cover tenths (sunrise - sunset)	Possible sunshine
	Ft	Mb	Mb	°F	°F	°F	°F	°F		°F				°F	%	In	In	In			In	In	M p h		M p h			0–3	4–7	8–10	0–10	%
NEW HAMPSHIRE																																
Concord	339	1005.8	1016.8	50	27	38.3	1.6	74	1	5	25	0	23	30	73	2.12	-1.45	0.91	9	0	10.3	6	7.1	NW	25	S	21	10	8	12	5.7	56
Mt. Washington	6262	800.5	-- ---	28	14	21.1	1.2	51	1	-13	24	0	26	-	89	5.15	-1.43	1.47	18	1	30.7	[illegible]	32.2	W	%112	WSW	21	5	7	18	6.9	42
NEW JERSEY																																
Atlantic City (U)	8	1015.9	- ----	54	41	47.3	-.8	67	2	21	24	0	6	--	--	2.44	-.88	1.27	11	0	.0	0	16.2	---	52	SW	21	8	8	11	6.1	[illegible]
Newark	11	1016.7	1017.9	54	38	46.1	1.2	72	15+	21	24	0	12	36	70	3.98	.88	1.47	10	0	T	T	9.6	SSW	*27	NW	12+	7	10	13	6.2	--
Trenton (U)	56	1010.8	1018.6	54	39	46.1	.5	72	2	22	24	0	10	-	--	3.29	.13	1.29	9	0	T	T	9.3	-	38	S	21	6	11	13	6.3	50
NEW MEXICO																																
Albuquerque	5310	852.7	1022.0	55	27	41.0	-3.0	69	11	14	21	0	25	14	36	.03	-.39	.03	1	0	T	0	7.2	N	36	W	1	24	5	1	1.6	91
Clayton	4969	848.3	1020.3	55	25	39.6	-2.8	79	11	12	15+	0	26	-	--	.04	.35	.03	2	0	.4	1		- -	--	- -		17	9	1	3.0	
Raton	6379	808.3	1022.4	52	17	34.4	-4.0	73	10+	3	21	0	30	-	--	.23	-.34	.14	4	0	2.7	2		-	-	-		17	8	5	3.7	
Roswell	3612	897.4	1021.0	63	26	44.6	-3.7	84	11	16	22	0	25	16	35	T	-.39	T	0	0	T	0	8.6	---	15	W	20	25	1	1	1.7	
NEW YORK																																
Albany	277	1013.2	1016.8	49	31	39.9	.9	76	1	10	25	0	17	31	73	2.30	-.39	.83	9	0	7.6	6	8.2	S	34	S	21	3	15	12	6.6	45
Binghamton	1601	956.0	1016.1	46	30	38.0	.8	73	1	9	24	0	17	30	74	1.30	-1.55	.55	13	0	7.3	2	12.1	S	38	NW	9+	4	6	20	7.5	33
Buffalo	693	987.5	1016.0	50	34	42.0	2.1	75	1	15	25	0	16	32	71	2.88	-.21	1.06	15	1	16.2	6	13.7	S	56	SW	16+	5	4	21	7.7	36
New York (U)	10	1016.6	------	53	40	46.7	.4	69	15+	22	24	0	9		-	2.99	-.10	1.28	10	0	T	0	14.1	---	58	W	21	7	9	11	6.1	59
New York	19	1016.1	1017.9	54	41	47.6	.8	70	4	22	24	0	6	35	64	2.89	-.10	1.33	10	0	T	0	12.9	WNW	38	NE	25	6	11	13	6.1	-
Rochester	543	995.9	1016.0	49	33	41.0	1.3	74	1	14	24	0	16	33	75	1.47	1.27	.75	13	0	10.0	7	12.6	WSW	19	W	21	3	10	17	7.4	47
Schenectady	217	------	------	49	34	41.6	3.0	75	1	16	24+	0	12	--	--	1.82	-1.02	.75	7	1	4.3	3	--	-	--	---	--	13	11	6	4.5	-
Syracuse	424	994.6	1017.1	49	33	41.2	.0	77	1	5	24	0	17	32	72	2.38	-.75	.85	12	0	7.7	4	9.4	WSW	38	NW	9	3	8	19	7.2	32
NORTH CAROLINA																																
Asheville (U)	2203	------	-----	56	34	45.2	-1.4	74	1+	20	23+	0	17	--	-	1.34	-.77	.79	6	0	T	T	8.7	-	29	S	21	11	11	8	5.1	72
Charlotte	725	991.2	1019.9	62	39	50.2	-.2	79	2	19	25	0	9	39	71	1.31	-1.34	.68	4	1	T	0	8.7	NNW	27	N	12+	12	11	7	4.5	65
Greensboro	891	987.6	1020.2	58	35	46.5	-1.5	76	1	16	25	0	14	36	71	1.93	-.78	1.24	6	0	.2	T	8.1	SW	28	NW	12	11	9	10	5.4	69
Hatteras (R)	4	1017.8	1018.4	62	51	56.7	-.6	75	2	36	23	0	0	48	75	.67	-3.18	.30	7	0	.0	0	13.4	NE	50	SW	22	10	12	8	4.7	64
Raleigh	433	1005.5	1019.4	60	38	48.8	-1.6	78	2+	22	23	0	13	38	72	1.38	-1.47	.55	8	0	T	0	8.7	N	*23	NNE	3+	12	8	10	4.8	66
Wilmington	30	1018.0	--- --	65	42	53.7	-2.0	82	1	24	28	0	8	-	--	.52	-2.07	.37	3	0	.0	0	9.6		32	N	9	15	8	7	4.1	76
Winston-Salem	967	983.8	1019.8	57	37	47.2	-1.4	75	1	16	25	0	11	36	69	1.64	1.15	1.08	6	0	.4	T	8.2	NE	*27	SSW	21	11	10	9	5.4	--
NORTH DAKOTA																																
Bismarck	1650	957.3	1019.4	40	21	30.4	2.0	55	3+	3	22	0	25	23	76	1.43	.90	.77	11	0	5.4	1	13.6	WNW	42	NW	24	6	7	17	7.0	54
Devils Lake (U)	1471	962.8	------	35	20	27.4	2.3	53	3	-4	22	0	24	--	--	1.80	1.13	.71	12	0	4.2	3	10.3	---	35	N	27	3	8	19	7.6	43
Fargo	895	982.1	1017.8	39	22	30.6	3.0	62	3	-2	23	0	23	25	79	1.60	.73	1.00	7	0	.5	T	18.8	S	66	N	25	4	8	18	7.5	35
Williston (U)	1877	950.6	1020.2	42	23	32.1	3.8	59	10	6	22	0	26	24	69	.27	-.31	.09	4	0	.2	T	8.3	---	27	NW	24	5	5	20	7.4	47
OHIO																																
Akron	1210	979.1	1017.9	49	31	40.3	-.1	73	3	11	24	0	17	29	70	1.07	-1.31	.53	10	0	2.5	1	13.1	S	--	---	--	6	12	12	6.3	[illegible]
Cincinnati Obs.	761	------	------	52	35	43.7	-.9	75	3	13	24	0	14	-	--	1.71	-1.35	.88	10	2	4.0	3	6.7	--	28	SW	21	--	-	--	--	55
Cincinnati	869	985.5	1018.2	51	34	42.6	-.8	76	5	11	24	0	16	31	66	1.91	-1.12	1.07	13	2	3.8	2	11.2	SSW	*35	SSW	15	9	4	17	6.9	-
Cleveland (U)	663	------	------	51	37	43.9	.1	74	6	17	23+	0	13	--	--	----	----	.72	--	--	----	--	--	--	--	-	--	--	--	-	--	-
Cleveland	787	988.1	1016.5	51	34	42.7	1.0	74	3	15	24	0	15	33	71	1.14	-1.52	.48	15	2	7.4	3	14.8	S	50	SW	21	5	8	17	7.0	39
Columbus (U)	724	------	------	52	36	43.6	.4	77	3	15	24	0	12	--	--	.87	-1.67	.37	9	0	1.5	1	--	---	--	---	--	--	--	-	---	--
Columbus	815	987.7	1018.2	53	33	43.1	1.2	77	3	9	24	0	14	32	68	.97	-1.89	.43	9	0	2.6	1	10.1	S	45	W	21	8	10	12	6.0	60
Dayton	1002	980.7	1017.9	50	33	41.6	-.3	73	3	12	24	0	18	31	69	2.77	.16	1.64	9	0	2.0	1	12.7	S	47	SW	21	4	10	16	7.1	54
Sandusky (U)	603	993.4	------	49	35	42.0	-.2	71	6	17	23+	0	14	--	-	1.60	-.67	.97	10	2	3.6	3	----	---	42	SW	21	7	11	12	6.2	46
Toledo	676	990.6	1016.6	48	32	40.0	---	70	14	11	23	0	17	32	76	2.11	---	1.08	9	1	3.5	2	12.4	WSW	48	SW	21	3	10	17	7.4	42
Youngstown	1178	974.1	1017.5	50	32	40.9	.3	71	3	13	21	0	16	32	72	1.54	-1.95	1.06	15	1	3.2	1	12.8	SW	*46	W	12	5	10	15	6.7	
OKLAHOMA																																
Oklahoma City	1280	976.0	1020.6	59	35	47.1	-1.9	78	14	17	29	0	12	33	62	1.49	-.33	1.46	3	0	.0	0	14.9	NNW	43	SW	14	21	6	3	2.5	80
Tulsa	672	995.3	1020.0	59	36	47.9	-1.7	78	11+	17	29+	0	10	33	60	2.78	.38	1.49	5	2	.0	0	10.7	S	32	S	14	17	8	5	3.4	79
OREGON																																
Astoria	8	1025.4	1026.0	53	36	44.8	-2.3	62	23	26	19	0	6	41	85	2.57	-7.79	1.25	10	0	.0	0	5.3	SF	*31	SSW	16	9	4	17	6.4	-
Burns (U)	4140	881.8	1028.4	51	22	36.2	-.3	64	5+	11	2+	0	28	25	67	.23	-.94	.15	2	0	2.0	2	---	---	-	-		17	6	7	3.6	--
Eugene	361	1013.2	1027.3	50	34	41.9	-3.4	65	9	23	28	0	13	--	--	1.20	-4.49	.82	8	0	.0	0	3.9	-	*20	SSW	16	5	8	17	7.1	-
Meacham	4050	------	------	43	26	34.7	-.2	63	10	9	19	0	24	-	-	1.67	-2.50	.50	9	0	10.6	7	---	-			--	8	7	15	6.1	-
Medford	1312	978.3	1027.8	49	31	40.1	-4.1	59	23+	22	23+	0	15	35	88	.91	-1.76	.42	6	0	T	0	.6	N	*20	NNW	13	7	4	19	7.0	-
Pendleton	1492	974.3	1029.8	44	31	37.4	-3.7	61	12	22	19+	0	17	32	82	.34	-1.17	.14	7	0	T	T	7.8	SE	*48	W	17	6	4	20	7.6	--
Portland	21	1021.3	1027.3	51	35	42.6	-2.9	59	8	22	30	0	9	37	82	1.47	-3.75	.72	10	0	.0	0	7.2	ESE	32	E	27	10	4	16	5.9	40
Roseburg	505	1007.8	1027.1	50	36	42.9	-3.3	68	7	24	20	0	13	--	-	1.02	-3.49	.55	7	0	.0	0	2.9	---	21	NW	17	1	7	22	8.6	18
Salem	195	1019.3	1031.9	51	33	42.4	-3.0	60	3+	23	29+	0	13	43	84	1.03	-4.93	.67	9	0	.0	0	5.2	S	*23	SSE	16	13	2	15	5.7	
Sexton Summit (R)	3836	------	------	55	41	48.1	6.9	67	11	26	14+	0	6	-	--	.90	-3.64	.59	6	0	2.0	10	---	---	--	---	-	17	5	8	1.0	-
PENNSYLVANIA																																
Allentown	376	1004.1	1018.6	51	32	41.7	-.3	74	4	16	25	0	16	33	74	2.41	-.66	.98	6	2	T	T	9.8	W	--	---	--	6	7	17	6.8	--
Erie	732	------	-- ---	50	35	42.3	1.3	73	3	18	23+	0	14	-		5.60	2.34	2.86	16	2	34.8	24	11.3		--	---	-	3	6	21	7.9	-
Harrisburg	335	1004.6	1018.5	52	35	43.7	-.3	73	15	18	25	0	15	32	66	1.97	-.76	.75	8	1	1.0	1	7.6	WNW	39	SW	21	6	6	18	6.9	52
Philadelphia (U)	26	- ----	------	55	42	48.4	.6	73	4	25	24	0	5	-	--	5.15	2.07	1.65	9	-	- -				--	--		-	-			
Philadelphia	10	1013.5	1018.0	55	38	46.3	.4	74	2	20	24	0	11	35	67	5.71	2.63	3.45	9	2	T	T	10.3	SSW	49	SW	21	8	8	14	6.6	57
Pittsburgh (U)	749	------	------	53	37	44.9	.3	74	15	18	24	0	11	--	--	.76	-1.85	.33	11	-	1.2		-	- -								45
Pittsburgh	1151	986.9	1017.8	51	33	42.0	1.0	72	3+	13	24	0	14	30	67	1.03	-1.56	.39	12	0	3.4	1	11.7	WSW	*40	W	12	6	11	13	6.5	54
Reading (U)	266	1005.8	1017.9	53	37	44.8	.6	74	1	17	25	0	14	-	-	3.86	.81	2.07	9	2	T	T	10.6	--	42	S	21	3	13	14	6.9	40
Scranton	940	983.2	1018.2	49	32	40.4	-.3	76	1	13	25	0	17	30	67	1.31	-1.90	.48	10	0	2.7	2	8.6	WSW	34	SW	16	5	8	17	7.0	42
Shippingport (U)	736	------	------	52	33	42.6	--	73	3+	12	24	0	14	-	--	.83	-- -	.59	8	0	T	T	3.3		%39	NW	12				---	
Williamsport	527	998.6	------	50	33	41.9	.2	76	1	14	25	0	16	-	-	4.75	1.49	3.46	14	-	5.0	5			--	---		6	8	16	6.7	-
RHODE ISLAND																																
Block Island	110	1012.0	1016.5	53	39	45.8	.5	70	1	20	11	0	7	-	--	3.06	-.47	1.65	9	0	T	0	-			-		6	11	13	6.3	
Providence	55	1011.3	1017.4	53	34	43.9	1.3	73	1	16	11	0	14	33	69	3.62	-.12	1.24	12	1	T	0	11.0	NW	*47	S	21	9	9	12	5.9	57
SOUTH CAROLINA																																
Charleston (U)	9	------	------	66	49	57.5	-1.1	80	2	30	25	0	2	-	--	.59	-1.33	.33	5	0	.0	0	9.3	---	31	NE	3	17	9	4	3.4	87
Charleston	41	1017.5	1019.3	66	42	53.8	-2.5	80	2+	25	25+	0	7	45	78	.88	-1.17	.39	4	0	.0	0	9.3	NNE				13	9	8	4.0	--
Columbia	217	1011.1	1019.5	66	39	52.8	-1.1	82	1	20	25	0	11	41	72	.66	-1.59	.45	4	0	.0	0	6.5	SW	22	NNW	9	17	6	7	3.8	75
Florence	146	1013.8	------	66	41	53.4	-.2	82	2	22	25	0	7	-	--	1.40	-.88	.69	4	0	.0	0	---	-		---		16	8	6	3.9	
Greenville	1018	981.4	1019.3	60	39	49.5	-1.8	77	2	21	23+	0	10	35	62	2.62	-.42	2.13	6	1	T	0	9.5	NE	29	W	12+	12	10	8	4.9	67
Spartanburg	801	------	------	61	39	49.8	-1.4	79	2	21	25+	0	9	--	--	2.71	-.26	1.94	6	1	T	0	8.5		*23	NE	3+					--
SOUTH DAKOTA																																
Huron	1282	970.2	1018.8	42	23	32.5	.0	64	10	-1	16	0	23	26	79	1.26	.60	.56	9	1	4.2	3	13.3	WNW	49	NW	21	6	10	14	6.8	54
Rapid City	3165	903.8	1021.0	43	23	33.2	-2.1	66	10	7	16	0	25	23	68	1.48	.93	.69	9	0	12.1	6	13.4	NNW	49	N	2	9	9	12	5.9	57
Sioux Falls	1420	965.1	1018.0	42	23	32.8	.6	62	13	1	16	0	23	23	68	.87	-.24	.52	6	0	4.1	3	13.8	NW	*43	NNW	25	5	8	17	6.9	--
TENNESSEE																																
Bristol	1519	964.3	------	56	33	44.9	-.9	76	2	16	23+	0	16	--	--	1.78	-.78	.40	8	0	.3	T	- --	---	--	---	--	10	7	13	5.8	--
Chattanooga	670	992.4	1020.5	60	35	47.7	-1.4	77	3	19	28	0	15	36	69	2.11	-1.92	1.14	6	0	T	0	7.3	S	26	W	21	12	9	9	5.1	56
Knoxville	950	984.3	1020.3	58	36	47.2	-1.2	77	3	21	23	0	12	36	68	1.98	-1.17	1.03	8	0	.6	T	8.4	WSW	36	W	21	10	8	12	5.5	55
Memphis (U)	271	------	------	60	42	51.2	-.9	82	3	25	24+	0	8	--	--	2.42	-1.89	1.34	6	0	T	T	----	---	--	---	--	--	--	--	---	--

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F or above	Min 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb	Mb.	°F	°F	°F.	°F.	°F		°F.		#		°F.	%	In.	In.	In.			In.	In.	M p h		M. p. h.			0–3	4–7	8–10	0–10	%
TENNESSEE (Cont'd.)																																
Memphis	263	1005.4	1020.3	62	39	50.6	0.0	81	3	20	30	0	10	36	62	2.58	-1.98	1.47	6	1	T	T	11.1	SSW	32	NW	25	14	6	10	4.5	72
Nashville	577	1000.2	1020.1	59	37	47.7	-1.6	80	3	21	30	0	14	36	68	1.73	-1.68	.92	6	0	T	T	9.0	S	32	W	21	10	10	10	5.1	60
Oak Ridge (R)	905	986.1	------	59	38	48.4	3.0	80	3	24	23+	0	10	--	--	2.23	-1.75	1.10	5	0	T	T	5.3	---	32	---	21	9	9	12	5.7	--
TEXAS																																
Abilene	1759	958.7	1020.5	65	39	52.0	-1.7	82	14	22	16+	0	8	30	47	.45	-.57	.23	2	2	.0	0	11.7	SSW	--	---	--	20	4	6	2.7	--
Amarillo	3590	892.3	1020.2	59	29	43.7	-1.5	79	11	15	16	0	20	19	42	T	-.88	T	0	0	T	0	11.5	SW	43	W	2	23	4	3	2.3	91
Austin	615	1000.0	1021.5	69	46	57.3	-1.9	85	1	31	27	0	1	39	56	2.13	-.22	1.39	5	3	.0	0	10.7	N	31	N	8+	15	7	8	4.2	66
Brownsville	16	1017.6	1020.1	75	54	64.1	-3.4	86	1+	35	30	0	0	53	71	.67	-.88	.27	7	1	.0	0	13.3	SSE	38	N	15	10	7	13	5.5	57
Corpus Christi	11	1019.6	1020.7	74	51	62.1	-2.8	88	15	32	30	0	1	47	62	1.13	-.61	.93	5	3	.0	0	10.6	SSE	31	N	21	8	10	12	5.5	81
Dallas	487	1002.0	1021.0	65	42	53.3	-2.5	82	11	24	29	0	5	38	60	3.53	1.10	2.42	5	3	.0	0	11.0	NNW	41	SW	14	18	6	6	3.2	73
Del Rio	1091	986.5	1021.0	70	46	58.1	-2.1	81	1+	33	27	0	0	32	42	.02	-.78	.02	1	0	.0	0	9.4	---	34	NW	20	12	13	5	4.2	69
El Paso	3920	890.6	1020.8	63	34	48.4	-3.6	75	7+	21	22	0	13	16	29	T	-.38	T	0	0	.0	0	10.6	N	49	SW	1	22	5	3	2.2	84
Fort Worth	544	1000.0	1021.2	65	41	52.7	-3.1	82	11	25	29	0	6	36	58	2.61	.37	2.09	4	3	.0	0	13.8	NNW	*38	NW	15	18	6	6	3.1	--
Galveston (U)	7	-- ---	------	70	57	63.1	-.5	81	2	42	9	0	0	--	--	.78	-3.06	.65	4	--	.0	0	12.9	- -	36	NW	21	--	--	--	---	72
Galveston	5	1018.6	1020.9	69	55	62.1	-1.3	82	2	40	27+	0	0	50	67	1.14	-3.05	.91	4	3	.0	0	13.4	NNE	--	---	--	14	8	8	4.5	--
Houston (U)	11	1015.6	- ----	71	52	61.3	-.6	85	2	36	27	0	0	--	--	3.59	-.36	3.17	6	2	.0	0	10.2	---	30	S	14	15	8	7	4.3	69
Houston	50	1018.3	1021.2	71	48	59.9	-1.0	86	2	31	27	0	1	46	64	1.52	-2.66	1.05	6	2	.0	0	12.1	NNW	--	---	--	13	9	8	4.7	--
Laredo	500	1004.7	1020.1	74	52	62.8	-3.2	90	1	35	27	1	0	43	53	.09	-.88	.05	2	0	.0	0	10.7	SSE	*27	NNW	15	8	12	10	5.7	--
Lubbock	3243	907.9	1020.3	62	29	45.3	-3.3	82	11	16	29	0	22	25	48	T	-.63	T	0	0	T	0	14.0	SW	*48	W	2	23	4	3	2.3	--
Midland	2854	920.4	1020.7	64	36	50.2	-2.6	80	1	22	16	0	8	25	42	T	-.67	T	0	1	T	0	7.8	SW	*27	N	15	19	7	4	2.7	--
Port Arthur	16	1019.6	1021.0	71	48	59.3	.0	82	2+	29	27	0	3	48	70	2.64	-.92	1.10	6	4	.0	0	12.2	N	42	N	21	13	10	7	4.4	62
San Angelo	1903	952.9	1020.9	65	40	52.8	-3.6	81	14	25	29	0	4	33	50	.42	-.67	.21	2	2	.0	0	10.1	SW	*29	NNE	7+	19	5	6	2.9	--
San Antonio	792	995.6	1020.9	69	46	57.8	-2.0	83	20	31	27	0	1	39	54	1.13	-.27	.84	5	3	.0	0	9.2	N	34	SW	13+	12	9	9	4.7	68
Victoria	110	1016.3	1020.7	72	49	60.5	-3.3	85	15	34	27	0	0	44	58	.30	-1.93	.25	5	1	.0	0	10.5	---	%48	N	2	9	12	9	5.0	--
Waco	500	999.7	1021.0	67	43	54.9	-2.9	83	11	27	27	0	4	38	56	2.34	.09	1.63	4	3	.0	0	14.0	NNW	--	---	--	17	4	9	3.8	--
Wichita Falls	1020	983.7	1020.8	64	38	50.8	-.9	82	14	19	29	0	10	32	54	.75	-.64	.60	3	2	.0	0	10.5	S	*27	NNW	21	20	5	5	2.6	--
UTAH																																
Milford	5028	851.2	1028.4	50	12	30.8	-6.6	72	10	-5	20	0	30	--	--	.06	-.48	.06	2	0	.4	T	----	---	--	---	--	20	9	1	2.2	--
Salt Lake City	4220	876.1	1029.1	46	23	34.3	-5.0	63	9+	13	15+	0	27	24	71	.56	-.86	.19	6	0	7.0	4	6.2	SSE	27	NW	13	16	7	7	4.2	81
VERMONT																																
Burlington	331	1001.4	1016.3	46	30	37.9	1.5	68	1	2	24	0	18	-	—	1.67	-1.18	.48	13	0	10.3	3	9.0	S	40	S	11+	2	10	18	8.0	39
VIRGINIA																																
Lynchburg	947	984.2	---- -	55	36	45.6	-1.7	71	11	14	25	0	11	--	--	2.26	-.11	1.52	6	0	T	T	8.2	---	40	S	21	9	6	15	6.0	45
Norfolk	26	1018.2	1019.5	59	43	51.1	-.3	77	1	28	28	0	4	41	71	1.51	-1.16	.70	10	0	T	0	11.6	NNE	31	W	21	10	9	11	5.3	63
Richmond	162	1013.2	1019.6	58	37	47.6	-.8	74	16	18	24	0	13	37	71	6.11	3.62	4.07	8	1	T	0	7.8	S	27	NW	12+	9	6	15	6.0	46
Roanoke	1174	976.0	1019.6	55	36	45.6	-1.3	74	14	14	25	0	14	33	67	1.84	-.97	1.60	6	0	.1	T	7.8	NW	--	---	--	6	10	14	6.6	--
WASHINGTON																																
Olympia	190	1018.6	1026.5	49	34	41.5	-2.0	62	9	24	20	0	17	37	85	2.81	-3.96	1.99	10	0	.0	0	5.8	SW	*31	W	17	4	5	21	7.6	—
Seattle (U)	14	--	----	51	41	45.8	-1.2	61	9	30	29	0	1	-	--	1.53	-2.93	.67	10	0	.0	0	7.7	---	34	SW	16	5	7	18	6.9	39
Seattle	11	1025.7	1026.7	-	-	----	--	--		-	--	--	-	39	85	----	---	- --	--	--	----	--	5.9	SSE	--	---	--	--	--	--	---	--
Seattle-Tacoma	376	1012.5	1026.9	48	37	42.6	-1.3	58	9	26	19	0	8	39	89	1.59	-2.96	.87	8	0	.0	0	10.6	N	*42	SW	12	8	3	19	6.9	--
Spokane	2357	958.0	1029.4	39	27	32.7	-3.0	49	12	14	28	0	22	28	84	.34	-1.54	.26	5	0	1.5	1	5.6	NE	40	SW	17	7	4	19	6.9	37
Stampede Pass (R)	3958	886.6	1028.8	35	25	30.0	-1.6	45	5+	14	19+	0	26	--	--	7.60	-5.66	2.41	11	0	40.1	21	-- -	---	--	---	--	7	5	18	6.9	--
Tatoosh (R)	101	1022.0	1025.4	51	43	46.9	-.5	59	28	38	27	0	0	41	81	5.13	-4.39	1.53	14	0	T	0	18.4	E	50	S	15	7	7	16	6.4	42
Walla Walla (U)	949	992.6	1030.5	43	33	38.4	-4.1	61	12+	23	18	0	13	-	--	.53	-1.33	.25	8	0	1.0	1	4.1	---	35	W	17	4	5	21	7.9	39
Yakima	1061	989.5	1029.9	43	27	35.2	-2.9	59	12	10	19	0	22	29	80	.09	-.89	.04	3	0	.2	T	3.4	W	*35	WNW	17	8	2	20	7.3	--
WEST VIRGINIA																																
Charleston	950	982.5	1018.6	56	34	45.3	-.5	79	3	11	24	0	14	32	62	1.48	-1.69	.57	11	0	1.4	1	7.1	SW	*27	S	21	6	11	13	6.8	--
Elkins	1970	-- ---	-- -	52	28	39.7	1.1	77	15	3	24	0	21	28	--	1.56	-1.31	.60	9	0	1.2	1	6.7	WSW	*33	WNW	22	7	8	15	6.7	--
Huntington (U)	565	----	- - --	58	35	46.3	-.4	80	3+	14	24	0	13	-	--	.99	-1.80	.56	9	0	1.0	1	----	- -	--	---	--	--	--	--	---	--
Parkersburg (U)	615	- ---	- -	55	34	44.9	.1	77	3	10	24	0	14	--	--	1.29	-1.38	.70	10	0	1.5	1	6.0	---	40	S	21	10	11	9	5.4	56
WISCONSIN																																
Green Bay	689	991.5	1014.6	41	26	33.6	.1	64	1	3	23	0	24	28	78	2.13	.19	1.13	8	1	3.7	2	13.4	SW	52	SW	15	2	5	23	8.2	28
La Crosse	652	990.5	1015.8	42	27	34.3	.0	69	1	2	23	0	23	29	75	1.66	-.15	.77	8	0	6.7	5	10.5	S	*32	NW	15	3	8	19	7.7	--
Madison	877	979.3	1015.5	44	28	35.7	.4	71	1	4	23	0	22	29	75	2.78	.49	1.48	8	2	2.0	1	12.9	W	45	W	15	2	6	22	8.1	37
Milwaukee	672	989.5	1015.4	45	29	36.7	-.6	66	1	8	23	0	21	29	74	1.62	-.49	.87	6	1	.3	T	15.5	SSW	54	SW	15+	3	8	19	7.8	39
WYOMING																																
Casper	5322	840.8	1023.4	40	19	29.8	-3.5	60	11+	-7	20	0	27	19	66	1.30	.48	.51	8	0	19.9	9	16.8	SW	*40	WSW	13	9	11	10	5.5	--
Cheyenne	6131	813.1	1021.9	42	21	31.9	-3.2	64	13	3	4	0	27	15	55	1.27	.57	.81	9	0	13.9	8	20.8	WNW	58	NW	2	14	7	9	4.6	50
Lander	5563	839.8	1025.8	42	17	29.2	-.8	63	9+	-6	20	0	28	17	64	1.19	.32	.55	8	0	19.2	9	5.3	---	33	SW	3	12	8	10	5.0	68
Sheridan	3942	888.9	1024.1	47	22	34.3	1.2	72	10	2	15	0	27	21	64	.97	.04	.45	7	0	8.2	4	10.2	WNW	43	NW	3+	9	8	13	5.5	59
PACIFIC AREA																																
Canton Island	9	1008.8	1009.1	88	77	82.5	-1.2	90	20	72	22+	1	0	72	74	3.00	2.73	1.99	4	0	.0	0	15.4	E	*35	SW	23	1	9	20	8.3	--
Hilo	31	1012.5	1013.9	80	65	72.6	-.4	88	30	59	22	0	0	67	84	22.76	10.37	7.86	24	0	.0	0	8.2	SW	*25	SE	30	3	8	19	7.9	21
Honolulu	7	1013.9	1014.6	82	69	75.5	-.2	85	2+	64	30	0	0	66	75	7.24	5.45	4.36	12	2	.0	0	7.2	ENE	31	SE	14+	6	10	14	6.6	65
Koror (R)	94	1005.4	1009.1	87	75	81.1	-.3	90	14+	72	8+	3	0	77	87	12.88	1.04	3.12	23	5	.0	0	----	---	--	---	--	0	2	28	9.6	--
Lihue	115	1008.5	1014.2	82	69	75.1	1.5	85	23	60	30	0	0	68	83	6.43	2.19	2.03	18	1	.0	0	8.4	ENE	25	NE	11	3	11	16	7.2	45
Majuro Island	10	1008.8	1009.1	85	77	81.3	---	88	28	73	3	0	0	75	82	18.48	----	4.53	22	1	.0	0	----	---	--	---	--	2	9	19	7.8	--
Ponape (R)	119	1003.1	1008.5	88	74	80.8	-.5	91	11+	71	19	8	0	76	89	15.68	1.21	3.47	25	6	.0	0	----	---	--	---	--	1	8	21	8.3	--
Truk, Moen Is.	8	1008.5	1008.8	87	77	81.7	.9	89	6	74	4+	0	0	77	84	12.33	1.23	2.12	26	1	.0	0	----	---	--	---	--	0	2	28	9.3	--
Wake Island	11	1013.5	1013.9	84	76	80.2	.3	87	1+	68	3	0	0	71	75	5.53	2.36	2.16	17	1	.0	0	18.6	ENE	*40	ENE	14	9	12	9	5.5	—
Yap (R)	53	1006.8	1008.8	87	76	81.4	-.4	93	21	72	10	6	0	77	86	11.97	1.25	2.26	24	4	.0	0	----	---	--	---	—	1	3	26	9.2	—
WEST INDIES																																
San Juan, P.R.	15	1010.2	------	85	70	77.7	---	90	3	66	24	1	0	72	83	3.18	----	.93	20	1	.0	0	----	---	32	SW	4	6	17	7	5.5	73
San Juan, P.R. (U)	47	--- -	-----	84	73	78.4	.0	90	3	70	7	1	0	--	--	3.12	-3.25	1.28	18	1	.0	0	----	---	--	---	--	--	--	--	---	--
Swan Island	31	1012.5	--- -	84	75	79.1	-.7	86	1+	68	28	0	0	--	--	6.84	-.26	2.67	16	3	.0	0	----	---	—	---	—	1	8	21	8.1	--
ALASKA																																
Anchorage	92	998.6	1004.1	25	8	16.5	-5.8	47	27+	21	17	0	28	5	57	2.33	1.33	.65	14	0	32.4	18	5.8	NNE	*29	WNW	21	4	6	20	7.4	36
Annette	110	1014.9	1019.0	45	35	40.2	-.5	51	24	28	5	0	10	37	85	21.45	11.23	3.89	21	0	.3	2	12.3	SE	*40	SE	11	2	6	22	8.4	--
Barrow	22	1015.9	1016.6	-5	-17	-10.7	-11.4	16	28	-38	16	0	30	-20	62	.13	-.14	.06	7	0	1.3	5	10.2	NE	30	SW	28	⁑3	⁑6	⁑9	---	--
Bethel	10	1007.8	1009.3	13	-3	4.6	-12.4	38	18	-22	16	0	30	0	81	.32	-.65	.16	5	0	3.9	4	9.3	NNE	*27	SSE	19	10	7	13	5.6	--
Cold Bay	90	1000.7	1005.1	33	26	29.4	-5.3	47	17	14	10	0	27	25	82	1.73	-2.09	.91	14	0	4.0	3	17.8	N	*52	ESE	19	2	7	21	8.1	--
Cordova	40	1000.3	1002.3	38	24	31.2	.1	50	23	-6	17	0	21	27	84	15.57	5.02	3.55	28	1	47.9	20	8.7	E	*40	ESE	26	1	5	24	8.8	--
Fairbanks	436	992.9	1011.5	5	-15	-4.8	-7.9	44	26+	-41	14	0	30	-11	70	.98	.35	.53	16	0	14.1	16	4.4	N	*23	W	28	6	6	18	7.0	--
Juneau	15	1011.5	1012.5	42	35	38.4	5.3	49	25+	18	1	0	11	35	85	11.22	5.30	1.84	26	0	5.2	10	13.2	ESE	54	SE	2	0	1	29	9.7	5
King Salmon	44	1003.4	1005.8	20	4	11.6	-10.5	45	19	-25	16	0	29	5	75	1.06	-.26	.24	12	0	5.1	4	12.0	N	*35	NNE	23+	13	4	13	5.1	--
Kotzebue	10	1012.9	1013.8	-1	-14	-7.9	-15.4	21	21	-32	14+	0	30	-13	77	.18	-.25	.14	4	0	8.4	15	9.6	E	*46	E	17+	15	4	11	4.5	--
McGrath	334	997.6	1011.3	1	-16	-7.6	-13.1	40	27	-38	16+	0	30	-20	58	1.22	.13	.57	10	0	10.9	10	2.8	WNW	*17	SSW	27	14	3	13	4.9	--
Nome	13	1011.5	1012.3	11	-2	4.1	-12.7	33	19	-17	15	0	30	-2	75	.19	-.95	.09	7	0	2.3	4	9.0	NW	40	NE	17	10	10	10	5.4	49
Northway	1713	944.1	1010.5	2	-15	-6.3	-4.1	35	22	-39	7	0	30	--	--	.82	.46	.20	16	0	14.1	27	----	---	—	---	--	4	3	23	8.2	--
St. Paul Island	22	1006.1	1007.1	33	26	29.1	-4.7	41	17	16	28	0	25	24	78	2.07	-.52	.90	17	0	5.8	7	----	---	--	---	--	1	4	25	8.5	--
Yakutat	28	1005.8	1007.0	40	30	35.2	1.5	47	26+	11	1	0	19	34	94	43.88	28.42	7.13	30	0	67.8	20	16.2	ESE	*62	SE	22	0	1	29	9.8	--

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.

+ And also on a later date or dates.

% Peak gust

a Maximum hourly average

# Number of days maximum 70° or above for Alaskan stations.

Ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.

⁑ Sun continuously below horizon after 18th.

HEATING DEGREE DAYS

Table 3

(Base 65°F.)

NOVEMBER 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	436	500	532
Mobile	292	293	247
Montgomery	373	399	373
ARIZONA			
Flagstaff	928	1810	1832
Phoenix (U)	167	477	195
Phoenix	214	261	245
Prescott	651	898	877
Tucson	223	270	246
Winslow	858	1104	957
Yuma	103	116	105
ARKANSAS			
Ft. Smith	499	541	575
Little Rock	433	465	525
Texarkana	377	406	386
CALIFORNIA			
Bakersfield	250	342	314
Bishop	526	839	872
Blue Canyon	433	1155	1184
Burbank	74	135	256
Eureka (U)	489	1621	1525
Fresno	347	482	431
Los Angeles (U)	42	76	198
Los Angeles	63	105	396
Mt. Shasta (R)	652	1434	1387
Oakland	329	734	730
Red Bluff	273	410	378
Sacramento (U)	294	419	413
Sacramento	349	501	477
Sandberg (R)	412	781	702
San Diego	75	110	241
San Francisco (U)	172	852	841
San Francisco	296	741	873
San Jose	255	415	411
Santa Maria	225	801	722
COLORADO			
Alamosa	1185	2243	2207
Colorado Springs	898	1379	1352
Denver	829	1193	1332
Grand Junction	914	1203	1161
Pueblo	836	1119	1228
CONNECTICUT			
Bridgeport	597	1057	1045
Hartford	698	1399	1198
New Haven	639	1199	1137
DELAWARE			
Wilmington	589	960	914
DIST. OF COLUMBIA			
Washington (U)	520	757	773
Washington	560	837	793
FLORIDA			
Apalachicola (U)	188	189	171
Daytona Beach	165	165	83
Fort Myers	108	108	25
Jacksonville	195	196	164
Key West (U)	9	9	0
Miami (U)	50	50	5
Miami	37	37	8
Miami Beach	20	20	0
Orlando	137	137	61
Pensacola (U)	243	244	195
Tallahassee	266	281	240
Tampa	120	120	60
West Palm Beach	54	54	7
GEORGIA			
Athens	455	549	495
Atlanta	436	490	511
Augusta	373	432	341
Columbus	396	422	404
Macon	348	376	343
Rome	521	629	583
Savannah	302	330	263
IDAHO			
Boise	883	1482	1286
Lewiston	837	1443	1286
Pocatello	1018	1756	1543
ILLINOIS			
Cairo (U)	507	562	681
Chicago (U)	683	899	
Chicago	724	969	1205
Chicago University	720	989	
Moline	790	1101	1253
Peoria	747	956	1195
Springfield	706	893	1127
INDIANA			
Evansville	673	853	844
Ft. Wayne	738	1109	1260
Indianapolis	711	965	1090
South Bend	749	1137	1289
IOWA			
Burlington	749	978	1184
Des Moines	807	1086	1269
Dubuque	889	1322	1511
Keokuk (U)	691	856	
Sioux City	838	1158	1443
KANSAS			
Concordia (U)	693	869	1019
Dodge City	688	842	971
Goodland	866	1219	1333
Topeka (U)	639	745	914
Topeka	674	825	1010
Wichita	628	741	848
KENTUCKY			
Lexington	650	874	951
Louisville	624	822	862
Pikeville (U)	534		
LOUISIANA			
Baton Rouge	271	276	242
Lake Charles	225	226	240
New Orleans (U)	185	185	146
New Orleans	215	215	176
Shreveport	334	357	358
MAINE			
Caribou	1000	2387	2356
Greenville (U)	974	2271	
Portland	806	1757	1610
MARYLAND			
Baltimore (U)	469	657	725
Baltimore	580	909	910
Frederick	644	1087	911
MASSACHUSETTS			
Blue Hill Obs. (R)	690	1398	
Boston	560	1085	1017
Nantucket	561	1108	1154
Pittsfield	814	1758	1687
MICHIGAN			
Alpena (U)	857	1778	1744
Detroit	716	1139	1232
Detroit (Willow Run)	744	1184	1258
East Lansing (U)	765	1237	
Escanaba (U)	893	1783	1892
Grand Rapids	757	1290	1471
Marquette (U)	920	1895	1868
Muskegon	729	1299	1483
S. Ste. Marie	952	2111	2177
MINNESOTA			
Duluth (U)	1097	2274	2140
Duluth	1100	2237	2236
Internat. Falls	1138	2381	2490
Minneapolis	920	1424	1601
Rochester	984	1562	1718
St. Cloud	1011	1783	1948
MISSISSIPPI			
Jackson	377	407	379
Meridian	395	434	428
Vicksburg (U)	321	334	319
MISSOURI			
Columbia	635	754	984
Kansas City	622	702	905
St. Joseph	703	860	1000
St. Louis (U)	570	655	810
St. Louis	600	702	878
Springfield	626	738	933
MONTANA			
Billings	820	1442	1595
Glasgow	956	1816	1948
Great Falls	790	1642	1765
Havre (U)	885	1709	1915
Helena	967	1925	2038
Kalispell	1056	2176	2085
Miles City	913	1526	1695
Missoula	1024	2020	1987
NEBRASKA			
Grand Island	803	1123	1281
Lincoln (U)	719	922	1137
Norfolk	842	1223	1464
North Platte	890	1356	1409
Omaha	752	996	1207
Scottsbluff	955	1458	1460
Valentine (U)	957	1477	1518
NEVADA			
Elko	1028	1948	1724
Ely	1025	1939	1749
Las Vegas	427	512	405
Reno	838	1545	1440
Tonopah	750	1270	1246
Winnemucca	922	1681	1527
NEW HAMPSHIRE			
Concord	799	1754	1636
Mt. Washington	1313	4315	
NEW JERSEY			
Atlantic City (U)	527	781	766
Newark	565	937	951
Trenton (U)	565	938	922
NEW MEXICO			
Albuquerque	915	1110	858
Clayton	755	1049	1064
Roswell	603	710	665
NEW YORK			
Albany	749	1513	1386
Binghamton	804	1637	1623
Buffalo	687	1230	1354
New York (U)	545	874	863
New York	516	810	824
Rochester	715	1342	1375
Schenectady	700	1374	
Syracuse	710	1338	1256
NORTH CAROLINA			
Asheville (U)	586	868	864
Charlotte	449	582	592
Greensboro	551	798	741
Hatteras (R)	264	273	307
Raleigh	489	676	603
Wilmington	353	394	361
Winston-Salem	526	766	702
NORTH DAKOTA			
Bismarck	1034	1871	1989
Devils Lake (U)	1121	2132	2235
Fargo	1025	1773	1989
Grand Forks	1069	2023	
Pembina	1029	1934	
Williston (U)	981	1880	2038
OHIO			
Akron	735	1255	1216
Cincinnati (U)	556	700	831
Cincinnati	663	899	1026
Cleveland	665	1039	1124
Columbus	651	946	1107
Dayton	697	982	1096
Sandusky (U)	683	1000	1077
Toledo	745	1205	1257
Youngstown	719	1263	1189
OKLAHOMA			
Oklahoma City	531	703	648
Tulsa	509	550	632
OREGON			
Astoria	602	1566	1270
Burns (U)	856	1735	1673
Eugene	689	1324	1183
Meacham	902	2026	1992
Medford	739	1259	1027
Pendleton	824	1339	1174
Portland (U)	569	1025	926
Portland	662	1258	1067
Roseburg	656	1224	
Salem	670	1259	1071
Sexton Summit (R)	499	1477	1496
PENNSYLVANIA			
Allentown	694	1228	1154
Harrisburg	631	1079	1007
Philadelphia (U)	491	745	768
Philadelphia	556	889	889
Pittsburgh (U)	595	911	966
Pittsburgh	683	1136	1211
Reading (U)	604	980	935
Scranton	736	1428	1215
Williamsport	688	1231	1193
RHODE ISLAND			
Block Island	571	1033	1036
Providence	630	1244	1186
SOUTH CAROLINA			
Charleston (U)	250	266	248
Charleston	347	397	322
Columbia	372	440	420
Florence	359	419	441
Greenville	458	614	552
Spartanburg	456	604	557
SOUTH DAKOTA			
Huron	970	1521	1622
Pierre	937	1451	
Rapid City	950	1471	1640
Sioux Falls	957	1433	1648
TENNESSEE			
Bristol	595	811	873
Chattanooga	514	625	670
Knoxville	524	630	710
Memphis	439	487	575
Nashville	512	595	647
TEXAS			
Abilene	396	432	453
Amarillo	634	777	871
Austin	250	250	244
Brownsville	108	108	59
Corpus Christi	156	156	113
Dallas	355	369	352
Del Rio	216	219	214
El Paso	494	559	460
Ft. Worth	374	395	357
Galveston (U)	147	147	131
Galveston	169	169	132
Houston (U)	174	174	162
Houston	204	204	188
Laredo	135	135	91
Lubbock	584	686	688
Midland	439	493	
Port Arthur	231	235	238
TEXAS (Cont'd.)			
San Angelo	365	398	352
San Antonio	229	232	226
Victoria	180	180	131
Waco	314	329	295
Witchita Falls	425	462	524
UTAH			
Milford	1017	1523	1404
Salt Lake City	915	1383	1240
VERMONT			
Burlington	807	1672	1617
VIRGINIA			
Lynchburg	575	868	816
Norfolk	422	512	569
Richmond	519	743	741
Roanoke	573	867	826
WASHINGTON			
Olympia	695	1579	1460
Seattle (U)	567	1168	1097
Seattle-Tacoma	663	1504	1382
Spokane	963	1787	1637
Stampede Pass (R)	1043	2799	2628
Tatoosh Island (R)	536	1886	1832
Walla Walla (U)	794	1243	1076
Yakima	890	1556	1410
WEST VIRGINIA			
Charleston	583	861	886
Elkins	751	1288	1300
Huntington (U)	552	760	794
Parkersburg (U)	596	874	928
WISCONSIN			
Green Bay	935	1694	1733
La Crosse	913	1358	1551
Madison	870	1355	1544
Milwaukee	840	1360	1445
WYOMING			
Casper	1049	1711	1796
Cheyenne	989	1658	1787
Lander	1068	1742	1956
Sheridan	915	1626	1842
ALASKA			
Anchorage	1448	3675	3220
Annette	737	2260	2126
Barrow	2276	6797	6055
Bethel	1812	4180	3767
Cold Bay	1061	3255	
Cordova	1006	3303	3000
Fairbanks	2097	4676	4077
Juneau	793	2736	2807
King Salmon	1601	3968	
Kotzebue	2195	5303	4500
McGrath	2183	4809	4137
Nome	1828	4657	4191
Northway	2142	5260	4489
St. Paul	1070	3728	3449
Yakutat	886	3025	2918

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4

NOVEMBER 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
CONNECTICUT Fairfield County	Oct.31-Nov.1	P.m.31st-early p.m. 1st							Rain	Heavy rains in southwest corner of State caused street flooding in Bridgeport area, but property damage light. No reports of stream flooding. Rainfall in affected area ranged from 2 inches to a high of 4.10 inches at North Stamford.
SOUTH DAKOTA Lawrence County	1	6-8 a.m.				1	3		Snow	2 automobile accidents resulted from icy, snow-packed highways.
IOWA Traer, Tama County	1	7:30 a.m.				3	3	1	Fog	4 cars, a truck, and a gasoline transport collided.
MARYLAND Frederick (2 miles south of), Frederick County	1	5:10 p.m.					°4	C	Electrical and rain	Fire caused by lightning burned 55-cow dairy barn. Lightning came during peak of heavy rainstorm, striking corner of barn while cows were being milked. Losses from fire included about 2 tons of soybean meal and $20,000 worth of hay and straw stored in barn.
MARYLAND Frederick County	1	P.m.							Rain	Cloudburst swept Frederick and western portion of Frederick County, taking several small bridges in Middletown Valley.
	1									Minor storm also reported at Houston, Mo.
DELAWARE and MARYLAND Delmar Peninsula	1-2	6 p.m.1st-9 a.m.2d			1	7	6		Rain	Heavy rains during night of 1st and early morning of 2d caused damages resulting in losses which possibly exceeded $500,000. Numerous roads and basements flooded; dams, roads, and bridges damaged or washed out; cars swept from roads; motorists injured or killed in automobile accidents caused by poor visibility and/or slippery highways; topsoils eroded; soybean crops damaged; 22,000 chickens drowned in 1 flock. In some places flooding reported as greatest of memory. At Royal Oak, Talbot County, total of 8.90 inches of precipitation occurred in a 14-hour period, 7 p.m., on 1st to 9 a.m., on 2d.
TEXAS Matador, Motley County	1-2	10:30 p.m.1st-noon 2d	30	*5-6			4	4	Wind and dust	Winds estimated at 70 to 75 m.p.h. Visibility reduced to zero. Trees uprooted, antennas and shingles blown from roofs. Homes and other buildings filled with dirt. Unpicked cotton buried in dust. Storm moved eastward.
PENNSYLVANIA Central and southeastern portions	1-2						5	4	Rain	Williamsport area and extreme southeastern counties hardest hit, with exceptionally heavy rain from showers and thunderstorms. In Williamsport area extensive damage to streets, highways, bridges, buildings and contents, and crops resulted when small streams overflowed their banks. Local flooding of streets in Philadelphia area caused several washouts while other streets blocked because of landslides.
	1-2									Minor storm also reported in Juneau area, Alaska.
COLORADO Northeastern portion	1-3	Afternoon 1st-morning 3d			2		4		Snow, rain, wind, and electrical	Snowstorm and blizzard, most severe since 1949, swept across eastern Colorado, beginning in afternoon of 1st as thunderstorm with rain changing to snow during night. Snow accompanied by gale-force winds, continuing through 2d and diminishing to snow flurries by morning of 3d. Storm severe northeast and along eastern border, where up to 12 inches of snow fell and drifted into 10-foot drifts. Roads blocked, schools closed, powerlines disrupted, and many minor accidents occurred. Some losses of livestock; 1 farmer lost 16 head of cattle which were driven against fence by storm and were presumably killed by lightning; another lost 33 head, drowned when driven into river by storm; many other small losses by stock being covered by snow and suffocated. 2 deaths attributed to storm. Lineman working southeast of Lamar electrocuted while repairing damaged lines. Another man found dead in his stalled car near Merino on morning of 3d, apparently a victim of monoxide poisoning. Estimated damage from heavy snow at Lamar $3,500. Livestock losses over area estimated around $15,000.
CALIFORNIA Central coast, Sacramento Valley, and San Bernardino and Riverside Counties	1-3						3		Wind	Heaviest damage to trees and powerlines in east San Francisco Bay region. Billboard blown down and plate-glass window shattered in market in Oakland. Santa Ana wind conditions experienced in southern California on 3d. Storm moved southeastward.
WYOMING Eastern half	1-3						3	4	Snow and wind	This snowstorm caused by low-pressure system moving northward from New Mexico through Colorado, Kansas, Nebraska, and into the Dakotas. Power services interrupted at Lander, Riverton, and Dubois by poles blown down near Boysen Dam. Also interrupted services at Ucross and near Keeline. Bus and air

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
WYOMING (Cont'd)										traffic curtailed throughout eastern Wyoming. Main highways and county roads blocked by blowing snow. As result of snowstorm, range grass toughened and made more palatable but supplemental feeding started earlier than usual. Livestock losses estimated at $17,000.
FLORIDA Entire east coast	1-8								Wind and tides	Persistent northeast winds associated with tropical disturbance brought abnormally high tides to much of east Florida coast during 1st week of month. High tides caused extensive property damage, and beach erosion estimated at more than $1 million in Jacksonville-Neptune Beach area alone. Numerous beach roads and ocean-front properties either flooded or undermined at various other points along east coast by pounding surf.
KANSAS Sherman and Cheyenne Counties	2	Day					4		Snow, wind, dust, and electrical	Storm began with thunderstorm about daylight; wind increased in velocity, reaching 40 to 45 m.p.h., during day. At times visibility reduced to less than 20 feet by heavy snow and some dust. Snow depths over 2 counties ranged from 2 to 9 inches; roads blocked by drifted snow, and traffic almost completely halted. Heavy snow on tree limbs damaged, many of them by breakage. Some wires had snow deposit 3 inches in diameter, clinging to them after wind ceased. Livestock losses in Sherman County estimated at $6,000. Storm moved southeastward.
NEBRASKA Springview (near), Keya Paha County	2		Short	Narrow	0	0			Tornado	Cooperative observer reported "tornado sighted, no damage." Surrounding terrain sparsely settled range country. Storm moved northeastward.
	2									Minor storm also reported near North Loup, Nebr.
NEBRASKA Panhandle, extreme southwest, and extreme north-central	2-3	A.m. 2d-a.m. 3d.			2		3	1	Blizzard	Drifts up to 12 feet high. 39 cattle killed. 2 persons frozen to death when lost in blizzard. Storm moved northeastward.
SOUTH DAKOTA Western third	2-3				1	4	4		Snow and wind	In northern Black Hills 37 inches of snow fell within 32 hours. Lighter amounts over surrounding prairie, but high winds drifted snow, blocking roads and stranding motorists. In Deadwood-Lead area it was worst storm in recent years. Death and injuries due to traffic mishaps. Widespread utility outages. High winds on 2d razed new drive-in theater screen at Martin designed to withstand 80-m.p.h., winds. In southern Black Hills, 2-million board feet of Ponderosa pine destroyed, with whole trees uprooted (not included in damage estimate)
FLORIDA Lignum Vitae Key, Monroe County	3	3 p.m.			0	0			Waterspout and tornado	Damages limited to trees torn down along path which was only about 100 yards over land. Storm moved eastward.
TEXAS Port Acres, Jefferson County	5	11:50 a.m.	**400	20	0	0	3		Tornado, wind, and rain	2 houses lifted from foundations, 6 garages and 1 carport blown down. Roofs torn from barns and outbuildings. Storm moved northward.
MONTANA North-central portion	12	8:30 a.m.-4:30 p.m.	125	*50-60			4	4	Wind and fire	High wind reported from Great Falls northward to Canadian Border. At Great Falls peak gusts over 70 m.p.h., at Browning peak gusts over 90 m.p.h. TV antennas bent, some damage to roofs, and windows broken at Great Falls and Browning. Estimated damage at Great Falls $1,000. Damage exceeded $40,000 in Browning area, due to wind-driven fire. Storm moved southwestward.
CALIFORNIA Central coast, Sacramento and San Joaquin Valleys, Mojave Desert, and southern coastal basin area	13-14						3		Wind, dust, and fire	Heavy duststorms occurred in Mojave Desert on 13th. Widespread, but minor, damage reported in San Bernardino County on 14th. Wind damaged drive-in theatre screen, falling tree branches broke some powerlines, and a few TV antennas toppled. Numerous brush and grass fires occurred.
KANSAS Labette and Cherokee Counties	14	9-10 p.m.					5		Electrical, hail, and wind	Storm extended from southeastern Labette County northeastward across southern and eastern Cherokee County. Lightning caused damage in several places across southern part of both counties. Farm buildings hit, and in Galena store building and contents damaged some $50,000 by lightning. Hail, described as jagged pieces of ice about 1-1/4 inches in diameter, fell near and in Columbus driven by high winds. Further east, near Crestline, stones as large as baseballs reported. Fall of hail of short duration and damage light. Severe winds damaged a few farm buildings in eastern part of Cherokee

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS (Cont'd)										County, and power- and transmission lines also blown down leaving part of area without electricity and communications for a few hours.
IOWA Jefferson County	14				2		3	1	Rain	Driver lost control of car in rain.
OKLAHOMA Tulsa, Tulsa County	14					1			Wind	Strong, gusty winds blew an elderly woman down causing injury. Storm moved northward.
	14									Minor storms also reported in Cedar County and near Cedar Falls, Iowa; at Clever and Thompson, M
	14-15									Minor storm reported in South Dakota.
	15									Minor storms reported at Columbia and La Plata, Mo
MINNESOTA Entire State	15-16	A.m. 15th - a.m. 16th			2	7	3	1	Snow and wind	Snowfall accumulation ranged from 1 inch in south to 10 inches in northeast. Traffic halted in many localities. Hundreds of traffic accidents reported. Property damage limited to vehicles. 1 person died after shoveling snow. Storm moved eastward.
MICHIGAN Entire State	15-16	Night 15th -16th					5	1	Wind and snow	Strong winds accompanied by heavy snow hit Upper Peninsula on night of 15th, and winds moved into Lower Michigan on 16th. Scattered wind damage reported from all sections of State. Snowfall amounts of more than a foot reported from parts of Upper Peninsula, mainly in western half. 60-m.p.h winds occurred in many areas.
	16									Minor storm reported at Gary, Ind.
NEW ENGLAND Northern and central portions	18				3	Numerous	4	1	Snow	First heavy snow of season brought 1 to 10 inches to area, except little or none in southeastern Massachusetts and in extreme northern Maine. Automobile accidents resulting from motorists being caught unprepared for winter conditions, caused numerous injuries and in Massachusetts 3 deaths. Wet snow broke many tree limbs in southern New Hampshire, causing power- and communication line failures.
CALIFORNIA Central coast, Sacramento and San Joaquin Valleys, Mojave Desert, and southern coastal basin area	18-29				11	Many	6		Wind, dust, and fire	Persistent high pressure over western United States, with strong northeast-southwest gradient caused strong, northerly winds in northern and central California with gusts 40 to 50 m.p.h., on 18th and 19th. In Chemeketa Park, Santa Clara County, large redwood tree toppled, crashing through roof of house. Severe and unusually persistent Santa Ana conditions in Mohave Desert and southern coastal basin became established on 19th and continued sporadically until 29th. Wind gusts reache 90 m.p.h., in Fontana-Kaiser area on 20th, and gusts to 100 m.p.h., reported from Sierra Pelona forest lookout station northeast of Saugus. Widespread damage reported, including damaged roofs, TV antennas, broken windows, broken power and telephone poles, and many sand- and gravel-pitted automobile windshields. Navy landing craft went aground on San Clemente Island. Heavy damage to oranges and lemons reported from citrus areas in southern coastal counties. Cleanup of dust and debris taxed sanitation and street cleaning facilities. Major fire, fanned by winds, began in Cleveland National Forest north of Descanso on 19th and was finally controlled on 30th after burning 44,000 acres of brush and timber with a perimeter of 90 miles. Fire caused 11 deaths, many injuries, and destroyed 9 homes, 2 wooden bridges, and powder company plant.
OKLAHOMA Braggs, Muskogee County	20	10:15 a.m.	3	150	0	0	3	1	Tornado (suspected), wind, rain, and electrical	Trees uprooted, outbuildings damaged and destroyed, windows blown out, and TV antennas twisted. Storm moved northeastward.
	20									Minor storm also reported at Camdenton, Mo.
IOWA Northwestern half	20-21				1	3	4	1	Snow and ice	Stopped traffic in Council Bluffs area and resulted in numerous accidents elsewhere.
MICHIGAN	20-22						4	1	Wind and snow	Strong winds caused scattered damage. Heavy, wet snow combined with wind to damage power- and communication lines in parts of Upper Peninsula. Lake freighter lost its rudder in heavy seas on Lake Superior, but was brought into port.
MICHIGAN Posen (near), Presque Isle County	21	8 a.m.			0	0	3	1	Tornado or wind	Storm struck on narrow path through farm, damaging house and barns, uprooting trees, and felling power poles. Farm family fled to basement when noise of

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage by categories †: Property (exclusive of crops)	Estimated damage by categories †: Crops	Character of storm	Remarks
MICHIGAN (Cont'd)										approaching storm heard, so no one able to verify presence of funnel cloud. Storm moved northeastward.
FLORIDA Miami Airport Station (10 miles north-northwest of), Dade County	21	3 p.m.			0	0			Tornado	No damage reported. Existence verified by photographs and eye witnesses. Cloud did not touch ground.
ALASKA Lower Cook Inlet and Anchorage areas	21	4 p.m.-midnight	100	*100			5	1	Wind and rain	Damage rather widespread over lower Cook Inlet area, but strongest winds and greatest relative damage suffered from Rabbit Creek area (about 8 miles south of Anchorage) north-northeastward through Nunaka Valley (6 miles east of Anchorage), and on through Fort Richardson area to Chugach (14 miles northeast of Anchorage. Chugach Range tended to steer and intensify strong winds along that path. Chugach Electric Association reported this storm affected more individuals than any previous storm. Numerous cars and trucks blown from ice-covered highways. Industrial damages based principally upon estimates received from Anchorage Utilities Department and Chugach Electric Association. Utility and industrial damages estimated at $30,000, and residential and other damages estimated at $30,000. Storm moved northeastward.
MASSACHUSETTS Clinton, Worcester County	21	11:08 p.m.	**100	12	0	0	6	1	Tornado, rain, and wind	Damages confined almost entirely to printing factory, where $750,000 loss occurred. No funnel seen, but roar heard along narrow path in residential area downwind, where but minor damages noted on ground. Tornado not accompanied by thunderstorm. Rotary motion indicated by distribution of debris. Nature of factory damage required explosive lifting. Storm moved southeastward.
MASSACHUSETTS Merrimac, Essex County	21	11:40 p.m.	3/4	20	0	0	4	1	Tornado	Tornado produced on squall line immediately ahead of cold front. No funnel or hail seen, but witnesses identified sound of storm as "like a freight train" and "a deafening roar" and sound of hail heard against windows and walls. Many trees uprooted or sheared of their tops. Trees and debris moved mainly towards northeast. Damage to buildings due mostly to trees falling upon them, although some buildings directly damaged. 1 large home rotated somewhat, being pivoted on north corner and moved 5 feet from its foundation at opposite corner. Roof of another house lifted and carried northward where it eventually struck another house. Damage path itself oriented west-southwest—east-northeast. In all, about 25 houses damaged and as many more slightly affected.
	21									Minor storms also reported at Superior, Ariz., and at Madison and Marion, Ind.
NEW ENGLAND Northern and central portions	21-22	Afternoon-night					5	1	Wind, rain, and electrical	Cold front preceded by damaging gales and accompanied by violent gusts, sudden heavy rains, and thunderstorms in many areas moved over northern and central New England. Only minor damages inflicted in Vermont. Thunderstorms most numerous in New Hampshire, where 8,000 phones knocked out of service, numerous power outages, and minor structural damages inflicted, and many trees and limbs downed. 3,000 phones out, and wind damages in scattered areas of Maine reported. Massachusetts most seriously affected, with 26,000 phones out and thousands of homes without power. Many windows, roofs, porches, and garages damaged and many trees and limbs felled.
CONNECTICUT Entire State	21-22	P.m. 21st-early a.m. 22d				1			Wind and rain	Southwesterly winds of 40 to 50 m.p.h., and gusts to 60 m.p.h., affected entire State in connection with deep low moving from Lake Michigan to James Bay. Power and telephones disrupted overnight in 12,000 homes, mostly in Fairfield County, and several store windows broken in Hartford and Norwich areas. New automobile damaged by blown-over signboard in Colchester. Accompanying rains caused some road cave-ins in New Britain area.
RHODE ISLAND Entire State	21-22	P.m. 21st-early a.m. 22d				2	4		Wind	High winds with gusts to 60 m.p.h., blew down "free standing" brick wall of new school at Cranston. 2 workers injured by falling debris. Power and telephone failures in 11,000 homes and stores, mostly in Providence and Woonsocket areas. Windows broken in numerous stores and 2 pleasure boats submerged by rough seas in northern Narragansett Bay.
MASSACHUSETTS Canton, Norfolk County	22	12:15 a.m.	**650	25	0	0	3	1	Tornado	Witness reported being awakened by "terrific noise" of storm. House was rocking and debris flying by bedroom window. Severe strain placed on framework

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MASSACHUSETTS (Cont'd)										of house as evidenced by large cracks running across ceilings of several rooms. Another house in area lost most of roof shingles on both east and west sides. 4 lawn chairs blown uphill. A number of trees uprooted. Storm of brief extent and duration; moved northeastward.
IOWA Central portion	22				1	8	4	1	Snow and ice	Numerous accidents.
SOUTH DAKOTA Central and eastern portions	22-23	P.m.-a.m.				6	3		Rain, snow, and glaze	Freezing drizzle and snow-iced highways caused many accidents.
NEW YORK Western portion	22-23				3			1	Snow and wind	Severe snow squalls developed to lee of Lakes Erie and Ontario. Snow depths ranged up to 40 to 48 inches, with considerable wind building drifts many feet high in places. Whole communities marooned, with roads completely blocked and snow-fighting equipment operating under most adverse conditions. Heavy holiday traffic resulted in many hundreds of vehicles being stranded. Springville, Erie County, apparently hit hardest in western New York, with Copenhagen, Lewis County, the deepest snow depth in northern counties to lee of Lake Ontario. State of emergency considered by mayor of Springville. Dunkirk woman died in automobile accident and 1 man in Jamestown and another in Newark died of heart attacks while shovelling snow. No report of injuries, but hundreds of traffic accidents must have resulted in some minor injuries. Physical damage apparently not great, but loss of production and time amounted to several hundred thousand dollars.
PENNSYLVANIA Erie County	22-23								Snow and wind	Up to 27 inches of snow fell in Erie County while high winds piled snow up to 12 feet in drifts. City of Erie hardest hit and virtually stranded by mounds of snow which closed all roads. Most businesses and factories closed for several days while roads being reopened.
NEW ENGLAND Northern portion	26	All day			2	Several		1	Snow and glaze	First general heavy snowstorm of season in this area. Total depths ranges from about 2 inches in southeast to about 9 inches in north. Fatalities resulted from highway traffic accidents at Litchfield, Maine. Traffic accidents from storm brought injuries to several persons. Some damage to powerlines resulted in interruptions of power and electrical services.
IDAHO Western counties	26-30								Fog and rime ice	Beginning about 26th and increasing in extent daily, heavy fog filled most of valleys in western part of State, producing large accretion of rime ice on power and telephone wires, disrupting air travel, and hampering surface travel. Estimate of $3,000 damage is for cost of repairs and restoration of service only; no estimate made on loss of revenue to power and telephone companies and to air lines. Fog and ice continued into December.
NEW YORK Lake Erie (near)	29	Late a.m.-p.m.			2			1	Snow	Snow squalls from Great Lakes caused some schools to close and several highway accidents. 2 truck accidents near Silver Creek resulted in death of 1 driver, while spectator at the scene died watching cleanup operations. No reports of serious injuries, but many minor accidents.

FOLLOWING RECEIVED TOO LATE TO BE INCLUDED IN ABOVE TABLE.

Place	Date	Time	Length of path, miles	Width of path, yards	Killed	Injured	Property (exclusive of crops)	Crops	Character of storm	Remarks
TEXAS Matagorda Island	1	5:45 p.m.			0	0			Waterspout	Waterspout over Gulf moved southwestward and dissipated over land.

* Miles instead of yards.
** Yards instead of miles.
° Includes both crop and property damage.
C Crop damage included in property damage.
† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000.

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

NOVEMBER 1956

There was no significant flooding during November. The Verdigris River at Claremore, Okla., continued at a record low stage through November 3.

ATLANTIC SLOPE DRAINAGE

The only overflow at official gages in the Atlantic Slope Drainage during November was in the Delaware River Basin in Pennsylvania on Brandywine Creek. This stream rose to 3.3 feet above flood stage at Chadds Ford during the morning of the 2d. It receded rapidly after cresting and was below flood stage by mid-afternoon. Local flooding also occurred along some small streams in the Philadelphia area.

Flash floods occurred in the minor tributaries of the lower reaches of the West Branch of the Susquehanna River below Jersey Shore, Pa., from the heavy rains during the afternoon of the 1st. A total rainfall of 4.41 inches was reported at Beavertown, Pa., and 5.72 inches was reported at Watsonville, Pa. An unofficial amount of 6.1 inches was reported in the Loyalsock Creek Basin just north of Barbours, Pa. At least 3 persons lost their lives from these flash floods.

A flash flood was reported on Tuscarora Creek at Leesburg, Va., on the 1st. Several basements and ground floors of several stores were flooded.

MISSISSIPPI SYSTEM

Arkansas Basin.--Streams continued low in the Arkansas Basin throughout the month. The Verdigris River at Claremore, Okla., continued having a daily record low stage of 2.4 feet through November 3.

WEST GULF OF MEXICO DRAINAGE

General heavy rain occurred over the Upper Trinity Watershed during the period from the 2d through the 4th causing light flooding on Cedar Creek at Mabank, Tex., Chambers Creek at Corsicana, Tex., and Richland Creek at Richland, Tex. The rainfall was the heaviest over East Fork and along the Trinity River from below Roser, Tex., to Long Lake including Cedar, Chambers, and Richland Creeks with a maximum fall of 7.5 inches in the Mabank area. There was very little runoff in areas of less than 4 inches of rainfall as the streams were very low and the surface was extremely dry.

FLOOD STAGE DATA

Table 5 NOVEMBER 1956

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
	Ft.			*Ft.*	
ATLANTIC SLOPE DRAINAGE					
Brandywine Creek:					
Chadds Ford, Pa.	8.5	2	2	11.8	2

* Provisional

RAWINSONDE DATA

Average monthly values

Table 20

NOVEMBER 1956

ALBANY, N. Y.
(1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	86	3.4	76	256	2.9
1,000	30	138			231	2.3
950	30	560	3.3	68	266	8.4
900	30	992	1.3	66	270	13.6
850	30	1,451	- .7	61	273	15.9
800	30	1,934	- 2.7	59	269	16.7
750	30	2,449	- 5.0	56	263	17.5
700	30	2,983	- 7.6	53	260	19.8
650	30	3,563	- 9.8	48	256	24.9
600	30	4,172	-12.9	45	253	28.1
550	30	4,835	-16.6	41	252	31.7
500	30	5,541	-21.0		252	35.7
450	30	6,320	-26.2		249	38.7
400	30	7,153	-32.4		250	42.5
350	30	8,081	-39.1		245	47.8
300	29	9,129	-45.9		248	53.8
250	29	10,324	-52.5		257	52.6
200	29	11,750	-56.0		260	52.8
175	29	12,598	-56.1		267	49.9
150	26	13,563	-56.1		259	46.4
125	26	14,717	-57.7		261	42.0
100	26	16,119	-59.2		259	32.6
80	25	17,512	-60.4		262	26.4
60	22	19,294	-58.8		257	22.7
50	22	20,437	-58.8		264	18.6
40	18	21,846	-58.8		274	12.4
30	16	23,655	-58.3		302	12.0
20	7	26,205	-57.4			
15						

ALBUQUERQUE, N. MEX.
(812 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,619	6.0	31	85	1.7
1,000	30	176				
950	30	614				
900	30	1,065				
850	30	1,535				
800	30	2,033	5.2	29	316	7.4
750	30	2,562	2.1	31	312	13.0
700	30	3,110	- 1.2	32	304	14.8
650	30	3,702	- 5.0	32	298	15.5
600	30	4,322	- 8.8	30	299	16.7
550	30	4,994	-12.8		312	18.3
500	30	5,711	-17.7		314	20.0
450	30	6,499	-23.6		316	22.3
400	30	7,340	-29.9		318	26.0
350	30	8,277	-36.5		315	24.5
300	30	9,327	-43.7		305	27.8
250	30	10,529	-51.3		305	27.4
200	29	11,960	-57.3		283	27.6
175	29	12,801	-58.6		287	28.6
150	29	13,765	-59.7		286	25.4
125	28	14,896	-62.3		297	17.7
100	28	16,264	-64.6			
80	26	17,626	-63.3			
60	25	19,396	-61.7			
50	21	20,527	-60.5			
40	21	21,925	-58.9			
30	14	23,730	-57.5			

AMARILLO, TEX.
(894 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,099	6.7	39	212	1.2
1,000	30	161				
950	30	594				
900	30	1,042				
850	30	1,516	8.2	35	267	5.6
800	30	2,014	5.8	35	284	10.9
750	30	2,543	3.1	32	292	12.6
700	30	3,095	.1	30	291	13.4
650	30	3,688	- 3.5	29	285	16.7
600	30	4,312	- 7.7	29	277	20.4
550	29	4,980	-12.1		277	22.7
500	29	5,706	-16.7		270	29.7
450	29	6,495	-22.2		267	32.6
400	29	7,344	-28.5		259	34.8
350	29	8,285	-35.7		261	39.8
300	29	9,340	-42.9		262	44.9
250	29	10,546	-51.2		263	54.2
200	28	11,979	-56.1		267	52.3
175	28	12,824	-57.9		266	49.9
150	28	13,791	-59.6		270	44.9
125	28	14,925	-62.0		271	37.9
100	28	16,297	-63.9		273	29.3
80	28	17,664	-63.3		283	20.4
60	24	19,437	-61.0		303	11.7
50	23	20,571	-60.9		297	8.2
40	22	21,966	-58.9		309	5.4
30	18	23,782	-56.9		306	3.1
20	16	26,355	-55.0		286	10.5
15	11	28,174	-54.4		280	22.3

ANCHORAGE, ALASKA
(998 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	- 6.8	57	27	1.6
1,000	30	17			27	4.1
950	30	423	- 6.9	61	20	5.1
900	30	838	- 7.5	59	71	5.6
850	30	1,281	- 9.4	62	130	7.4
800	30	1,747	-11.5	64	150	10.9
750	30	2,247	-13.5	64	167	13.8
700	30	2,762	-16.2	59	174	14.2
650	30	3,322	-19.1	56	191	15.7
600	30	3,907	-22.8	54	195	20.2
550	30	4,541	-26.8	52	202	23.3
500	30	5,221	-31.2	53	205	28.4
450	30	5,968	-36.1	60	207	32.1
400	30	6,768	-41.1		218	35.7
350	29	7,661	-46.2		234	35.7
300	28	8,667	-50.9		226	47.2
250	27	9,855	-52.4		235	40.2
200	27	11,295	-52.0		245	36.3
175	27	12,160	-51.4		250	35.0
150	27	13,159	-51.9		255	34.0
125	27	14,338	-52.5		260	36.7
100	27	15,778	-52.5			
80	26	17,226	-53.3			
60	21	19,095	-54.1			
50	20	20,260	-54.5			
40	12	21,699	-53.9			

ANNETTE, ALASKA
(1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	37	4.8	86	165	4.9
1,000	30	154			157	8.9
950	30	571	3.0	76	175	13.4
900	30	1,009	1.6	72	194	14.8
850	30	1,468	- .5	68	211	14.8
800	30	1,951	- 2.7	61	228	17.7
750	30	2,466	- 5.2	47	235	22.0
700	30	2,999	- 8.0	47	244	24.7
650	30	3,574	-11.2	45	245	29.5
600	30	4,182	-14.4	46	243	28.9
550	30	4,839	-18.2	43	249	29.9
500	30	5,542	-22.5	44	255	28.2
450	30	6,314	-27.4	44	253	28.4
400	30	7,146	-32.9	42		
350	30	8,071	-39.5			
300	30	9,109	-46.3			
250	30	10,298	-53.6			
200	29	11,707	-56.6			
175	27	12,563	-55.1			
150	27	13,544	-56.0			
125	27	14,699	-56.8			
100	26	16,112	-57.8			
80	25	17,516	-57.1			
60	25	19,336	-56.7			
50	23	20,484	-56.8			
40	21	21,910	-56.2			
30	14	23,796	-55.5			

ATHENS, GA.
(991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	246	9.1	75	304	3.1
1,000	29	169				
950	29	600	9.6	56	280	5.8
900	29	1,044	7.0	57	278	9.1
850	29	1,513	5.6	47	277	10.5
800	29	2,007	4.6	42	274	15.0
750	29	2,541	2.3	38	271	17.7
700	29	3,086	- .2		271	20.6
650	29	3,682	- 3.3		276	24.1
600	29	4,305	- 6.7		275	28.0
550	29	4,984	-10.5		267	30.1
500	29	5,706	-15.4		269	33.0
450	29	6,501	-21.0		265	38.5
400	29	7,352	-27.4		267	43.9
350	29	8,299	-34.5		263	49.5
300	29	9,358	-42.3		261	56.1
250	29	10,566	-50.6		266	64.5
200	29	11,998	-56.5		271	66.0
175	29	12,840	-58.9		267	60.4
150	29	13,800	-61.7		269	55.9
125	29	14,922	-64.3		269	44.3
100	26	16,281	-66.6		267	36.3
80	26	17,630	-65.7		268	29.5
60	21	19,387	-63.7		273	13.1
50	22	20,508	-61.7		270	12.4
40	19	21,894	-59.5		268	14.4
30	17	23,709	-57.7		275	15.9
20						

BARROW, ALASKA
(1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	8	-23.3	62	93	1.6
1,000	30	115	-21.7	73	65	2.9
950	30	502	-20.6	79	74	4.5
900	30	894	-20.1	77	70	4.5
850	30	1,317	-20.9	75	54	4.1
800	30	1,765	-21.0	70	72	2.3
750	30	2,246	-22.2	68	97	1.7
700	30	2,745	-24.3	63	126	2.1
650	30	3,287	-27.2	60	138	3.3
600	30	3,854	-30.6	60	169	5.2
550	30	4,473	-34.5	58	170	6.0
500	30	5,127	-38.9		183	7.2
450	30	5,850	-43.9		189	8.7
400	30	6,625	-48.6		192	8.4
350	30	7,491	-53.8		206	8.9
300	30	8,471	-57.4		218	9.9
250	30	9,625	-56.0		235	15.0
200	30	11,050	-54.2		237	17.9
175	30	11,905	-54.5		246	15.9
150	30	12,889	-55.2		249	17.9
125	30	14,049	-56.4		247	19.4
100	30	15,459	-57.8		253	28.4
80	29	16,862	-59.2		254	36.1
60	28	18,654	-60.9		257	38.1
50	27	19,788	-61.6		261	40.4
40	20	21,189	-62.2		266	46.2
30	12	22,957	-62.5			

BETHEL, ALASKA
(1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	4	-13.5	80	6	5.8
1,000	30	57			3	6.8
950	30	457	-12.0	70	18	12.6
900	30	862	-11.9	66	16	13.0
850	30	1,298	-13.3	62	6	14.4
800	30	1,758	-14.9	59	353	14.4
750	30	2,249	-17.0	54	345	14.2
700	30	2,760	-19.5	52	335	14.8
650	30	3,313	-22.6	45	325	14.8
600	30	3,890	-26.3	45	311	14.0
550	30	4,518	-30.0	41	305	16.3
500	30	5,187	-34.3	39	284	14.2
450	30	5,921	-39.2		284	17.9
400	29	6,713	-44.3		264	20.8
350	29	7,597	-49.2		248	22.0
300	28	8,598	-52.0		232	23.5
250	28	9,776	-52.2		233	24.9
200	28	11,224	-50.2		231	26.0
175	27	12,095	-49.8		247	26.6
150	22	13,112	-50.2		248	30.3
125	18	14,307	-50.7		250	28.2
100	11	15,753	-51.4			
80	5	17,179	-51.6			

BISMARCK, N. DAK.
(957 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	505	- 0.2	76	344	3.7
1,000	30	152				
950	30	570			338	7.0
900	30	1,000	.3	65	315	11.5
850	30	1,457	- 1.2	59	313	15.0
800	30	1,938	- 3.1	55	316	16.1
750	30	2,455	- 5.4	50	313	17.1
700	30	2,985	- 8.3	48	307	16.5
650	30	3,564	-11.3	45	303	14.8
600	30	4,168	-14.4	44	294	17.3
550	30	4,827	-18.6	46	285	15.2
500	30	5,526	-23.2	44	281	16.5
450	30	6,300	-28.5	43	273	14.8
400	30	7,123	-34.5	43		
350	30	8,043	-41.0			
300	30	9,075	-47.3			
250	30	10,266	-52.1			
200	30	11,699	-54.6			
175	29	12,549	-53.9			
150	29	13,537	-54.2			
125	29	14,703	-55.1			
100	28	16,121	-56.2			
80	26	17,532	-56.3			
60	24	19,356	-56.7			
50	24	20,511	-56.8			
40	17	21,935	-57.0			
30	12	23,758	-56.2			
20	5	26,365	-54.9			

BOISE, IDAHO
(926 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	868	1.5	78	206	1.6
1,000	30	244				
950	30	665				
900	30	1,103	4.2	61	255	1.2
850	30	1,567	3.3	53	345	2.3
800	30	2,058	2.0	49	308	6.4
750	30	2,585	- .2	44	308	8.5
700	30	3,126	- 2.8	42	313	12.4
650	30	3,717	- 5.9	39	316	16.1
600	30	4,333	- 9.6	38	317	17.5
550	30	5,005	-14.0	38	319	18.6
500	30	5,716	-19.0	38	311	19.6
450	30	6,503	-24.6	38	307	23.7
400	30	7,340	-30.3		313	22.7
350	30	8,275	-37.4		326	20.4
300	30	9,322	-45.0		326	10.3
250	30	10,517	-52.9		314	10.1
200	29	11,939	-57.0		320	18.5
175	29	12,782	-57.7		308	20.8
150	28	13,750	-58.5		311	16.5
125	27	14,885	-60.5		333	15.7
100	21	16,256	-60.6			
80	20	17,650	-61.2			
60	17	19,438	-60.1			
50	16	20,572	-58.9			
40	12	21,965	-58.5			
30	9	23,797	-57.1			

BROWNSVILLE, TEX.
(1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	17.5	75	30	1.9
1,000	30	166	18.7	65	80	2.7
950	30	608	16.3	64	140	5.8
900	30	1,063	14.1	59	149	4.7
850	30	1,545	12.6	53	191	3.9
800	30	2,052	11.3	52	222	2.7
750	30	2,595	9.4	45	244	5.8
700	30	3,159	6.4	40	261	8.4
650	30	3,767	2.5	41	261	10.3
600	30	4,406	- 1.4	36	262	14.6
550	30	5,092	- 5.8	34	264	16.7
500	30	5,833	-10.6	30	259	19.8
450	30	6,640	-16.0		259	26.4
400	30	7,513	-22.1	32	255	32.4
350	30	8,481	-29.1	35	254	35.7
300	30	9,563	-37.5		252	43.1
250	30	10,795	-47.0		261	40.0
200	30	12,238	-57.2		252	50.7
175	30	13,072	-62.6			
150	30	14,011	-67.3			
125	30	15,100	-70.0			
100	28	16,416	-73.1			
80	27	17,724	-72.6			
60	26	19,443	-65.0			
50	25	20,562	-62.1			
40	20	21,953	-59.3			
30	19	23,762	-57.1			
20	11	26,355	-54.4			
15						

BUFFALO, N. Y.
(993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	182	4.6	78	231	5.8
1,000	30	128				
950	30	551	4.3	67	232	11.3
900	30	985	1.4	70	245	16.5
850	30	1,443	- 1.1	69	252	17.9
800	30	1,925	- 3.6	65	254	19.0
750	30	2,437	- 5.8	61	253	19.8
700	30	2,971	- 8.1	53	258	19.2
650	30	3,547	-10.8	48	257	20.8
600	30	4,154	-14.1	48	261	24.1
550	30	4,814	-18.0	45	258	27.6
500	30	5,515	-22.5	43	258	28.2
450	30	6,288	-27.7	43	257	34.0
400	30	7,117	-33.4	44	260	35.7
350	30	8,043	-39.7		257	38.5
300	29	9,079	-46.2		262	35.7
250	29	10,275	-51.6		262	39.0
200	29	11,712	-54.3		263	37.9
175	29	12,567	-54.7		262	39.0
150	27	13,556	-55.5		269	36.3
125	27	14,715	-57.0		264	32.6
100	20	16,168	-60.5		255	26.8
80	20	17,554	-61.3		257	20.4
60	18	19,337	-60.1		258	15.3
50	17	20,481	-60.3		266	12.4
40	16	21,873	-59.8		276	9.5
30	14	23,685	-58.6		311	6.8
20	8	26,250	-57.7			

BURRWOOD, LA.
(1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	17.9	75	32	4.3
1,000	30	173	17.5	65	26	4.5
950	30	609	14.0	66	348	2.3
900	30	1,064	11.8	60	289	4.5
850	30	1,540	10.0	50	292	7.6
800	30	2,043	8.5	35	294	8.7
750	30	2,578	6.5		290	9.5
700	30	3,137	3.9		278	13.2
650	30	3,740	.7		275	17.5
600	30	4,373	- 3.0		272	21.0
550	30	5,058	- 7.2		274	24.7
500	29	5,795	-12.2		271	30.5
450	28	6,602	-17.8		271	35.5
400	28	7,462	-24.1		270	38.9
350	28	8,422	-31.1		273	43.9
300	27	9,492	-39.7		272	47.4
250	25	10,726	-48.2		274	55.2
200	21	12,156	-56.7			
175	20	12,988	-60.4			
150	19	13,949	-64.3			
125	19	15,057	-66.6			
100	18	16,394	-69.8			
80	17	17,722	-68.8			
60	17	19,467	-63.0			
50	16	20,598	-60.1			
40	15	21,995	-57.4			
30	13	23,821	-55.2			
20	5	26,412	-51.3			

CARIBOU, ME.
(992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	191	- 0.4	85	262	2.3
1,000	29	123			350	4.9
950	29	540	- .4	73	284	6.2
900	29	966	- 2.1	68	284	9.1
850	29	1,418	- 3.4	63	269	11.3
800	29	1,896	- 4.7	60	266	13.6
750	29	2,409	- 6.7	58	267	19.4
700	29	2,939	- 9.2	56	260	21.6
650	29	3,515	-12.3	53	257	25.3
600	29	4,116	-15.7	49	257	30.1
550	29	4,771	-19.7	44	250	34.4
500	29	5,468	-24.1	41	252	37.7
450	29	6,241	-29.1	41	252	40.0
400	29	7,061	-34.7	44	250	44.5
350	29	7,980	-41.5		251	50.3
300	28	9,019	-48.2		253	52.6
250	27	10,190	-53.4		256	56.1
200	25	11,635	-55.7		252	55.7
175	23	12,466	-55.2		255	50.9
150	22	13,437	-55.1		253	49.5
125	19	14,605	-57.1		256	35.2
100	13	16,044	-59.6		266	35.2
80	12	17,432	-59.3		274	21.8
60	10	19,242	-59.6			
50	10	20,379	-60.5			
40	6	21,762	-59.3			
30	5	23,568	-60.3			

CHARLESTON, S. C.
(1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	13	10.7	87	246	2.1
1,000	30	162	14.5	67	242	3.3
950	30	602	13.0	57	286	5.4
900	30	1,048	10.5	54	291	4.5
850	30	1,523	8.3	51	279	6.4
800	30	2,022	6.2	42	276	7.4
750	30	2,560	4.2	34	271	11.1
700	30	3,108	1.7	29	270	12.6
650	30	3,711	- 1.4	28	269	17.9
600	30	4,336	- 4.7		267	21.0
550	30	5,021	- 8.7		268	23.3
500	30	5,749	-13.7		271	25.1
450	30	6,553	-19.1		285	20.8
400	30	7,407	-25.6		287	22.9
350	30	8,362	-32.8		292	27.2
300	30	9,429	-40.6		286	31.3
250	30	10,647	-49.1		279	42.3
200	30	12,090	-55.7		281	43.7
175	30	12,933	-58.9			
150	30	13,894	-61.5			
125	30	15,016	-64.3			
100	30	16,371	-67.1			
80	29	17,716	-65.9			
60	29	19,473	-62.8			
50	28	20,605	-60.8			
40	26	22,001	-59.1			
30	25	23,817	-56.6			
20	18	26,404	-54.2			
15	5	28,249	-54.9			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

COLD BAY, ALASKA (1000 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	29	- 0.5	80	22	5.4
1,000--	30	23			12	9.9
950 --	30	139	- 3.1	80	12	6.2
900----	30	858	- 5.7	78	352	7.0
850----	30	1,303	- 8.1	75	341	8.5
800----	30	1,772	-10.3	63	324	9.1
750----	30	2,275	-12.7	55	304	8.9
700----	30	2,791	-15.3	49	306	9.9
650----	30	3,354	-18.4	48	277	12.6
600----	30	3,940	-22.0	45	269	13.0
550-- -	30	4,579	-26.1	45	253	16.7
500----	30	5,257	-30.9	45	260	14.2
450----	30	6,005	-36.2		247	17.1
400----	30	6,804	-41.7		252	18.6
350---	30	7,697	-47.2		239	23.9
300----	30	8,702	-52.4		226	18.3
250----	29	9,868	-53.3		226	23.7
200---	29	11,313	-50.3		220	31.1
175----	29	12,184	-50.0		224	30.1
150----	27	13,188	-49.6		223	30.3
125----	25	14,378	-49.6		213	30.3
100----	24	15,837	-49.7		215	32.6
80-----	23	17,293	-50.6		234	31.5
60-----	18	19,165	-50.3			
50-----	15	20,359	-50.0			
40-----	13	21,802	-50.7			
30-----	12	23,676	-50.3			
20-----	7	26,303	-50.8			
15-----						

COLUMBIA, MO. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	238	6.4	61	268	3.7
1,000--	30	149				
950 --	30	573	6.5	58	252	10.9
900----	30	1,013	4.2	59	262	15.3
850----	30	1,476	1.9	59	276	17.7
800----	30	1,964	.4	54	280	19.8
750----	30	2,487	.9	46	283	22.1
700----	30	3,029	- 2.6	39	279	25.1
650----	30	3,616	- 5.7	39	282	26.2
600----	30	4,237	- 9.4	39	284	31.1
550-- -	30	4,905	-13.5	37	279	34.2
500----	30	5,622	-18.2		278	35.7
450----	30	6,408	-23.9		279	39.6
400----	30	7,250	-30.3		284	41.6
350---	30	8,185	-37.3		280	43.3
300----	30	9,231	-44.8		282	44.5
250----	30	10,428	-52.1		284	44.3
200---	30	11,856	-55.9		275	53.4
175----	30	12,704	-56.3		274	49.0
150----	30	13,680	-57.5		276	43.3
125----	29	14,827	-59.8		272	34.8
100----	29	16,214	-61.5		273	28.7
80-----	28	17,596	-61.4		276	19.6
60-----	27	19,385	-60.1		283	10.7
50-----	25	20,520	-60.0		296	7.6
40-----	17	21,897	-58.5		283	7.8
30-----	11	23,698	-57.4		286	12.8
20-----						
15-----						

DAYTON, OHIO (982 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	297	5.4	71	232	3.5
1,000--	30	114				
950 --	30	561	5.3	64	236	9.7
900----	30	1,005	2.9	64	249	15.2
850----	30	1,466	.9	61	254	18.6
800----	30	1,951	- 1.3	56	259	18.8
750----	30	2,470	- 3.5	50	262	20.0
700----	30	3,007	- 5.5	45	266	22.0
650----	30	3,590	- 8.3	41	270	24.7
600----	30	4,202	-11.7	40	269	31.1
550-- -	29	4,856	-15.7	43	270	30.1
500----	29	5,567	-20.0	41	272	34.4
450----	29	6,349	-25.1	41	273	40.0
400----	29	7,185	-31.1		274	41.2
350---	29	8,116	-37.9		272	45.6
300----	29	9,160	-44.8		270	51.9
250----	28	10,360	-50.3		268	53.1
200---	28	11,799	-54.3		270	54.0
175----	27	12,645	-55.0		270	52.6
150----	27	13,625	-56.3		266	46.8
125----	26	14,770	-58.4		268	41.2
100----	26	16,164	-60.2		271	33.2
80-----	25	17,554	-59.9		269	23.9
60-----	23	19,347	-58.9		283	18.1
50-----	18	20,493	-59.0		290	10.7
40-----	15	21,885	-57.9		281	16.3
30-----	5	23,671	-56.3			
20-----						
15-----						

DENVER, COLO. (841 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,608	0.4	61	148	2.7
1,000--	30	188				
950 --	30	614				
900----	30	1,059				
850----	30	1,523				
800----	30	2,014	3.2	43	314	6.8
750----	30	2,539	- .3	41	322	12.4
700----	30	3,082	- 4.2	43	328	14.8
650----	30	3,665	- 8.3	46	331	19.4
600----	30	4,278	-12.1	46	330	21.6
550-- -	30	4,940	-16.1	43	329	26.0
500----	30	5,649	-20.7	37	329	26.2
450----	30	6,428	-26.0	39	324	28.9
400----	30	7,262	-32.3	39	328	28.7
350---	30	8,188	-39.4		325	29.7
300----	30	9,224	-46.5		313	29.7
250----	29	10,411	-51.8		309	31.9
200---	29	11,843	-55.0		304	32.8
175----	29	12,692	-56.3		294	33.8
150----	29	13,666	-57.1		291	32.8
125----	28	14,806	-59.0		297	26.6
100----	27	16,191	-60.3		294	22.1
80-----	27	17,577	-60.7		300	13.4
60-----	26	19,365	-59.7		311	10.9
50-----	26	20,504	-59.3		333	8.5
40-----	25	21,902	-58.3		343	6.8
30-----	24	23,719	-56.8		352	7.0
20-----	15	26,283	-56.2		349	7.4
15-----	7	28,131	-53.6			

DODGE CITY, KANS. (928 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	792	4.8	50	310	4.1
1,000--	30	169				
950 --	30	596				
900----	30	1,039	7.4	42	321	9.1
850----	30	1,508	5.1	41	321	11.1
800----	30	2,000	2.7	40	316	13.0
750----	30	2,526	.7	36	312	15.9
700----	30	3,071	- 2.0	34	305	19.0
650----	30	3,660	- 5.5	36	303	21.6
600----	30	4,280	- 9.4	38	296	24.3
550-- -	30	4,950	-13.7		269	22.9
500----	30	5,664	-18.8		284	25.4
450----	30	6,449	-24.2		285	29.7
400----	30	7,289	-30.1		274	27.8
350---	30	8,225	-37.0		288	29.3
300----	30	9,273	-44.7		290	29.9
250----	30	10,471	-51.7		308	30.1
200---	30	11,902	-56.0		302	36.7
175----	29	12,744	-57.1		296	36.5
150----	29	13,716	-58.3		297	35.7
125----	29	14,857	-60.3		295	35.9
100----	29	16,243	-61.7		307	29.9
80-----	28	17,621	-61.8		305	22.9
60-----	27	19,409	-60.6		306	14.8
50-----	24	20,542	-59.8		335	8.2
40-----	23	21,933	-58.7		304	12.2
30-----	15	23,748	-57.3			
20-----						
15-----						

EL PASO, TEX. (886 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,195	10.2	26	18	2.3
1,000--	30	166				
950----	30	606				
900----	30	1,061				
850----	30	1,538	11.4	21	42	1.9
800----	30	2,042	8.4	23	309	2.3
750----	30	2,577	5.8		304	4.5
700----	30	3,133	2.5		299	6.2
650----	30	3,735	- .9		286	9.9
600----	30	4,363	- 4.6		279	13.2
550----	30	5,045	- 9.1		286	15.9
500----	30	5,772	-13.9		298	14.2
450----	30	6,571	-19.8		294	16.5
400----	30	7,427	-26.3		286	20.0
350----	29	8,376	-33.7		287	25.6
300----	29	9,439	-41.5		290	33.2
250----	29	10,652	-49.7		280	36.3
200----	29	12,084	-57.5		282	33.4
175----	28	12,925	-60.2		276	31.9
150----	28	13,879	-63.0			
125----	28	14,994	-65.5			
100----	22	16,356	-67.2			
80-----	19	17,700	-67.0			
60-----	18	19,455	-63.1			
50-----	17	20,581	-61.6			
40-----	17	21,969	-59.4			
30-----	15	23,774	-57.3			
20-----	10	26,355	-53.5			
15-----						

ELY, NEV. (815 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,908	- 1.5	49	259	0.8
1,000--	30	233				
950----	30	666				
900----	30	1,106				
850----	30	1,570				
800----	30	2,061	3.4	43	352	4.1
750----	30	2,591	2.1	38	356	9.5
700----	30	3,136	- 1.6	38	344	10.5
650----	30	3,731	- 4.6	33	342	12.8
600----	30	4,348	- 8.5	35	342	15.5
550----	30	5,022	-12.6		334	19.0
500----	30	5,738	-17.7		329	18.6
450----	30	6,528	-23.4	32	316	18.8
400----	30	7,368	-29.8		316	20.8
350----	30	8,306	-36.7		322	15.2
300----	30	9,356	-44.2		303	15.0
250----	30	10,557	-51.6		306	15.7
200----	30	11,985	-56.6		303	14.0
175----	30	12,829	-57.9		325	11.8
150----	30	13,798	-59.3		309	12.8
125----	30	14,935	-61.0		325	12.0
100----	29	16,313	-62.5		336	16.5
80-----	28	17,690	-61.9		346	12.2
60-----	27	19,480	-59.7		16	10.5
50-----	25	20,614	-59.4			
40-----	21	22,010	-57.8			
30-----	13	23,828	-55.8			
20-----						
15-----						

FAIRBANKS, ALASKA (993 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	135	-19.3	69	344	1.4
1,000--	30	84				
950----	30	471	-16.4	66	126	1.6
900----	30	875	-15.5	70	208	3.1
850----	30	1,307	-14.9	72	177	4.3
800----	30	1,765	-15.0	67	191	7.6
750----	30	2,258	-16.4	65	201	10.7
700----	30	2,768	-18.8	63	208	16.7
650----	30	3,324	-21.8	58	208	18.1
600----	30	3,901	-25.4	56	216	16.7
550----	30	4,531	-29.4	54	221	22.7
500----	30	5,201	-33.7	50	214	29.9
450----	30	5,938	-38.6		219	29.9
400----	29	6,738	-43.4		222	30.5
350----	28	7,629	-48.5		229	34.8
300----	28	8,633	-52.8		224	34.8
250----	28	9,802	-54.2		221	38.9
200----	28	11,235	-53.2			
175----	28	12,095	-52.7			
150----	28	13,089	-53.0			
125----	28	14,262	-53.8			
100----	28	15,695	-53.8			
80-----	27	17,117	-54.9			
60-----	26	18,947	-56.1			
50-----	23	20,092	-56.9			
40-----	19	21,508	-57.1			
30-----	8	23,324	-56.8			
20-----						
15-----						

FLINT, MICH. (987 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	234	4.0	72	223	4.5
1,000--	30	127				
950----	30	547	3.3	74	230	8.0
900----	30	981	.8	74	247	14.0
850----	30	1,439	- 1.2	67	254	16.3
800----	30	1,920	- 3.5	66	255	17.1
750----	30	2,434	- 5.3	65	259	17.9
700----	30	2,968	- 7.7	56	263	20.6
650----	30	3,550	-10.4	51	263	24.1
600----	30	4,153	-13.6	47	271	24.9
550----	28	4,819	-17.4	46	270	25.4
500----	28	5,523	-22.2	48	267	28.9
450----	28	6,293	-27.9	48	272	31.7
400----	27	7,138	-33.5		275	34.8
350----	27	8,060	-40.5		272	38.1
300----	27	9,095	-46.9		273	39.2
250----	26	10,289	-52.1		272	47.2
200----	25	11,718	-54.8		269	43.7
175----	24	12,576	-54.7		269	39.2
150----	24	13,559	-55.5		271	37.7
125----	24	14,716	-57.0		270	35.0
100----	23	16,120	-58.1		274	29.1
80-----	18	17,478	-57.4		279	24.7
60-----	14	19,279	-57.6		281	24.1
50-----	13	20,414	-57.2		289	17.3
40-----	10	21,831	-56.6			
30-----						
20-----						
15-----						

FORT WORTH, TEX. (999 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	178	11.6	60	224	0.6
1,000--	30	172			354	4.1
950----	30	608	12.6	45	234	4.5
900----	30	1,054	10.2	44	263	7.8
850----	30	1,528	8.2	42	283	10.9
800----	30	2,026	6.8	38	285	13.0
750----	30	2,563	5.2	34	277	13.4
700----	30	3,115	2.3	33	275	15.3
650----	30	3,713	- 1.1	27	272	18.8
600----	30	4,343	- 5.1		266	21.2
550----	30	5,023	- 9.5		270	23.1
500----	30	5,750	-14.8		268	26.2
450----	30	6,542	-20.7		269	28.2
400----	30	7,397	-27.3		270	33.2
350----	29	8,342	-34.8		267	38.7
300----	29	9,398	-43.0		268	43.9
250----	29	10,602	-51.3		264	52.8
200----	29	12,027	-57.7		264	58.9
175----	29	12,864	-59.9		264	55.9
150----	29	13,820	-62.4		265	49.9
125----	29	14,936	-65.1		265	43.9
100----	29	16,287	-67.0		266	34.8
80-----	27	17,637	-65.3		267	20.8
60-----	23	19,399	-62.0		273	11.1
50-----	23	20,529	-60.6		280	8.2
40-----	23	21,922	-58.9		277	7.0
30-----	21	23,743	-55.9		286	5.4
20-----	18	26,340	-53.9		315	4.5
15-----	12	28,195	-51.4		346	6.0

GLASGOW, MONT. (938 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	695	0.3	67	320	3.7
1,000--	30	172				
950----	30	593				
900----	30	1,027	3.1	53	314	13.2
850----	30	1,489	1.3	50	316	17.1
800----	30	1,975	- 1.2	48	323	17.7
750----	30	2,491	- 3.9	47	318	16.5
700----	30	3,028	- 7.0	43	329	19.0
650----	30	3,605	-10.6	41	328	21.2
600----	30	4,214	-13.9	38	335	15.5
550----	30	4,874	-18.0	37	325	20.8
500----	30	5,575	-22.8	40	316	18.1
450----	30	6,349	-28.0	38	306	17.5
400----	29	7,167	-34.1	39	282	17.3
350----	29	8,089	-40.4		296	18.1
300----	28	9,132	-47.6		299	21.6
250----	27	10,329	-53.4		333	18.5
200----	25	11,749	-55.8			
175----	23	12,596	-54.9			
150-- -	23	13,581	-54.7			
125----	23	14,744	-55.5			
100----	23	16,159	-57.3			
80-----	21	17,556	-56.9			
60-----	20	19,383	-57.1			
50-----	18	20,548	-56.5			
40-----	16	21,963	-57.1			
30-----	5	23,776	-56.9			
20-----						

GRAND JUNCTION, COLO. (858 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,474	1.3	49	65	3.1
1,000--	30	224				
950----	30	646				
900----	30	1,091				
850----	30	1,552			72	3.5
800----	30	2,042	1.4	41	347	2.3
750----	30	2,566	- 1.1	42	328	3.3
700----	30	3,107	- 4.1	43	335	8.0
650----	30	3,693	- 7.3	43	338	13.2
600----	30	4,307	-10.8	41	337	15.3
550----	30	4,972	-15.0	39	336	17.5
500----	30	5,684	-19.9	40	331	19.8
450----	30	6,466	-25.5	40	324	23.7
400----	30	7,300	-31.6	36	321	28.7
350----	30	8,229	-38.9		320	29.1
300----	30	9,269	-45.9		317	32.6
250----	30	10,465	-51.8		308	31.9
200----	30	11,895	-55.7		303	25.6
175----	30	12,742	-56.6			
150-- -	28	13,706	-57.8			
125----	28	14,849	-60.2			
100----	27	16,234	-61.9			
80-----	27	17,615	-61.3			
60-----	25	19,404	-60.6			
50-----	24	20,539	-59.7			
40-----	22	21,934	-58.6			
30-----	19	23,752	-56.9			
20-----						

GREAT FALLS, MONT. (892 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,123	2.8	54	239	13.0
1,000--	30	183				
950----	30	605				
900----	30	1,046				
850----	30	1,514	4.2	40	258	18.1
800----	30	2,004	.9	42	282	15.9
750----	30	2,526	- 2.2	43	293	17.5
700----	30	3,064	- 5.2	41	304	19.4
650----	30	3,647	- 8.8	40	313	21.8
600----	30	4,258	-11.9	41	318	25.6
550----	30	4,923	-15.8	40	319	29.7
500----	30	5,630	-20.6	42	322	31.7
450----	30	6,410	-25.9	38	327	33.6
400----	29	7,240	-32.5		316	35.7
350----	29	8,167	-39.4		312	42.2
300----	28	9,220	-46.4		316	42.7
250----	28	10,411	-53.4		319	39.4
200----	26	11,827	-56.4		321	35.9
175----	25	12,669	-57.1		314	39.0
150-- -	23	13,629	-56.7		315	37.1
125----	23	14,782	-57.5		314	28.7
100----	22	16,188	-58.2		309	23.7
80-----	21	17,595	-58.3		308	16.3
60-----	20	19,411	-58.3		310	12.4
50-----	18	20,560	-58.4		300	16.7
40-----	16	21,965	-57.5		314	12.0
30-----	10	23,754	-57.7			
20-----						

GREEN BAY, WIS. (989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	210	1.6	79	280	3.9
1,000--	30	116				
950----	30	536	1.3	71	262	6.6
900----	30	964	- .9	68	260	8.5
850----	30	1,418	- 3.3	67	276	9.3
800----	30	1,896	- 5.0	62	273	9.1
750----	30	2,409	- 6.8	55	269	11.1
700----	30	2,938	- 8.9	50	275	13.4
650----	30	3,516	-11.6	45	279	16.5
600----	30	4,119	-14.6	42	278	20.0
550----	30	4,779	-18.3	39	290	22.5
500----	30	5,478	-22.9	37	285	22.0
450----	30	6,250	-27.8		282	25.1
400----	30	7,076	-33.9		277	25.8
350----	30	7,999	-40.5		287	23.5
300----	30	9,033	-46.6		267	14.0
250----	30	10,228	-51.7		270	19.2
200----	30	11,666	-53.6		267	26.4
175----	30	12,525	-53.0		276	23.7
150-- -	29	13,523	-54.4		258	20.6
125----	28	14,688	-55.5		257	23.3
100----	28	16,106	-56.5		252	17.9
80-----	27	17,519	-57.3		255	15.7
60-----	25	19,341	-56.7		314	3.1
50-----	24	20,490	-56.8			
40-----	19	21,898	-57.1			
30-----	10	23,711	-56.1			
20-----						

GREENSBORO, N. C. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	273	6.7	79	357	1.7
1,000--	30	170				
950----	30	600	8.6	59	266	2.3
900----	30	1,042	6.6	58	274	6.6
850----	30	1,509	4.8	56	262	10.1
800----	30	2,002	2.9	51	262	12.8
750----	30	2,534	.9	42	264	16.3
700----	30	3,075	- 1.0	31	261	19.8
650----	30	3,672	- 4.0		263	19.2
600----	30	4,291	- 7.5		261	22.3
550----	30	4,970	-11.3		260	25.4
500----	30	5,688	-16.1		264	27.6
450----	30	6,484	-21.6		270	30.3
400----	30	7,330	-27.7		265	29.7
350----	30	8,274	-34.6		272	28.6
300----	30	9,332	-42.3		272	31.3
250----	29	10,532	-50.1		274	31.3
200----	29	11,969	-55.3		292	35.0
175----	29	12,815	-57.2			
150-- -	29	13,784	-59.4			
125----	29	14,917	-61.9			
100----	29	16,290	-63.3			
80-----	29	17,659	-63.4			
60-----	29	19,434	-61.0			
50-----	29	20,568	-60.2			
40-----	26	21,970	-58.6			
30-----	24	23,784	-57.1			
20-----	11	26,360	-55.3			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

HATTERAS, N. C. (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	3	13.9	78	335	2.5
1,000	30	156	14.1	69	329	1.6
950	30	590	11.5	66	229	4.3
900	30	1,037	8.8	59	229	7.4
850	30	1,508	6.6	54	246	9.7
800	30	2,004	5.0	46	248	11.3
750	30	2,537	3.3	34	250	14.4
700	30	3,085	.5	33	249	16.9
650	30	3,680	- 2.6	31	252	19.6
600	30	4,307	- 6.1		258	25.1
550	30	4,985	- 9.9		257	28.6
500	30	5,711	-14.7		260	31.9
450	30	6,505	-20.3		258	36.5
400	30	7,361	-26.6		260	43.7
350	30	8,310	-33.8		261	47.8
300	30	9,372	-41.4		261	51.7
250	30	10,586	-49.6		267	54.2
200	2	12,025	-55.3		266	60.2
175	29	12,871	-57.5		265	58.1
150	29	13,838	-59.9		268	53.8
125	29	14,968	-62.8		265	46.0
100	29	16,335	-65.0		265	37.1
80	29	17,697	-63.8		265	24.7
60	24	19,471	-62.2		277	12.8
50	21	20,601	-60.6		285	5.4
40	22	21,992	-59.1		269	5.1
30	21	23,802	-57.0		290	14.2
20	7	26,405	-54.2			

HILO, T. H. (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	9	24.5	78	109	3.5
1,000	30	118	23.4	78	112	4.3
950	30	572	20.3	81	120	6.8
900	30	1,030	17.2	8.	116	5.1
850	30	1,517	14.3	85	108	3.1
800	30	2,027	12.1	76	100	2.7
750	30	2,579	10.0	61	83	1.7
700	30	3,139	8.2	45	85	1.7
650	30	3,752	5.2	38	102	1.2
600	30	4,397	1.6	38	69	1.4
550	30	5,095	- 2.6	37	263	.2
500	30	5,843	- 7.2	38	285	3.1
450	30	6,669	-12.5	35	266	6.2
400	30	7,545	-18.9	36	262	11.1
350	30	8,525	-26.1	35	271	15.2
300	30	9,620	-34.8		272	21.6
250	30	10,864	-45.0		264	26.8
200	30	12,317	-56.1		260	27.1
175	30	13,153	-62.1		256	27.0
150	28	14,094	-67.6		281	19.8
125	23	15,179	-72.2		286	14.4
100	14	16,490	-75.3		312	11.3
80	8	17,783	-75.0			

INTERNAT. FALLS, MINN. (971 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	360	- 2.2	79	285	1.6
1,000	30	125				
950	30	535	- 2.2	78	292	2.5
900	30	962	- 4.5	77	301	7.2
850	30	1,412	- 5.2	71	315	8.7
800	30	1,887	- 6.0	61	321	11.1
750	30	2,394	- 8.1	53	322	13.2
700	30	2,924	-10.5	47	321	14.6
650	30	3,498	-13.2	44	317	15.5
600	30	4,097	-16.7	44	311	18.3
550	30	4,747	-20.3	45	311	19.8
500	30	5,445	-24.2	46	316	21.6
450	29	6,221	-28.9	47	311	25.8
400	29	7,046	-34.9	52	307	29.1
350	28	7,950	-41.2		307	32.1
300	28	8,981	-47.4		308	34.8
250	28	10,170	-52.6		311	41.0
200	28	11,599	-54.7		301	40.0
175	28	12,456	-53.5		300	39.4
150	28	13,446	-53.7		300	37.5
125	27	14,617	-54.6		299	32.8
100	27	16,043	-54.9		296	26.2
80	24	17,467	-55.1		304	23.5
60	21	19,290	-56.5		301	19.4
50	18	20,424	-56.2		298	18.8
40	11	21,834	-57.0		301	19.8

JACKSON, MISS. (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	101	11.0	72	32	0.6
1,000	30	173	12.5	61	307	.8
950	30	610	11.6	53	217	2.1
900	30	1,055	9.5	54	255	5.1
850	30	1,528	7.7	51	261	9.7
800	30	2,026	6.4	45	267	13.2
750	30	2,563	4.8	34	273	15.3
700	30	3,114	2.4	33	278	17.3
650	30	3,714	- 1.0	30	278	21.2
600	30	4,343	- 5.2		282	22.9
550	30	5,024	- 9.4		277	27.6
500	30	5,751	-13.8		276	30.3
450	30	6,553	-19.3		278	30.7
400	30	7,408	-25.9		276	35.0
350	30	8,360	-33.3		277	39.6
300	28	9,419	-40.9		275	46.2
250	26	10,635	-49.4		268	55.6
200	28	12,071	-56.6		269	61.4
175	28	12,911	-59.4		266	55.6
150	28	13,869	-62.2		266	51.1
125	28	14,986	-64.7		268	43.5
100	27	16,338	-67.3		263	32.4
80	25	17,682	-66.6		264	24.9
60	23	19,433	-62.9		271	12.4
50	22	20,561	-60.3		281	7.8
40	22	21,958	-58.2		265	7.8
30	18	23,786	-56.4		273	11.1
20	8	26,387	-53.5			

JACKSONVILLE, FLA. (1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	6	13.5	86	352	2.7
1,000	30	172	15.6	71	351	4.3
950	30	607	13.3	67	342	4.9
900	30	1,060	11.1	61	336	4.3
850	30	1,536	9.2	53	308	3.7
800	30	2,036	7.2	38	300	6.0
750	30	2,570	5.1	32	297	10.7
700	30	3,126	3.0		283	13.8
650	30	3,726	- .1		274	17.5
600	30	4,359	- 3.5		269	20.6
550	30	5,042	- 7.9		269	25.4
500	30	5,776	-12.8		264	29.7
450	29	6,572	-18.5		266	35.0
400	28	7,436	-24.7		266	39.8
350	28	8,393	-31.8		266	49.5
300	28	9,464	-40.1		265	56.1
250	26	10,683	-48.7		269	61.8
200	28	12,120	-57.4		269	69.2
175	28	12,955	-61.3		267	66.0
150	28	13,902	-64.4		268	56.7
125	28	15,008	-67.1		268	47.0
100	27	16,350	-69.9		267	36.7
80	27	17,678	-68.9		267	22.7
60	22	19,413	-64.1		275	12.8
50	22	20,534	-61.8		263	8.0
40	21	21,919	-60.1		257	5.8
30	21	23,729	-56.6		274	9.9
20	10	26,353	-53.5			

KING SALMON, ALASKA (1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	15	- 9.8	75	9	7.0
1,000	30	28			1	12.6
950	30	426	- 9.8	70	3	14.4
900	30	841	-10.0	63	2	12.8
850	30	1,281	-11.0	55	340	10.9
800	30	1,745	-12.7	44	325	10.3
750	30	2,242	-14.7	40	313	12.0
700	30	2,756	-17.2	36	306	10.7
650	30	3,317	-20.5		280	11.5
600	30	3,895	-24.3		274	14.0
550	29	4,528	-28.4		262	15.2
500	29	5,199	-32.7		250	17.7
450	28	5,951	-37.4		240	22.1
400	28	6,743	-42.7		236	28.4
350	28	7,634	-47.5		233	34.8
300	28	8,642	-51.5		230	39.6
250	28	9,819	-52.2		225	37.7
200	28	11,265	-51.0		225	37.9
175	28	12,132	-51.0		229	38.9
150	28	13,134	-51.2		230	39.4
125	28	14,316	-51.7		230	37.3
100	28	15,762	-51.6		236	36.5
80	25	17,207	-52.6		241	38.9
60	22	19,062	-53.4		247	41.6
50	21	20,234	-53.4		255	42.2
40	19	21,660	-53.8		252	43.3
30	15	23,505	-54.1		254	43.5
20	8	26,011	-55.1			

KOTZEBUE, ALASKA (1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	-22.0	77	101	2.7
1,000	30	94			62	1.9
950	30	486	-16.7	62	15	1.4
900	30	882	-17.3	64	351	3.5
850	30	1,310	-17.6	63	336	6.2
800	30	1,763	-18.7	60	333	7.0
750	30	2,247	-20.5	56	330	6.8
700	30	2,750	-22.8	50	312	5.8
650	30	3,292	-25.8	46	306	6.2
600	30	3,865	-29.2	44	293	7.2
550	30	4,484	-33.1		295	7.6
500	30	5,144	-37.7		278	7.2
450	30	5,872	-42.0		269	9.9
400	30	6,652	-47.0		271	11.5
350	30	7,526	-51.8		257	11.8
300	30	8,515	-54.9		248	16.7
250	30	9,680	-53.9		263	18.5
200	28	11,120	-52.6		253	18.6
175	27	11,983	-52.6		259	22.7
150	27	12,978	52.7		251	24.9
125	27	14,152	-53.6		259	23.7
100	26	15,587	-53.8		261	28.6
80	25	17,015	-55.4		270	32.6
60	24	18,842	-57.2		265	41.8
50	20	19,991	-57.8		266	40.0
40	16	21,404	-58.0			
30	9	23,226	-58.0			

LAKE CHARLES, LA. (1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	5	14.4	79	106	0.4
1,000	30	173	15.9	66	47	.4
950	30	610	13.6	58	267	.8
900	30	1,062	11.6	55	269	3.1
850	30	1,538	10.0	52	287	6.2
800	30	2,041	8.5	45	294	7.8
750	30	2,577	6.7	35	285	10.7
700	30	3,136	3.8		283	15.9
650	30	3,737	.4		283	18.5
600	30	4,371	- 3.9		282	19.8
550	30	5,054	- 8.2		278	24.1
500	30	5,786	-12.9		275	26.2
450	30	6,585	-18.5		275	31.1
400	30	7,449	-24.9		273	31.5
350	30	8,406	-32.0		276	35.2
300	30	9,475	-40.2		274	44.1
250	30	10,695	-48.9		273	46.4
200	30	12,131	-57.1		268	52.6
175	30	12,969	-60.8			
150	30	13,919	-64.3			
125	28	15,030	-66.4			
100	27	16,371	-68.6			
80	26	17,706	-67.6			
60	25	19,458	-62.7			
50	24	20,588	-60.2			
40	23	21,991	-58.3			
30	19	23,806	-56.9			
20	7	26,409	-54.2			

LANDER, WYO. (833 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,696	- 1.7	62	259	2.5
1,000	30	210				
950	30	632				
900	30	1,072				
850	30	1,533				
800	30	2,021	1.4	45	326	2.5
750	30	2,544	- 1.5	43	327	7.4
700	30	3,084	- 4.8	40	327	12.6
650	30	3,662	- 8.3	40	330	18.8
600	30	4,279	-12.1	36	332	20.6
550	30	4,938	-16.2	36	330	23.1
500	30	5,649	-21.0	37	333	26.4
450	30	6,422	-26.5	36	325	26.0
400	30	7,258	-33.0		313	21.2
350	30	8,183	-39.8		325	24.7
300	30	9,221	-46.5		305	28.2
250	30	10,412	-52.7			
200	29	11,844	-56.2			
175	29	12,692	-55.6			
150	28	13,679	-57.2			
125	28	14,830	-57.8			
100	28	16,228	-60.1			
80	26	17,617	-59.3			
60	23	19,415	-58.6			
50	23	20,561	-58.3			
40	20	21,979	-57.3			
30	16	23,801	-56.5			

LAS VEGAS, NEV. (945 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	660	10.2	20	272	4.9
1,000	30	179				
950	30	614				
900	30	1,068	14.2		4	4.7
850	30	1,547	11.1	17	15	9.1
800	30	2,049	7.7	20	15	10.5
750	30	2,582	4.6		15	10.1
700	30	3,136	1.5		10	9.9
650	30	3,733	- 2.1		2	10.9
600	30	4,360	- 5.9		350	14.4
550	30	5,035	-10.5		337	17.1
500	30	5,763	-15.5		331	17.9
450	30	6,555	-21.4		326	21.4
400	30	7,406	-28.2		325	19.4
350	30	8,348	-35.6		319	22.0
300	30	9,402	-43.8		306	19.4
250	30	10,602	-52.3		303	21.8
200	30	12,024	-58.2		306	26.8
175	29	12,858	-59.6		307	26.4
150	27	13,824	-61.6		296	25.1
125	25	14,955	-63.8		303	20.6
100	23	16,322	-65.6		306	16.9
80	18	17,673	-66.3		309	11.7
60	17	19,427	-63.2		7	7.0
50	13	20,553	-61.1		356	7.2
40	11	21,942	-59.3		357	8.7
30	7	23,749	-58.1			

LITTLE ROCK, ARK. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	79	9.9	70	251	1.7
1,000	30	162	10.9	61	257	2.3
950	30	592	10.2	54	238	6.8
900	30	1,038	8.1	53	259	10.1
850	30	1,510	6.7	48	277	10.9
800	30	2,006	5.2	40	273	12.8
750	30	2,541	3.8	35	275	17.1
700	30	3,090	1.1	35	281	19.0
650	30	3,688	- 2.3	33	284	23.1
600	30	4,313	- 6.2	31	281	24.3
550	30	4,991	-10.3		281	26.4
500	30	5,716	-15.3		277	26.0
450	30	6,510	-20.8		277	29.5
400	30	7,362	-27.4		269	33.0
350	30	8,309	-34.7		272	35.2
300	30	9,368	-42.5		266	35.2
250	30	10,577	-50.4		265	45.5
200	30	12,014	-55.7		265	51.7
175	29	12,864	-57.9			
150	29	13,829	-60.5			
125	25	14,966	-63.0			
100	23	16,331	65.2			
80	22	17,688	-63.6			
60	22	19,464	-60.6			
50	21	20,599	-60.0			
40	20	21,995	-58.1			
30	15	23,813	-55.3			
20	8	26,415	-52.9			

McGRATH, ALASKA (997 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	103	-20.3	57	308	1.2
1,000	30	77				
950	30	463	-17.2	72	42	4.5
900	30	866	-15.1	72	73	4.9
850	30	1,299	-14.6	67	108	2.3
800	30	1,757	-15.7	60	171	1.7
750	30	2,243	-17.4	54	216	1.7
700	30	2,756	-19.9	52	220	2.5
650	30	3,308	-22.8	48	237	4.9
600	30	3,884	-26.1	47	225	8.2
550	30	4,510	-30.2	46	223	11.8
500	30	5,180	-34.9		227	14.8
450	30	5,915	-39.6		221	18.5
400	30	6,704	-44.5		229	23.3
350	30	7,588	-49.0		228	30.1
300	28	8,596	-52.1		228	30.3
250	28	9,772	-52.2		239	29.7
200	28	11,215	-51.0		262	32.2
175	28	12,082	-51.1		256	32.8
150	28	13,082	-51.5		263	34.0
125	28	14,263	-51.6		263	31.9
100	28	15,706	-52.4		263	36.5
80	26	17,155	-53.2		264	39.2
60	26	19,002	-53.9		270	43.7
50	26	20,169	-54.3		266	41.4
40	18	21,610	-54.6			
30	9	23,442	-55.3			

MAZATLAN, MEXICO (1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	14	25.1	75		
1,000	30	106	24.4	72		
950	30	559	24.2	48		
900	30	1,028	22.1	47		
850	30	1,522	19.1	45		
800	30	2,040	15.6	44		
750	30	2,592	12.0	50		
700	30	3,159	8.0	53		
650	30	3,774	4.0	52		
600	30	4,413	- .2	54		
550	30	5,107	- 4.6			
500	29	5,848	- 9.4			
450	29	6,664	-14.4			
400	29	7,539	-20.4			
350	29	8,513	-27.7			
300	27	9,603	-35.8			
250	23	10,847	-45.3			
200	11	12,284	-57.0			

MEDFORD, OREG. (978 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	401	5.0	85	193	0.6
1,000	30	219				
950	30	649	8.0	69	118	.6
900	30	1,089	9.9	50	121	3.1
850	30	1,562	8.3	41	160	2.9
800	30	2,061	6.0	40	248	2.7
750	30	2,593	3.5	33	290	5.1
700	30	3,143	.6	34	311	8.7
650	30	3,741	- 3.1	34	315	10.9
600	30	4,364	- 6.6	34	302	14.0
550	30	5,041	-11.2	33	291	13.6
500	30	5,762	-16.5	33	286	15.9
450	30	6,555	-22.6	34	261	15.3
400	30	7,398	-29.0	34	250	13.6
350	30	8,336	-36.4		234	5.8
300	30	9,385	-44.4		248	5.1
250	30	10,583	-51.9		240	5.1
200	30	12,003	-58.5		284	6.6
175	30	12,837	-59.9		316	10.3
150	30	13,796	-61.0		330	13.6
125	29	14,934	-63.1		329	10.3
100	28	16,300	-64.3		343	11.5
80	28	17,661	-64.1		18	11.5
60	28	19,427	-62.0		33	8.7
50	27	20,563	-60.3		46	7.4
40	26	21,954	-58.6		43	11.3
30	21	23,746	-57.7			
20	7	26,259	-56.0			

MIAMI, FLA. (1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	4	20.2	73	13	8.0
1,000	30	152	20.6	69	21	9.3
950	30	594	17.0	73	42	12.6
900	30	1,053	14.4	74	40	11.7
850	30	1,534	11.8	66	45	7.4
800	30	2,040	10.4	49	20	6.4
750	30	2,582	8.0	41	356	5.6
700	30	3,142	5.6		341	4.7
650	30	3,748	2.5		304	8.0
600	30	4,386	- 1.0		295	11.1
550	30	5,076	- 5.1		292	15.3
500	30	5,818	- 9.9		288	20.4
450	30	6,627	-15.5		290	22.9
400	29	7,499	-21.8		286	26.0
350	29	8,467	-29.0		290	28.9
300	29	9,551	-36.9		302	36.9
250	28	10,785	-46.1		292	42.3
200	28	12,234	-56.4		281	45.5
175	27	13,070	-62.0		285	45.5
150	27	14,009	-67.1		290	40.2
125	26	15,095	-70.1		288	27.0
100	25	16,415	-72.2		277	13.2
80	24	17,730	-69.9		231	1.4
60	21	19,465	-63.0			
50	20	20,593	-60.9			
40	18	21,993	-57.5			
30	18	23,820	-54.9			
20	13	26,425	-52.3			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

MIDLAND, TEX.
(921 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	871	10.1	36	178	1.2
1,000	28	172				
950	28	610				
900	28	1,061	12.6	30	211	1.6
850	28	1,538	10.7	27	278	4.9
800	28	2,038	8.2	25	294	9.1
750	28	2,578	5.2	24	294	12.2
700	28	3,130	2.7		290	14.6
650	28	3,732	- .7		279	18.8
600	28	4,359	- 4.7		290	18.3
550	28	5,040	- 9.2		282	20.0
500	28	5,768	-14.2		283	22.1
450	28	6,565	-20.0		273	28.6
400	28	7,420	-26.3		284	29.3
350	27	8,371	-33.9		281	30.3
300	27	9,432	-41.6		284	35.2
250	27	10,644	-50.0		281	40.8
200	27	12,077	-57.4		281	46.4
175	27	12,914	-59.9		279	43.9
150	27	13,870	-62.3		283	39.8
125	26	14,993	-64.6			
100	25	16,345	-67.1			
80	23	17,689	-65.2			
60	22	19,448	-63.0			
50	22	20,574	-61.0			
40	21	21,965	-58.8			
30	17	23,773	-56.5			
20	[illegible]	26,358	-54.7			
15						

MONTGOMERY, ALA.
(1013 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	61	10.3	80	317	1.7
1,000	30	173	13.3	63	303	1.7
950	30	605	11.4	57	306	3.5
900	30	1,054	9.4	53	296	6.8
850	30	1,527	7.8	47	291	9.9
800	30	2,025	6.3	40	283	12.8
750	30	2,558	4.6	31	280	16.3
700	30	3,112	2.1	29	281	18.3
650	30	3,709	- 1.3		282	21.0
600	30	4,339	- 4.9		277	24.9
550	30	5,019	- 9.2		273	28.4
500	29	5,745	-11.0		271	31.1
450	29	6,542	-19.9		274	34.2
400	29	7,399	-26.4		271	39.8
350	29	8,350	-33.4		270	46.4
300	29	9,414	-41.2		267	54.8
250	29	10,630	-49.3		267	63.9
200	28	12,077	-56.2		273	65.5
175	28	12,919	-59.0		268	62.2
150	28	13,877	-62.5		268	57.7
125	28	14,995	-64.6		267	47.0
100	27	16,345	-66.5		264	40.2
80	26	17,694	-65.8		266	26.8
60	26	19,457	-62.1		274	15.0
50	25	20,590	-60.1		279	9.9
40	25	21,987	-58.3		267	8.7
30	24	23,805	-56.2		276	15.3
20	19	26,399	-53.5		291	15.3
15	7	28,248	-52.9			

NANTUCKET, MASS.
(1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	11	7.6	78	273	2.3
1,000	30	145	8.1	71	281	1.3
950	30	567	6.0	69	262	10.3
900	30	1,010	3.9	61	263	13.8
850	30	1,473	1.6	62	260	12.8
800	30	1,960	- .3	57	[illegible]	13.6
750	30	2,479	- 2.0	53	251	16.1
700	30	3,021	- 4.2	50	252	17.9
650	30	3,605	- 7.0	47	257	24.1
600	30	4,223	-10.2	46	260	25.6
550	30	4,888	-14.5	41	[illegible]	25.6
500	29	5,607	-19.1	41	248	19.6
450	29	6,388	-24.5	39	250	18.8
400	[illegible]	7,231	-30.4	39	252	20.6
350	[illegible]	8,16[illegible]	-37.6		270	23.9
300	29	9,210	-45.1		279	22.1
250	29	10,405	-52.5			
200	29	11,830	-56.5			
175	26	12,670	-57.9			
150	25	13,638	-57.8			
125	24	14,783	-59.2			
100	23	16,179	-61.1			
80	21	17,566	-60.5			
60	18	19,360	-60.6			
50	17	20,492	-60.3			
40	17	21,883	-59.7			
30	12	23,698	-58.5			
20	5	26,294	-57.4			
15						

NASHVILLE, TENN.
(999 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	177	8.3	71	[illegible]	2.7
1,000	30	168			288	1.6
950	30	598	8.3	52	[illegible]	7.4
900	30	1,038	5.9	51	265	9.1
850	30	1,504	3.9	52	272	11.7
800	30	1,995	1.7	46	280	14.1
750	30	2,524	.7	38	281	17.9
700	30	3,066	1.3	34	[illegible]	21.8
650	30	3,658	- 4.5	[illegible]	[illegible]	24.7
600	30	4,279	[illegible]	[illegible]	282	25.8
550	30	4,951	-12.4	32	[illegible]	27.8
500	30	5,670	-17.1		280	27.8
450	30	6,459	-22.7		278	29.5
400	30	7,306	-28.7		273	34.6
350	30	8,248	-35.5		[illegible]	[illegible]
300	30	9,304	-42.4		265	35.5
250	30	10,515	-49.6		259	31.5
200	30	11,955	-55.1			
175	[illegible]	12,811	-57.4			
150	29	13,779	-59.5			
125	28	14,913	-61.7			
100	26	16,287	-63.2			
80	26	17,657	-63.0			
60	24	19,430	-61.4			
50	21	20,565	-59.6			
40	21	21,964	-58.4			
30	23	23,780	-56.7			
20	11	26,330	-55.4			
15						

N.Y. INT. AP IDLEWILD
(101[illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	[illegible]	8.2	70	269	2.7
1,000	[illegible]	[illegible]	7.4	65	287	3.1
950	30	[illegible]	[illegible]	69	258	5.1
900	30	1,013	3.8	[illegible]	254	[illegible]
850	30	1,476	2.1	[illegible]	[illegible]	10.7
800	30	1,963	- .3	63	254	14.6
750	30	2,484	- 2.4	[illegible]	[illegible]	14.2
700	30	3,023	- 4.9	57	258	[illegible]
650	[illegible]	3,603	- 7.5	[illegible]	[illegible]	21.8
600	29	4,218	-10.9	[illegible]	[illegible]	26.6
550	28	4,885	-14.6	[illegible]	248	29.5
500	27	5,602	-19.7	43	249	[illegible]
450	26	6,375	-24.9		252	32.2
400	26	7,218	-30.9		254	37.1
350	26	8,150	-38.0		[illegible]	43.1
300	26	9,194	-44.9		[illegible]	41.3
250	26	10,392	-51.7		[illegible]	50.3
200	22	11,807	-54.2		260	[illegible]
175	22	12,662	-54.5		[illegible]	50.5
150	20	13,650	-56.5		[illegible]	44.3
125	19	14,806	-58.7		259	[illegible]
100	19	16,199	-60.9		[illegible]	40.6
80	17	[illegible]	-59.8		[illegible]	37.7
60	17	[illegible]	-59.6		262	[illegible]
50	16	20,518	-59.5		[illegible]	[illegible]
40	13	21,910	-59.9		[illegible]	6.8
30	9	23,721	-57.3			
20						
15						

NOME, ALASKA
(1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	-14.4	73	6	4.1
1,000	30	87			347	5.8
950	30	479	-14.1	64	345	4.1
900	30	886	-15.2	63	1	6.4
850	30	1,316	-16.2	61	338	8.5
800	30	1,771	-17.3	57	341	8.0
750	30	2,257	-19.4	54	336	8.0
700	30	2,763	-21.9	50	312	7.0
650	30	3,311	-24.8	45	305	8.9
600	30	3,882	-28.1	42	302	9.7
550	30	4,506	-32.0	41	301	11.8
500	30	5,168	-36.4		288	11.8
450	30	5,900	-41.1		282	12.2
400	30	6,681	-46.4		284	14.2
350	30	7,557	-51.2		256	13.6
300	30	8,549	-54.6		247	16.3
250	30	9,715	-53.5		268	16.3
200	30	11,155	-51.8		256	24.1
175	30	12,021	-51.6		258	24.3
150	30	13,019	-51.8		241	26.8
125	30	14,200	-52.2		252	26.4
100	30	15,640	-53.1		249	35.2
80	30	17,075	-53.8		254	41.2
60	29	18,921	-55.1		253	46.8
50	29	20,083	-55.5			
40	27	21,496	-56.1			
30	21	23,327	-56.0			
20	10	25,889	-56.6			
15						

NORFOLK, VA.
(1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	10.6	78	269	0.4
1,000	30	161	11.6	71	220	2.7
950	30	590	9.3	68	235	6.8
900	30	1,035	7.0	65	245	8.4
850	30	1,504	4.9	59	254	11.1
800	30	1,996	3.0	54	258	13.6
750	30	2,527	1.3	48	255	16.5
700	29	3,065	- 1.9	42	251	20.8
650	29	3,655	- 5.3	35	250	25.3
600	29	4,275	- 9.0	36	250	29.7
550	28	4,951	-12.2		254	32.8
500	28	5,673	-16.7		252	39.4
450	28	6,460	-22.5		250	40.6
400	28	7,310	-28.7		252	47.6
350	27	8,262	-35.7		257	52.4
300	27	9,316	-43.6		260	55.2
250	27	10,518	-51.5		260	58.3
200	27	11,946	-56.7		261	62.9
175	27	12,790	-58.2		263	60.2
150	27	13,754	-60.5		265	51.9
125	24	14,892	-62.8		263	45.5
100	22	16,253	-64.1		265	35.9
80	20	17,625	-63.2		269	23.5
60	19	19,406	-62.0		265	12.0
50	16	20,543	-60.1		272	6.6
40	12	21,934	-58.2		345	4.9
30	7	23,765	-55.8			
20						
15						

NORTH PLATTE, NEBR.
(920 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	848	0.9	74	321	4.9
1,000	30	162				
950	30	584				
900	30	1,021	2.9	62	322	9.5
850	30	1,484	2.6	50	339	18.1
800	30	1,972	.5	48	338	19.0
750	30	2,496	- 2.1	47	328	20.8
700	30	3,033	- 5.1	47	321	18.6
650	30	3,615	- 8.1	16	305	19.4
600	30	4,229	-11.7	46	300	19.8
550	30	4,892	-15.7	44	290	20.8
500	30	5,603	-20.4	39	291	24.1
450	30	6,380	-25.9	37	277	23.5
400	30	7,216	-32.2	39	262	28.6
350	30	8,144	-39.0		268	29.9
300	30	9,186	-45.3		261	38.3
250	30	10,385	-51.2		263	29.5
200	30	11,819	-54.6			
175	30	12,673	-54.9			
150	30	13,656	-55.4			
125	30	14,813	-57.3			
100	29	16,215	-58.7			
80	28	17,614	-58.8			
60	28	19,421	-58.6			
50	27	20,564	-58.0			
40	25	21,976	-57.2			
30	19	23,804	-56.4			
20						
15						

OAKLAND, CALIF.
(1021 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	13.5	61	332	1.4
1,000	30	180	15.9	47	1	2.3
950	30	619	15.3	38	19	5.8
900	30	1,073	14.2	30	13	6.4
850	30	1,554	12.1	27	3	5.8
800	30	2,059	9.7		6	6.4
750	30	2,595	6.7		1	7.6
700	30	3,155	3.4		353	9.1
650	30	3,755	- .5		343	9.1
600	30	4,387	- 5.0		336	11.7
550	30	5,066	- 9.7		[illegible]	15.0
500	30	5,793	-15.3		328	15.9
450	30	6,587	-21.3	30	324	17.7
400	30	7,438	-27.8	32	317	20.0
350	30	8,383	-35.4		315	22.9
300	30	9,438	-43.3		317	23.9
250	30	10,642	-51.8		317	26.6
200	30	12,064	-58.7		323	29.3
175	28	12,901	-60.7		[illegible]	24.9
150	28	13,857	-62.3		319	21.1
125	27	14,981	-63.9		327	19.0
100	26	16,344	-66.4		333	13.8
80	24	17,697	-65.4		336	9.7
60	24	19,459	-62.5		11	7.0
50	21	20,587	-60.8		[illegible]	7.0
40	23	21,982	-58.1		43	6.4
30	23	23,801	-56.1		40	7.4
20	17	26,388	-53.0		14	7.4
15	5	28,233	-52.9			

OKLAHOMA CITY, OKLA.
(973 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	391	7.4	64	296	1.0
1,000	30	166				
950	30	596	10.0	48	275	2.3
900	30	1,041	8.8	41	294	10.1
850	30	1,513	7.2	41	291	12.6
800	30	2,010	5.3	37	296	13.0
750	30	2,546	3.0	34	286	15.3
700	30	3,091	.8	30	276	19.0
650	30	3,692	- 1.9		273	21.1
600	30	4,316	- 5.8		268	22.9
550	30	4,996	-10.1		269	24.3
500	30	[illegible]	-15.4		265	23.9
450	30	6,512	-21.5		[illegible]	27.8
400	30	7,361	-28.1		286	26.6
350	30	8,304	-35.5		[illegible]	33.6
300	30	9,359	-43.2		295	29.3
250	30	10,563	-51.3		297	33.2
200	30	11,994	-56.4		296	35.0
175	30	[illegible]	-57.8		[illegible]	32.4
150	30	13,806	-59.3		280	33.8
125	30	14,940	-61.8			
100	30	16,314	-63.5			
80	29	17,687	-62.7		301	13.8
60	27	19,467	-60.6			
50	27	20,603	-59.6			
40	25	21,999	-57.8			
30	22	23,817	-56.0			
20	6	26,380	-55.1			
15						

OMAHA, NEBR.
(969 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	403	3.3	68	309	2.9
1,000	30	143				
950	30	565	3.8	61	297	5.6
900	30	1,000	2.3	60	308	13.8
850	30	1,460	.8	56	305	15.0
800	30	1,946	- .6	53	303	16.3
750	30	2,469	- 2.3	46	303	14.8
700	30	3,006	- 4.5	42	295	19.4
650	30	3,591	- 7.4	41	289	18.8
600	30	4,206	-10.9	41	292	22.7
550	29	4,870	-15.2	42	288	25.1
500	29	5,580	-20.1	41	287	25.8
450	29	6,357	-26.0	39	286	26.6
400	29	7,194	-32.1	39	282	28.7
350	29	8,123	-38.8		275	32.2
300	28	9,159	-45.5		286	35.2
250	28	10,354	-52.6		287	36.5
200	28	11,783	-55.6		283	38.3
175	27	12,634	-55.7		280	37.5
150	27	13,615	-56.1		277	37.5
125	26	14,770	-57.9		283	30.1
100	26	16,173	-58.8		285	23.7
80	25	17,568	-59.1		289	20.4
60	23	19,370	-58.6		298	11.1
50	22	20,512	-58.7		301	12.0
40	21	21,923	-57.8		316	8.4
30	15	23,726	-57.7		293	9.5
20	5	26,263	-58.6			

PEORIA, ILL.
(992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	201	4.9	71	243	4.1
1,000	30	137				
950	30	561	4.5	64	242	9.7
900	30	995	2.1	64	252	15.0
850	30	1,455	.3	58	266	16.9
800	30	1,940	- 1.5	48	274	19.0
750	30	2,459	- 3.2	42	277	19.8
700	30	2,996	- 5.3	44	277	22.9
650	30	3,581	- 8.4	45	277	25.3
600	30	4,192	-11.9	44	280	27.4
550	30	4,857	-15.5	38	280	31.1
500	30	5,566	-19.9	36	283	32.6
450	30	6,349	-25.4		282	34.6
400	30	7,183	-31.7	36	290	35.2
350	30	8,113	-38.1		281	38.5
300	30	9,156	-45.1		282	43.7
250	30	10,353	-51.8		278	47.6
200	30	11,785	-55.0		273	50.5
175	30	12,635	-55.6		269	49.1
150	30	13,613	-56.9		270	44.5
125	29	14,762	-58.1		263	38.5
100	29	16,159	-59.7		261	31.1
80	28	17,543	-60.2		267	19.8
60	23	19,337	-59.1		275	9.9
50	22	20,482	-58.5		300	6.6
40	20	21,885	-58.4		287	4.9
30	10	23,740	-58.3			
20						

PHOENIX, ARIZ.
(978 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	341	15.5	28	11	1.0
1,000	30	152				
950	30	592	19.4	15	11	3.9
900	30	1,053	16.7		28	5.4
850	30	1,536	13.4	17	34	4.9
800	30	2,042	9.6	19	45	4.7
750	30	2,579	6.2		40	5.8
700	30	3,135	3.1		6	6.2
650	30	3,739	- .7		345	8.9
600	30	4,366	- 4.7		329	12.6
550	29	5,047	- 9.4		321	16.9
500	29	5,772	-14.7		323	18.6
450	29	6,572	-20.4		308	19.8
400	29	7,423	-26.9		305	20.8
350	29	8,370	-34.4		297	25.8
300	29	9,429	-42.5		291	28.2
250	29	10,637	-50.6		286	35.2
200	29	12,067	-57.1		281	35.4
175	29	12,906	-59.0		283	31.9
150	29	13,867	-61.0		288	27.4
125	27	14,985	-63.2		292	23.7
100	25	16,360	-65.2		297	19.2
80	23	17,709	-65.3		316	12.4
60	22	19,470	-62.2		351	5.6
50	21	20,598	-60.8		359	6.8
40	19	21,992	-58.9		32	5.8
30	14	23,814	-55.8			
20						

PITTSBURGH, PA.
(976 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	353	5.2	65	215	3.7
1,000	30	151				
950	30	577	6.0	60	216	8.4
900	30	1,012	3.3	62	240	14.4
850	30	1,473	.2	67	256	16.3
800	30	1,957	- 2.3	66	259	19.2
750	30	2,474	- 4.4	60	262	19.2
700	30	[illegible]	- 6.5	48	262	23.7
650	30	3,592	- 9.0	42	262	23.5
600	30	4,201	-12.3	39	[illegible]	27.2
550	30	4,863	-16.4	40	263	28.9
500	30	5,570	-21.5	42	259	32.2
450	30	6,343	-26.6	41	260	35.7
400	30	7,178	-32.5	45	262	40.0
350	30	8,107	-38.6		265	42.9
300	30	9,148	-45.3		263	48.2
250	30	10,347	-50.9		261	53.2
200	29	11,788	-54.8		261	56.1
175	27	12,651	-56.2		263	52.3
150	[illegible]	13,632	-58.4		262	[illegible]
125	22	14,774	-60.1		261	44.7
100	6	16,166	-60.5			
80						
60						
50						
40						
30						
20						

PORTLAND, ME.
(1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	20	3.4	82	264	3.9
1,000	30	136			271	5.4
950	30	558	4.3	61	264	10.5
900	30	993	2.2	59	266	12.0
850	30	1,453	.4	[illegible]	257	14.6
800	30	1,937	- 1.9	52	[illegible]	17.1
750	30	2,456	- 4.0	52	252	19.6
700	30	2,990	- 6.8	53	252	22.5
650	30	3,573	- 9.5	47	248	26.2
600	29	4,182	-12.9	45	248	30.3
550	29	4,845	-16.5	42	246	34.0
500	29	5,553	-20.6		245	39.0
450	29	6,334	-25.7		247	43.9
400	29	7,168	-31.8		246	45.1
350	29	8,098	-38.5		[illegible]	50.9
300	29	9,140	-45.6		249	53.4
250	29	10,335	-52.5		250	56.1
200	29	[illegible]	-55.9		251	56.1
175	28	12,608	-55.7		[illegible]	58.3
150	28	13,588	-56.2		255	49.5
125	26	14,756	-57.7		[illegible]	43.9
100	25	16,156	-59.1		261	33.6
80	24	17,546	-58.7		262	26.6
60	24	19,350	-59.1		259	13.0
50	21	20,493	-58.4		257	11.3
40	17	21,891	-59.1		265	13.2
30	12	23,691	-58.6		282	8.7
20						

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	RAPID CITY, S. DAK. (907 MB.)						ST. CLOUD, MINN. (977 MB.)						ST. PAUL IS., ALASKA (1005 MB.)						SALEM, OREG. (1018 MB.)						SALT LAKE CITY, UTAH (880 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	966	1.0	67	331	9.7	30	316	0.3	80	300	2.7	30	10	-0.9	76	31	7.6	30	61	5.8	88	222	1.6	30	1,288	0.0	78	155	1.4
1,000	29	173					30	131					30	46			49	4.7	30	209	7.5	76	315	.4	30	246				
950	29	595					30	546	.3	71	288	5.1	30	457	-1.0	77	40	5.1	30	635	8.2	66	87	.4	30	670				
900	29	1,031			326	13.2	30	975	1.5	69	308	7.6	30	878	-6.9	80	31	4.9	30	1,078	8.2	56	205	3.5	30	1,106				
850	29	1,493	1.5	53	323	21.5	30	1,430	-2.1	58	319	8.4	30	1,322	-9.5	80	2	4.1	30	1,549	6.7	47	231	6.8	30	1,568	2.5	60	82	.6
800	29	1,979	-.9	51	327	26.6	30	1,910	-3.6	52	304	10.1	30	1,786	-11.8	71	333	4.7	30	2,044	4.6	43	248	9.1	30	2,057	.7	52	336	3.1
750	29	2,495	-3.6	50	328	25.6	30	2,423	-5.7	46	289	12.2	30	2,284	-14.2	60	321	7.0	30	2,570	1.7	35	263	11.5	30	2,583	-1.6	50	326	7.6
700	29	3,034	-6.6	47	327	26.1	30	2,956	-8.2	46	284	15.0	30	2,800	-16.6	55	321	9.9	30	3,120	-1.3	36	267	14.2	30	3,121	-4.2	46	331	12.4
650	29	3,612	-10.0	50	322	26.4	30	3,531	-11.2	45	284	15.3	30	3,356	-19.7	52	315	12.8	30	3,709	-4.5	39	276	16.3	30	3,711	-7.4	40	328	16.9
600	29	4,222	-13.3	49	318	25.8	30	4,140	-14.1	44	279	17.9	30	3,942	-23.5	49	309	13.2	30	4,333	-8.2	40	278	19.8	30	4,321	-11.0	42	331	19.4
550	29	4,883	-17.0	46	318	26.2	30	4,795	-17.9	46	274	20.8	30	4,570	-27.7	49	310	12.0	30	5,004	-12.5	41	282	22.0	30	4,988	-15.1	42	333	20.2
500	29	5,588	-21.8	46	318	28.2	30	5,502	-22.0	45	267	23.7	29	5,252	-32.5	48	300	14.0	30	5,725	-17.5	42	281	24.5	30	5,699	-19.9	40	332	23.5
450	29	6,361	-27.3	42	315	33.1	30	6,277	-27.4	41	272	26.4	28	5,988	-38.0		296	14.2	30	6,513	-23.3	45	283	24.1	30	6,481	-25.3	39	328	26.8
400	29	7,193	-33.3	40	317	36.5	30	7,105	-33.7	41	271	29.5	28	6,786	-43.5		292	17.1	30	7,356	-29.7	43	291	26.8	30	7,317	-31.7		329	30.7
350	26	8,126	-39.9		319	36.5	29	8,035	-40.3		255	28.7	28	7,672	-48.7		285	21.6	30	8,292	-37.3		292	29.5	29	8,241	-38.7		323	31.1
300	28	9,161	-46.8		318	38.9	29	9,069	-47.1				28	8,672	-53.2		282	23.9	30	9,337	-45.2		294	30.1	29	9,286	-45.8		323	30.5
250	25	10,374	-52.8		319	38.1	29	10,260	-52.3				27	9,843	-54.1		268	24.3	29	10,526	-52.6		298	33.8	29	10,480	-52.1		330	31.5
200	24	11,800	-56.9		320	40.2	28	11,702	-54.9				27	11,281	-51.4		258	22.1	28	11,951	-58.0		292	38.3	28	11,900	-56.2		329	33.0
175	22	12,647	-55.5		320	40.2	26	12,555	-54.6				25	12,145	-50.3		257	23.7	28	12,788	-58.8		293	36.5	28	12,745	-57.5		325	28.7
150	17	13,619	-55.8		309	34.4	26	13,541	-54.7				21	13,156	-49.8		264	27.0	28	13,752	-59.4		292	31.9	28	13,716	-58.0		319	28.6
125	11	14,822	-56.1		323	38.1	25	14,712	-55.7				21	14,349	-49.3		260	27.4	27	14,886	-61.8		299	27.4	27	14,856	-59.5		318	24.7
100	7	16,228	-57.5				23	16,117	-56.6				20	15,819	-49.5		258	33.0	27	16,260	-63.0		299	21.6	26	16,239	-60.8		318	18.6
80							23	17,530	-57.2				16	17,290	-50.0				27	17,633	-62.0		310	14.0	23	17,613	-60.9		313	16.9
60							23	19,350	-57.0				8	19,173	-50.7				23	19,408	-60.6		327	9.1	17	19,416	-59.6		326	3.9
50							20	20,517	-57.5				7	20,365	-50.3				21	20,553	-58.5		340	6.4	14	20,558	-58.1		260	1.7
40							18	21,918	-57.3										20	21,963	-57.9		9	7.0	11	21,974	-56.1			
30							9	23,711	-56.6										18	23,769	-56.5		6	10.9						
20																			10	26,307	-56.1									

Standard pressure surface (mb.)	SAN ANTONIO, TEX. (992 MB.)						SAN DIEGO, CALIF. (1003 MB.)						SAN JUAN, P. R. (1013 MB.)						SANTA MARIA, CALIF. (1011 MB.)						SANTA MONICA, CALIF. (1014 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	243	11.3	51	44	2.5	30	124	15.3	46	35	2.5	30	6	23.8	85	130	3.9	30	74	12.4	55	5	0.4	29	38	16.9	51	5	2.7
1,000	30	173					30	149	16.8	39	19	3.3	30	120	21.3	77	113	8.2	30	167	15.3	48	357	2.7	29	155	19.3	37	357	3.1
950	30	616	14.5	48	81	4.3	30	591	18.6		28	1.1	30	572	21.5	80	94	11.8	30	605	17.5	27	7	7.6	29	594	19.7	21	1	4.9
900	29	1,066	12.2	49	192	.4	30	1,050	16.3		40	4.7	30	1,036	18.6	79	94	10.5	30	1,064	16.2		13	7.4	29	1,059	17.0	20	37	3.9
850	29	1,543	10.6	46	247	3.1	30	1,533	13.5		29	4.9	30	1,524	15.8	77	91	7.6	30	1,547	13.4		28	6.6	29	1,543	14.0	20	62	3.9
800	29	2,047	9.3	45	257	6.8	30	2,040	10.4		18	5.8	30	2,038	13.0	74	91	5.6	30	2,054	10.6		40	5.8	29	2,051	10.7	21	65	4.3
750	29	2,586	7.6	33	271	11.5	30	2,580	7.1		16	6.8	30	2,584	10.6	61	81	3.9	30	2,592	7.9		25	7.6	29	2,588	7.3		32	6.6
700	29	3,146	5.0		268	14.8	30	3,138	4.3		9	10.1	30	3,152	8.1	42	62	2.7	30	3,154	4.7		8	9.9	29	3,149	4.3		7	9.3
650	29	3,752	1.2		270	15.7	29	3,742	.6		0	10.5	30	3,766	5.6		77	1.7	30	3,757	.7		356	9.3	29	3,753	.5		6	10.5
600	29	4,386	-2.9		276	17.3	29	4,373	-3.7		344	8.9	30	4,411	2.3		136	.6	30	4,391	3.6		353	10.7	29	4,385	-3.9		356	10.1
550	29	5,069	-7.4		273	20.4	29	5,056	-8.6		346	10.7	30	5,108	-1.7		225	2.1	30	5,072	-8.4		349	12.0	29	5,068	-8.8		347	11.5
500	29	5,804	-12.7		274	24.5	29	5,787	-13.9		339	13.2	30	5,859	-6.5		256	2.5	30	5,804	-13.8		336	13.2	29	5,797	-14.2		343	12.2
450	29	6,609	-18.2		271	28.9	29	6,587	-19.9		326	14.8	30	6,684	-12.1		265	5.6	30	6,603	-19.9		342	10.9	29	6,593	-20.4		335	13.2
400	29	7,468	-24.7		271	30.1	29	7,442	-26.6		313	17.1	30	7,564	-18.0		277	7.0	30	7,458	-26.8		332	13.8	29	7,447	-27.0		323	15.5
350	29	8,424	-32.1		278	36.9	28	8,394	-34.1		308	21.0	29	8,547	-25.4		280	10.5	30	8,406	-34.5		327	13.4	29	8,393	-34.9		316	21.0
300	29	9,492	-40.1		275	44.9	28	9,454	-42.8		300	27.8	29	9,646	-33.8		280	14.6	30	9,464	-43.0		324	14.4	29	9,448	-43.6		313	21.6
250	29	10,711	-48.9		274	51.1	28	10,660	-51.4		293	31.3	29	10,895	-44.0		279	18.8	30	10,669	-51.4		311	19.2	28	10,652	-52.2		310	23.3
200	29	12,146	-57.3		288	47.8	28	12,083	-58.9		291	30.3	29	12,351	-56.2		283	20.8	30	12,092	-58.4		319	18.8	27	12,072	-59.0		299	21.0
175	29	12,982	-60.9				27	12,916	-60.9		288	29.5	29	13,186	-62.7		281	22.7	30	12,926	-60.5		314	15.7	27	12,904	-60.8		302	18.5
150	28	13,932	-64.4				26	13,870	-62.7		292	24.9	28	14,119	-69.5		269	21.2	30	13,882	-62.3		319	18.5	27	13,858	-62.2		304	16.3
125	26	15,035	-67.2				26	14,986	-65.4		293	20.8	25	15,192	-74.7		268	20.8	30	15,001	-64.5		323	13.8	27	14,976	-64.7		300	13.6
100	24	16,373	-69.5				25	16,335	-67.8		302	18.6	21	16,471	-78.4		287	9.1	30	16,358	-66.2		330	11.5	27	16,329	-66.9		314	11.3
80	22	17,700	-67.9				25	17,675	-67.0		307	9.1	17	17,752	-75.9		60	4.1	28	17,705	-65.9		350	9.3	27	17,674	-66.6		333	9.3
60	22	19,444	-63.6				24	19,420	-63.7		351	5.1	16	19,456	-65.6		97	7.0	28	19,465	-62.5		32	5.4	27	19,428	-62.9		16	6.2
50	22	20,567	-61.0				23	20,545	-61.1		55	5.1	16	20,573	-61.8		93	11.8	25	20,592	-60.4		43	5.6	25	20,554	-61.4		42	5.4
40	21	21,958	-58.5				22	21,931	-59.5		52	3.7	16	21,965	-57.9		96	16.5	23	21,984	-58.2		50	6.0	25	21,943	-59.3		44	5.4
30	17	23,781	-56.6				19	23,746	-56.6		41	8.0	14	23,792	-54.7		89	14.2	18	23,803	-56.0		43	8.0	24	23,753	-56.2		37	5.4
20	6	26,362	-53.7				13	26,326	-54.1		40	7.0	9	26,417	-49.5				5	26,380	-52.4				21	26,351	-53.4		359	7.4
15													5	28,326	-42.9										9	28,213	-52.4			

Standard pressure surface (mb.)	S. STE. MARIE, MICH. (988 MB.)						SEATTLE, WASH. (1011 MB.)						SHREVEPORT, LA. (1011 MB.)						SPOKANE, WASH. (941 MB.)						SWAN ISLAND, W. I. (1014 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	1.1	86	142	1.2	30	124	6.0	89	61	1.6	29	76	11.5	69	278	1.2	30	722	0.8	83	194	1.2	30	10	26.1	74	36	10.9
1,000	30	120					30	212	6.8	78	78	1.7	29	170	13.3	56	271	1.6	30	233					30	130	25.0	75	30	13.8
950	30	531	.2	75	179	2.1	30	639	7.1	67	188	5.4	29	603	11.2	53	260	1.2	30	649					30	582	21.3	79	32	15.9
900	30	965	-1.9	78	232	4.5	30	1,078	5.8	60	218	6.4	29	1,050	9.2	50	251	4.9	30	1,084	1.1	72	204	2.7	30	1,047	17.9	80	36	14.0
850	30	1,417	-4.4	81	258	8.4	30	1,546	4.5	56	229	8.4	29	1,523	8.1	44	285	8.9	30	1,544	1.0	61	245	6.8	30	1,534	14.7	79	39	10.7
800	30	1,893	-6.4	76	266	10.7	30	2,038	2.5	51	244	8.4	29	2,022	6.6	40	284	11.8	30	2,030	.3	55	278	10.7	30	2,046	12.4	67	53	8.4
750	30	2,401	-8.4	67	268	13.0	30	2,563	.1	44	257	10.3	29	2,558	4.9		279	14.4	30	2,553	-1.5	54	296	13.0	30	2,594	10.0	56	59	6.2
700	30	2,929	-10.5	59	267	14.4	30	3,107	-2.6	41	262	10.7	29	3,110	2.0		276	18.1	30	3,094	-4.0	51	305	15.2	30	3,157	7.6	48	63	6.2
650	30	3,501	-13.2	55	269	17.5	30	3,696	-6.0	39	270	14.4	29	3,711	-1.3		274	21.8	30	3,683	-6.9	46	305	18.3	30	3,773	4.5	44	69	6.2
600	29	4,103	-16.2	52	269	18.6	30	4,312	-9.8	38	276	17.9	29	4,338	-5.2		278	24.3	30	4,296	-10.5	44	301	20.8	30	4,412	1.1	42	69	4.5
550	29	4,754	-19.9	50	267	21.0	29	4,979	-13.7	42	274	21.8	29	5,018	-9.5		277	25.3	30	4,963	-14.9	44	310	22.7	30	5,110	-2.9		72	5.6
500	29	5,453	-24.3	49	263	23.3	29	5,697	-18.7	44	278	26.0	29	5,745	-14.6		275	27.2	30	5,675	-19.9	45	312	23.9	30	5,857	-7.1		60	5.8
450	29	6,218	-29.6	50	261	26.2	29	6,483	-24.1	46	278	28.2	29	6,542	-20.3		275	30.9	29	6,451	-25.5	44	315	29.1	30	6,681	-12.4		38	5.1
400	29	7,043	-35.4		267	29.7	29	7,322	-30.3	44	280	30.3	28	7,394	-26.9		276	34.0	29	7,290	-31.6	44	309	31.9	30	7,561	-18.7		53	3.9
350	29	7,960	-41.6		269	29.7	29	8,257	-37.8	44	287	32.6	28	8,342	-34.3		275	40.4	29	8,219	-38.7		303	32.4	29	8,540	-26.0		132	.8
300	28	8,997	-48.0		271	33.2	29	9,301	-45.7		290	35.0	28	9,402	-42.3		273	46.6	29	9,258	-46.2		308	36.9	29	9,635	-34.6		226	4.9
250	26	10,171	-51.6		267	34.0	28	10,490	-53.2		294	40.4	28	10,610	-50.7		269	56.3	29	10,446	-53.9		315	38.9	28	10,882	-44.9		216	11.3
200	25	11,615	-52.4		276	29.9	26	11,898	-58.4		298	44.9	28	12,040	-57.3		268	62.0	29	11,862	-57.3		313	40.6	28	12,332	-57.2		211	16.9
175	25	12,475	-53.0		277	29.3	24	12,742	-57.3		304	35.2	27	12,883	-59.9		267	61.4	29	12,705	-56.9		312	38.1	28	13,163	-63.7		208	21.4
150	25	13,466	-53.8		277	28.4	24	13,712	-59.0		305	29.3	26	13,842	-63.1		266	50.5	29	13,677	-58.0		311	33.4	27	14,090	-70.4		212	21.6
125	23	14,632	-55.2		281	27.2	24	14,850	-60.9		302	31.7	25	14,954	-65.3		267	45.3	29	14,819	-59.5		309	30.9	27	15,158	-74.5		218	15.0
100	23	16,051	-56.3		281	23.7	24	16,233	-61.3		305	25.1	24	16,308	-67.4		269	32.2	29	16,210	-60.6		315	24.3	20	16,450	-77.0		256	5.8
80	22	17,465	-56.7		283	21.2	23	17,618	-60.9		309	15.5	22	17,654	-67.0		264	19.4	27	17,604	-59.9		315	19.2	17	17,729	-75.5		121	6.2
60	21	19,289	-57.3		292	14.8	23	19,409	-59.4		305	12.4	21	19,410	-63.3		282	8.7	26	19,405	-58.4		319	11.7	15	19,439	-65.8		86	15.2
50	21	20,439	-57.8		292	10.1	22	20,554	-58.6		317	9.3	19	20,535	-61.2		265	3.3	24	20,540	-58.3		319	10.9	13	20,558	-61.9		95	18.3
40	18	21,845	-59.0		292	12.0	20	21,967	-57.0		348	6.4	17	21,926	-59.4		287	6.8	20	21,966	-56.3		335	7.6	12	21,943	-59.7		93	23.9
30	16	23,647	-58.5		296	10.3	16	23,804	-55.8		11	6.8	14	23,736	-57.1		248	3.3	18	23,810	-55.1		346	8.5	12	23,757	-55.3		93	21.8
20	10	26,186	-57.3				9	26,414	-53.6				6	26,306	-54.6				7	26,418	-54.0									

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

TAMPA, FLA (1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	7	16.5	75	13	4.5
1,000--	30	169	18.0	68	23	6.4
950----	30	609	15.5	65	41	7.6
900----	30	1,063	12.6	65	29	5.6
850----	30	1,541	10.7	53	346	4.9
800----	30	2,045	9.0	42	319	6.2
750----	30	2,585	7.2	25	311	7.6
700----	30	3,142	4.9		291	9.9
650----	30	3,751	1.7		280	12.0
600----	30	4,384	- 1.8		278	14.6
550----	30	5,072	- 6.0		278	17.3
500----	30	5,809	-10.9		275	21.6
450----	30	6,620	-16.7		279	24.1
400----	30	7,484	-23.3		283	27.2
350----	30	8,447	-30.7		289	33.6
300----	30	9,524	-38.6		278	39.4
250----	30	10,752	-47.5		282	50.1
200----	29	12,204	-57.1		280	49.7
175----	29	13,039	-62.0		283	45.5
150----	29	13,982	-66.4		281	43.3
125----	29	15,076	-69.2		279	33.6
100----	28	16,398	-71.9		271	23.1
80-----	28	17,715	-69.7		281	12.2
60-----	27	19,452	-63.8		318	2.3
50-----	25	20,575	-61.8		44	2.1
40-----	25	21,963	-59.1		72	1.2
30-----	21	23,782	-56.1		271	8.4
20-----	12	26,369	-53.3			

TATOOSH ISLAND, WASH (1021 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	31	7.9	82	105	6.6
1,000--	30	200	8.0	72	124	6.2
950----	30	627	6.5	67	197	4.1
900----	30	1,065	5.1	64	210	1.1
850----	30	1,530	3.2	60	256	6.8
800----	30	2,020	1.5	57	251	10.1
750----	30	2,538	- .8	47	262	12.6
700----	30	3,085	- 3.7	43	260	14.8
650----	30	3,669	- 7.0	41	262	15.2
600----	30	4,287	-10.4	44	268	21.0
550----	29	4,946	-14.8	49	276	23.3
500----	29	5,661	-19.2	48	275	27.0
450----	29	6,440	-24.3	46	273	30.3
400----	29	7,284	-30.1	47	268	37.1
350----	28	8,220	-36.9		273	34.0
300----	28	9,270	-44.3		268	26.2
250----	28	10,470	-51.9		268	33.0
200----	28	11,894	-57.2		283	41.0
175----	28	12,738	-57.1		280	35.9
150----	28	13,710	-58.1		285	33.4
125----	27	14,862	-60.1		287	31.9
100----	26	16,248	-60.9		285	26.6
80-----	24	17,636	-60.4		288	18.6
60-----	23	19,429	-58.5		288	14.8
50-----	21	20,588	-57.3		300	9.7
40-----	17	22,018	-56.2		305	8.2
30-----	14	23,849	-56.5		292	6.6
20-----						

TOPEKA, KANS. (985 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	270	5.3	66	241	2.9
1,000--	30	155				
950----	30	579	5.9	56	288	7.4
900----	30	1,017	4.1	54	288	12.0
850----	30	1,480	2.2	53	291	14.0
800----	30	1,969	1.0	50	287	16.1
750----	30	2,496	- .6	44	289	18.6
700----	30	3,045	- 2.9	40	288	19.8
650----	30	3,623	- 6.2	39	287	23.5
600----	30	4,241	- 9.8	37	287	27.2
550----	29	4,905	-14.2	35	287	29.7
500----	29	5,620	-18.9		282	32.6
450----	29	6,403	-24.4		280	35.4
400----	29	7,244	-30.6		279	37.1
350----	28	8,174	-37.6		283	38.1
300----	27	9,227	-44.9		286	38.5
250----	27	10,421	-52.1		265	40.8
200----	27	11,848	-56.1		277	47.2
175----	25	12,687	-56.7		283	46.1
150----	25	13,661	-57.3		283	42.0
125----	24	14,812	-59.1		286	36.5
100----	24	16,198	-61.8		287	30.3
80-----	23	17,576	-61.2		294	25.3
60-----	22	19,358	-60.3		302	16.5
50-----	22	20,495	-59.6		311	13.2
40-----	22	21,891	-58.7		313	9.3
30-----	12	23,690	-57.3			
20-----						

TUCSON, ARIZ (929 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	781	15.2	22	[illegible]	1.4
1,000--	30	113				
950----	30	583				
900----	30	1,046	16.5		16	2.5
850----	30	1,529	13.5		47	2.5
800----	30	2,036	10.1	20	152	.6
750----	30	2,572	6.5		74	.8
700----	30	3,131	3.2		349	2.7
650----	30	3,732	- .5		330	7.2
600----	30	4,363	- 4.3		311	10.7
550----	30	5,044	- 8.8		307	15.3
500----	30	5,774	-13.7		292	20.6
450----	30	6,572	-19.8		285	22.5
400----	30	7,428	-26.6		285	25.3
350----	30	8,377	-34.2		283	28.4
300----	30	9,437	-42.2		278	34.2
250----	30	10,646	-50.5		273	37.9
200----	30	12,074	-57.9		270	43.3
175----	30	12,910	-60.4		270	42.0
150----	30	13,865	-62.5		272	37.1
125----	30	14,982	-64.9		276	29.7
100----	30	16,336	-66.8		280	22.7
80-----	29	17,680	-66.6		293	12.0
60-----	27	19,437	-62.9		320	5.2
50-----	25	20,566	-61.5		13	2.5
40-----	24	21,956	-59.7		34	4.1
30-----	21	23,766	-57.0		11	2.5
20-----	6	26,337	-54.4			

VERA CRUZ, MEXICO (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	26	[illegible]	[illegible]	[illegible]		
1,000--	26	[illegible]	[illegible]	75		
950----	26	591	20.1	77		
900----	26	1,056	17.2	77		
850----	26	1,542	14.5	77		
800----	26	2,053	11.9	71		
750----	26	[illegible]	9.7	60		
700----	26	[illegible]	[illegible]	[illegible]		
650----	25	3,781	4.7			
600----	25	4,419	1.2			
550----	25	5,120	- 2.6			
500----	24	5,866	- 6.8			
450----	24	6,697	-12.2			
400----	24	7,572	-18.4			
350----	24	8,554	-25.3			
300----	23	9,656	-33.7			
250----	23	10,908	-43.8			
200----	22	12,364	-56.1			
175----	22	13,200	-62.7			
150----	16	14,140	-69.5			
125----	10	15,219	-73.3			
100----	7	16,505	-77.4			

WASHINGTON, D. C. (1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	88	7.4	66	269	2.1
1,000--	30	160	8.2	60	248	2.3
950----	30	584	6.2	59	268	8.9
900----	30	1,023	3.7	59	267	12.4
850----	30	1,486	2.4	56	264	14.0
800----	30	1,975	.5	52	258	14.0
750----	30	2,500	- 1.2	48	260	17.9
700----	30	3,038	- 3.9	46	254	21.0
650----	30	3,626	- 7.1	44	252	23.3
600----	30	4,240	-10.2	34	254	24.3
550----	30	4,907	-14.1	30	253	30.1
500----	30	5,622	-18.7		252	31.1
450----	30	6,406	-24.2		254	37.9
400----	30	7,248	-29.8		261	34.4
350----	30	8,185	-36.4		265	36.3
300----	30	9,237	-43.8		268	43.5
250----	30	10,438	-51.2		267	43.3
200----	30	11,871	-55.3		274	49.5
175----	30	12,719	-56.8		277	43.7
150----	30	13,691	-58.3		273	41.8
125----	30	14,831	-60.5		273	35.7
100----	30	16,216	-61.7		271	28.7
80-----	30	17,594	-61.9		277	19.6
60-----	27	19,370	-60.2		278	9.9
50-----	27	20,506	-59.8		275	10.9
40-----	25	21,902	-58.6		295	4.5
30-----	23	23,719	-57.5		305	6.8
20-----	10	26,290	-55.8			

WINNEMUCCA, NEV. (877 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,310	1.0	62	156	0.4
1,000--	30	235				
950----	30	661				
900----	30	1,101				
850----	30	1,569	6.8	40	35	1.0
800----	30	2,065	4.2	37	321	4.1
750----	30	2,592	1.6	35	329	6.6
700----	30	3,140	- 1.3	33	332	10.3
650----	30	3,734	- 4.9	30	332	13.2
600----	30	4,352	- 8.4		326	15.5
550----	30	5,027	-12.9	30	327	18.3
500----	30	5,742	-18.0	33	331	22.1
450----	30	6,530	-23.6	35	326	23.3
400----	30	7,370	-29.7	35	328	25.1
350----	30	8,308	-36.8	33	328	26.6
300----	28	9,368	-44.5		329	30.3
250----	28	10,567	-52.2		331	29.7
200----	28	11,992	-57.7		327	29.7
175----	27	12,827	-59.2		323	29.3
150----	27	13,791	-59.8		322	26.4
125----	27	14,926	-61.8		322	27.6
100----	27	16,302	-63.3		326	21.8
80-----	27	17,673	-62.9		325	17.3
60-----	25	19,451	-60.7		343	12.0
50-----	24	20,586	-59.3		14	10.3
40-----	23	21,989	-58.1		18	9.7
30-----	21	23,802	-56.3		32	9.7
20-----	12	26,366	-54.7		348	8.9

YAKUTAT, ALASKA (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	29	12	1.8	94	136	3.1
1,000--	29	62			142	7.6
950----	29	479	.9	83	152	9.7
900----	29	909	1.5	83	179	10.1
850----	29	1,362	- 3.8	79	181	10.9
800----	29	1,839	- 6.4	76	189	13.4
750----	29	2,347	- 9.1	72	198	15.9
700----	29	2,872	-12.2	63	211	18.6
650----	29	3,441	-15.8	62	219	21.2
600----	28	4,027	-19.4	57	226	25.3
550----	28	4,675	-23.2	54	237	30.3
500----	28	5,361	-27.2	53	240	36.5
450----	28	6,120	-32.1	53	246	46.8
400----	28	6,934	-37.6		235	44.9
350----	28	7,843	-43.7		233	43.5
300----	28	8,865	-49.1			
250----	28	10,047	-53.2			
200----	28	11,479	-53.3			
175----	27	12,324	-52.1			
150----	27	13,322	-52.5			
125----	26	14,499	-53.7			
100----	22	15,923	-54.0			
80-----	19	17,343	-52.9			
60-----	17	19,180	-54.8			
50-----	15	20,343	-54.7			
40-----	11	21,807	-54.1			
30-----	7	23,667	-54.6			
20-----						

* DENVER, COLO. (835 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,661	22.4	43	70	2.3
1,000--	31	59				
950----	31	524				
900----	31	1,006				
850----	31	1,509				
800----	31	2,037	21.1	40	108	3.3
750----	31	2,596	17.1	42	122	2.3
700----	31	3,176	12.4	50	140	1.2
650----	31	3,796	7.2	59	227	1.7
600----	31	4,446	2.1	67	283	4.7
550----	31	5,144	- 3.2	72	283	10.7
500----	31	5,889	- 8.6	70	286	15.5
450----	31	6,705	-13.9	57	286	16.1
400----	31	7,583	-20.1	50	285	15.9
350----	31	8,557	-27.5	44	280	20.6
300----	31	9,646	-35.7		276	22.0
250----	31	10,887	-45.7		277	24.3
200----	31	12,337	-55.8		274	25.8
175----	31	13,177	-60.1		276	26.2
150----	31	14,129	-64.0		272	24.1
125----	31	15,239	-65.9		284	18.6
100----	30	16,596	-65.1		305	9.7
80-----	26	17,965	-62.7		41	2.5
60-----	22	19,752	-59.0		70	10.9
50-----	21	20,901	-56.8		88	13.2
40-----	20	22,317	-54.2		83	16.9
30-----	19	24,174	-51.8		86	22.0
20-----	18	26,817	-48.5		91	25.4
15-----	#16	28,724	-45.9		88	30.1

* OGDEN, UTAH (855 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	1,450	26.5	26	60	2.1
1,000--	30	38				
950----	30	510				
900----	30	994				
850----	30	1,497	26.8	24	59	1.9
800----	30	2,029	23.0	25	56	1.6
750----	30	2,593	18.1	29	295	1.4
700----	30	3,171	13.0	35	259	4.3
650----	30	3,794	7.6	42	257	8.0
600----	30	4,440	2.0	48	247	9.7
550----	30	5,136	- 3.7	46	252	12.8
500----	30	5,880	- 9.3	44	251	13.4
450----	30	6,697	-15.0	40	252	16.1
400----	30	7,565	-21.2		250	17.5
350----	30	8,535	-28.6		249	20.4
300----	30	9,620	-37.0		247	24.5
250----	30	10,856	-46.0		249	30.9
200----	30	12,309	-55.3		249	34.8
175----	30	13,154	-58.1		255	32.1
150----	30	14,119	-61.1		256	24.7
125----	30	15,244	-63.2		259	15.2
100----	30	16,615	-63.0		273	6.0
80-----	30	17,995	-60.4		68	3.3
60-----	29	19,805	-56.6		88	9.9
50-----	29	20,965	-55.1		91	12.6
40-----	26	22,402	-52.4		91	16.5
30-----	24	24,277	-49.5		93	18.5
20-----	14	26,948	-45.8		94	23.5
15-----	9	28,890	-43.1			

* RANTOUL, ILL. (988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	227	21.1	73	255	0.4
1,000--	30	118				
950----	30	574	21.8	68	265	5.1
900----	30	1,035	19.1	68	272	7.8
850----	30	1,524	16.2	62	283	10.1
800----	30	2,037	13.1	59	292	12.8
750----	30	2,585	9.8	56	300	13.8
700----	30	3,147	6.2	54	303	16.1
650----	30	3,757	2.6	49	300	16.5
600----	30	4,395	- 1.0	41	306	18.3
550----	30	5,089	- 4.9	34	302	21.0
500----	30	5,827	- 9.4		304	24.1
450----	30	6,644	-14.6		300	25.3
400----	30	7,515	-20.9		295	27.8
350----	30	8,487	-28.3		290	28.7
300----	30	9,573	-36.5		295	35.9
250----	30	10,811	-45.4		279	42.3
200----	30	12,267	-54.4		276	44.7
175----	30	13,115	-57.9		278	43.3
150----	30	14,080	-61.0		281	36.3
125----	30	15,204	-63.7		286	27.0
100----	30	16,573	-63.1		295	18.5
80-----	29	17,951	-60.7		307	10.3
60-----	28	19,754	-56.9		11	3.9
50-----	26	20,916	-55.0		60	7.0
40-----	25	22,348	-52.8		74	11.7
30-----	24	24,214	-50.6		82	15.3
20-----	23	26,870	-47.6		85	19.4
15-----	%18	28,777	-45.0		91	23.9

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

10 mb, 11 obs., 21,444 m., -41.7°C., 92 dir., 33.8 speed
7 mb, 5 obs., 23,830 m., -40.4°C.

% 10 mb, 9 obs., 21,495 m., -42.6°C.

* Air Force data for July 1956. August data will be included in the December issue of this publication.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. NOVEMBER 1956

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
TABLE MOUNTAIN, CALIF.									
	Air mass								
	5.0	4.0	3.0	2.0	*0.75	2.0	3.0	4.0	5.0
Nov.									
2	----	----	---	H1.47	----	----	----	----	----
3	----	----	----	H1.49	----	----	----	----	----
4	----	----	----	H1.48	----	----	----	----	----
5	1.15	1.24	1.34	H1.47	----	----	----	----	----
6	----	----	----	H1.49	----	----	----	----	----
8	----	----	----	H1.47	----	----	----	----	----
9	----	----	----	H1.51	----	----	----	----	----
10	----	----	----	H1.52	----	----	----	----	----
11	----	----	----	H1.52	----	----	----	----	----
13	----	----	----	H1.49	----	---	----	----	----
16	----	----	----	H1.49	----	----	----	----	----
21	----	----	----	H1.55	----	----	----	----	----
22	----	----	----	H1.55	----	----	----	----	----
23	----	----	----	H1.55	----	----	----	----	----
24	----	----	----	H1.54	----	----	----	----	----
25	1.22	1.32	1.42	H1.55	---	----	----	----	----
28	----	----	----	H1.53	----	----	----	----	----
29	----	----	----	H1.49	----	----	----	----	----
30	1.16	1.26	1.37	H1.51	----	----	----	----	----
Averages	1.18	1.27	1.38	1.51	----	----	----	----	----
BLUE HILL, MASS.									
	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
Nov.									
4	----	----	1.05	1.14	1.16	----	0.94	0.75	0.64
5	0.96	1.02	1.13	1.25	----	----	.95	.82	.73
6	.79	.88	.99	----	----	----	----	----	----
7	.76	.93	1.00	----	----	----	----	----	----
9	----	.97	1.10	1.26	----	----	1.08	.95	.86
10	----	----	----	----	----	----	1.18	1.06	.99
11	1.02	1.11	1.22	1.28	1.30	1.30	----	----	----
14	.71	.86	----	----	----	----	----	----	----
15	----	----	----	----	----	----	.99	.85	.75
19	----	----	1.13	----	1.20	----	1.13	1.05	.98
28	----	.96	----	----	----	----	----	----	----
Averages	.85	.96	1.09	1.23	1.22	(1.30)	1.05	.91	.83

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
MADISON, WIS.									
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Nov.									
22	----	----	----	----	----	----	SH1.24	SH1.12	SH1.00
23	1.04	SH1.13	SH1.27	----	SH1.39	Ci	----	----	----
WASHINGTON, D. C. (WBCO)									
	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Nov.									
6	SK0.71	SK0.79	----	----	SK1.13	----	0.69	0.57	----
14	----	S .95	S1.10	S1.30	----	S1.18	S1.00	.88	0.76
15	S .84	S .95	S1.11	S1.28	S1.34	S1.30	S1.09	S .94	S .75
22	S .94	S1.03	----	----	----	----	----	----	----
23	S .86	.93	----	----	----	----	----	----	----
27	----	----	SK .91	----	----	----	----	----	----
Averages	.84	.93	1.04	1.29	1.24	1.24	.93	.80	.76
ALBUQUERQUE, N. MEX.									
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
	Recorder Inoperative during November 1956								

* Extrapolated
H Haze
SH Slight Haze
SK Slight Smoke
S Slight Haze, indeterminable

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75, No. 3, March 1947, p. 47.

SOLAR RADIATION DATA

Table 31a Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing north at Blue Hill, Mass. during the month

Discontinued September 2, 1956

Table 31b Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing east at Blue Hill, Mass. during the month

Discontinued September 2, 1956

Table 31c Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-----------	5	6	7	8	9	10	11		12	13	14	15	16	17	18		19	20	21	22	23	24	25	
Langleys-------	525	480	387	88	533	564	494	439	207	375	232	462	118	37	21	207	523	356	25	496	199	516	360	354
Date-----------	26	27	28	29	30	1	2																	
Langleys-------	15	368	504	56	58	346	436	255																

Table 31d Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing west at Blue Hill, Mass. during the month

Discontinued September 2, 1956

Table 31e Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-----------	5	6	7	8	9	10	11		12	13	14	15	16	17	18		19	20	21	22	23	24	25	
Langleys-------	48	60	77	107	48	54	50	64	107	75	101	52	111	61	38	78	41	77	49	52	94	58	66	63
Date-----------	26	27	28	29	30	1	2																	
Langleys-------	33	83	52	82	76	92	63	68																

Note: Langley is the unit used to denote one gram calorie per square centimeter

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month

Date.	1	2	3	4	5	6	7	8	[illegible]	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	*43	*156	*14	*50	124	109	128	*-26	*97	56	93	56	67	100	118	137	*1	86	64	94	50	46	79	58	73	10	3	16	*52	146		71

* Estimated values owing to occurrence of rain during period. While rain is falling, radiation is assumed to be zero.

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of alfalfa. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh. The instrument with which they were measured has not been checked by the Weather Bureau.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. NOVEMBER 1956

1956	Aklavik, MacKenzie	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass	Boise, Idaho	Boston, Mass.	Brownsville, Tex.	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Dodge City, Kans.	E. Lansing, Mich.	E. Wareham, Mass.	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Fort Worth, Tex.	Fresno, Calif.	Gainesville, Fla.	Glasgow, Mont.	Grand Junction, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Ithaca, N. Y.	Lake Charles, La.
Nov. 5------	10	415	99	445	64	112	7	118	22	298	277	282	277	654	180	388	---	82	263	155	292	23	442	360	(23)	373	330	420	---	163	113	319	125	388	149	438	275	---
Nov. 6------	9	395	57	441	96	362	7	112	117	262	211	247	353	620	227	334	---	278	352	92	274	101	438	351	96	(270)	320	390	---	298	37	315	416	369	164	409	288	---
Nov. 7------	37	406	51	344	132	290	7	135	266	238	227	248	211	658	198	376	---	297	92	211	145	84	429	342	86	401	295	394	---	311	267	222	377	409	249	422	122	---
Nov. 8------	17	389	62	285	150	391	7	123	272	117	267	119	433	609	176	78	---	108	409	97	143	57	415	338	41	432	307	249	---	328	231	75	419	156	113	428	149	---
Nov. 9------	7	399	77	477	51	437	5	101	---	294	263	129	---	629	76	336	---	297	376	262	282	64	426	338	18	434	310	419	---	329	125	279	449	90	299	426	103	---
Nov. 10------	11	400	59	466	41	423	5	110	205	303	222	290	---	646	166	410	---	296	(369)	275	229	29	421	339	42	403	302	448	187	322	164	255	441	387	227	426	139	---
Nov. 11------	10	400	2	429	158	407	3	92	192	283	262	261	---	689	236	387	---	307	359	153	281	144	---	331	13	407	310	424	51	321	193	306	424	396	285	428	89	---
Average-------	14	400	58	412	99	346	6	113	179	256	247	225	319	644	180	330	---	238	(317)	178	235	72	429	343	(46)	(389)	311	392	---	296	161	253	379	313	212	425	166	---
Nov. 12------	4	399	107	238	30	359	3	18	188	177	260	149	---	(675)	30	379	---	305	365	142	199	58	419	331	28	(394)	281	350	151	317	160	246	406	391	297	423	107	---
Nov. 13------	7	379	36	424	113	408	3	90	80	256	115	205	---	674	155	391	---	286	343	206	274	111	215	323	54	360	256	429	60	315	89	315	426	384	283	411	140	---
Nov. 14------	13	365	8	415	43	381	2	85	83	186	238	150	---	687	87	365	---	74	345	144	225	132	401	348	36	327	292	419	174	174	221	303	405	388	214	419	208	---
Nov. 15------	4	397	60	415	47	342	2	97	225	239	146	220	---	475	43	(208)	---	51	361	95	228	98	426	313	14	353	292	391	206	320	151	287	379	386	24	416	223	---
Nov. 16------	5	387	3	378	23	95	2	97	137	138	205	172	---	693	27	295	---	304	335	60	204	115	400	264	46	412	262	431	193	211	231	---	100	336	265	401	61	---
Nov. 17------	3	380	112	363	83	119	2	7	96	71	217	75	---	693	198	268	275	258	343	153	62	117	422	287	58	407	260	361	142	263	213	24	100	220	207	382	207	---
Nov. 18------	6	360	22	372	70	396	1	15	99	43	212	53	---	707	38	327	247	269	326	222	52	62	403	302	7	390	252	350	100	241	137	300	420	350	268	388	66	---
Average-------	6	381	50	372	58	300	2	58	130	159	199	146	---	(658)	83	(319)	---	221	346	146	178	99	384	310	35	(378)	271	390	146	263	172	246	319	350	223	406	145	---
Nov. 19------	1	347	12	400	162	392	*	8	164	263	290	233	---	598	210	371	271	234	323	213	249	111	376	232	8	154	266	385	164	141	235	277	417	370	220	---	256	---
Nov. 20------	9	357	9	289	152	266	---	8	150	207	234	191	---	(616)	134	302	42	27	104	26	218	106	407	315	10	56	273	331	161	268	204	267	339	343	23	---	53	---
Nov. 21------	1	363	30	293	147	87	---	28	138	59	235	56	---	545	21	307	24	66	303	26	89	48	420	297	4	385	273	314	52	299	162	142	118	323	26	377	35	---
Nov. 22------	0	359	89	429	159	400	---	26	60	254	232	227	---	446	118	379	104	300	332	175	243	100	366	303	11	378	273	401	178	288	206	260	421	360	123	377	91	---
Nov. 23------	0	314	12	436	165	384	---	52	135	147	236	118	---	215	59	371	268	157	299	288	214	105	164	295	---	321	272	429	183	282	205	214	406	382	242	368	170	---
Nov. 24------	0	348	112	387	156	366	---	23	209	247	221	228	---	517	195	332	290	269	329	223	247	95	238	295	17	380	259	388	161	282	206	89	393	192	267	---	225	420
Nov. 25------	1	352	56	383	162	343	---	20	185	207	223	177	---	602	230	347	72	49	281	102	216	100	389	296	10	377	248	384	181	282	206	111	382	324	79	362	108	412
Average-------	2	349	46	374	158	320	---	24	149	198	239	176	---	(506)	138	344	153	157	281	150	211	95	337	291	10	293	266	376	154	263	203	194	354	328	140	371	134	---
Nov. 26------	0	351	40	399	81	190	---	14	205	42	223	17	---	---	47	277	40	241	324	124	81	103	373	291	5	380	248	344	201	281	192	238	185	133	47	---	94	406
Nov. 27------	0	354	33	407	75	219	---	22	140	200	244	185	---	635	82	253	146	273	307	164	95	99	363	291	8	(381)	229	384	153	274	170	248	277	255	146	---	87	404
Nov. 28------	0	345	61	338	152	367	---	62	185	235	71	215	---	673	115	355	189	54	249	56	221	92	329	285	9	272	258	391	147	273	181	283	391	348	154	350	187	356
Nov. 29------	---	332	103	189	155	112	---	48	115	87	59	75	---	675	56	255	188	120	285	208	118	96	360	283	5	380	250	273	169	---	197	196	117	298	256	355	97	373
Nov. 30------	---	341	0	406	145	370	---	12	184	89	45	75	---	619	81	343	147	233	311	113	59	95	362	282	6	356	254	332	138	263	184	246	393	(119)	213	351	184	389
Dec. 1------	---	346	12	364	144	362	---	48	167	191	169	81	---	539	150	347	40	263	308	83	---	17	373	283	18	358	241	389	137	255	180	259	389	322	65	351	137	381
Dec. 2------	---	326	19	361	92	364	---	62	138	223	52	91	---	609	148	349	65	246	311	67	209	23	366	273	5	350	252	287	90	253	47	212	391	331	146	352	146	373
Average-------	---	342	38	352	120	284	---	38	162	153	123	106	---	625	97	311	116	204	299	116	131	75	361	284	8	(354)	248	343	148	267	165	240	306	(258)	147	352	133	383

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

* Sun below horizon from the 19th.

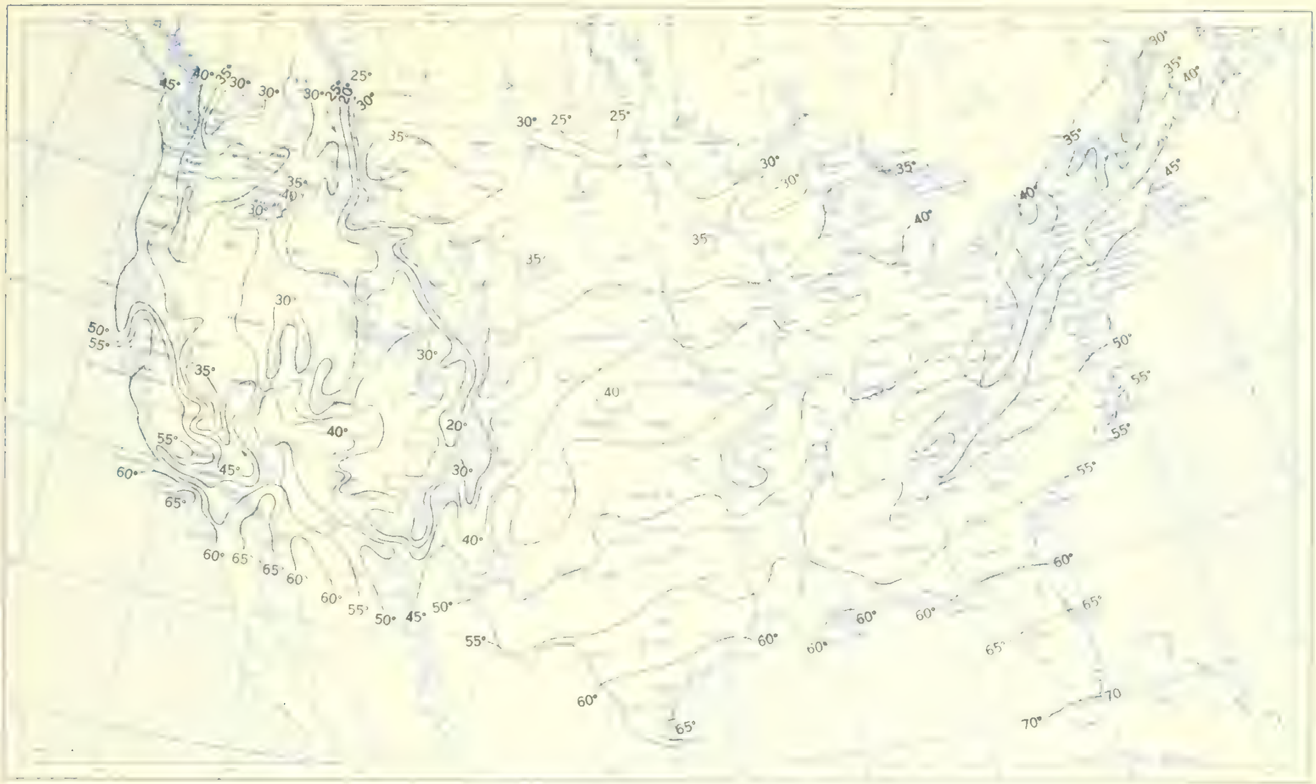
Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued

	Lander, Wyo.	Las Vegas, Nev.	Lemont, Ill.	Little Rock, Ark.	Los Angeles, Calif.	Los Angeles, Calif. (urban)	Madison, Wis.	Matanuska, Alaska	Medford, Oreg.	Miami, Fla	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Prosser 4 NE, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle-Tacoma, Wash.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
1956																																						
Nov. 5-------	101	385	193	45	379	368	88	46	44	369	271	267	314	310	247	249	400	287	126	314	405	45	192	396	106	365	232	309	55	55	316	440	249	460	319	340	259	13
Nov. 6-------	207	380	211	295	387	381	68	113	68	455	359	89	295	239	273	85	397	277	122	172	414	93	232	390	70	341	218	281	(52)	97	313	396	251	451	297	382	317	48
Nov. 7-------	229	363	247	292	380	373	83	122	---	251	338	117	145	236	272	93	389	258	104	295	415	117	263	384	---	313	166	270	142	89	182	397	202	443	243	207	292	109
Nov. 8-------	226	367	137	216	372	373	102	21	95	455	353	---	127	38	398	134	382	93	72	235	405	275	437	376	---	71	71	58	---	136	168	356	174	441	---	126	121	190
Nov. 9-------	269	366	273	306	380	372	125	18	55	440	355	310	288	251	368	79	384	227	41	281	403	177	460	380	---	209	152	172	195	129	124	406	161	439	195	---	191	(108)
Nov. 10-------	89	365	212	288	372	358	120	29	72	459	398	304	314	251	365	248	382	285	99	293	401	203	448	377	---	305	226	156	26	54	291	470	249	440	297	---	85	153
Nov. 11-------	211	366	286	295	328	360	144	---	103	443	398	291	267	130	367	53	380	254	118	224	394	255	410	377	---	153	137	215	65	52	204	457	54	429	179	485	279	66
Average--------	190	370	223	248	371	369	105	58	73	410	353	230	250	208	327	134	388	240	97	259	405	166	349	383	---	251	172	209	(89)	87	228	417	191	444	255	308	221	(98)
Nov. 12-------	253	366	278	286	327	323	222	---	90	437	387	263	220	157	367	139	269	143	183	281	302	232	396	289	---	203	57	239	32	86	152	443	96	396	198	494	181	140
Nov. 13-------	232	353	256	272	220	224	209	106	146	447	251	290	246	217	344	159	362	233	234	281	231	217	414	277	---	250	149	212	(156)	295	195	422	99	374	219	477	275	186
Nov. 14-------	---	368	166	174	333	322	55	52	150	456	303	229	230	212	316	196	318	178	228	121	388	162	374	375	---	248	165	251	58	209	214	424	179	395	(185)	419	301	54
Nov. 15-------	312	361	35	89	359	355	48	(81)	92	366	382	70	260	238	350	42	385	195	93	226	381	58	224	378	---	302	177	---	29	47	273	427	60	414	280	419	300	92
Nov. 16-------	286	343	278	285	360	349	221	---	135	398	388	300	224	130	373	50	362	136	70	187	398	267	316	359	---	197	26	174	27	96	88	408	130	398	209	499	86	130
Nov. 17-------	227	308	142	289	352	357	121	89	190	431	393	288	47	27	353	178	359	198	231	160	380	226	409	342	---	34	168	33	108	204	162	400	113	405	50	528	27	137
Nov. 18-------	197	333	164	286	329	334	62	2	223	374	368	285	61	119	348	233	331	64	64	254	370	206	400	346	---	135	35	270	(59)	152	286	404	178	380	58	486	282	135
Average--------	251	347	188	240	326	323	134	(66)	147	415	353	246	184	157	350	143	341	164	158	216	350	196	362	338	---	196	111	197	(67)	156	196	418	122	394	(171)	474	207	132
Nov. 19-------	223	354	230	21	307	310	128	16	249	265	370	268	271	183	298	209	345	184	215	147	328	72	110	358	---	303	158	273	175	---	265	401	199	381	286	535	284	90
Nov. 20-------	282	354	25	77	298	301	8	11	234	327	222	151	236	164	127	88	372	167	203	295	329	70	345	350	---	226	144	209	179	144	75	396	58	408	223	199	168	114
Nov. 21-------	276	338	89	253	332	341	136	18	227	383	386	55	101	83	337	---	380	35	204	214	348	157	366	357	35	101	38	142	167	167	62	400	21	408	107	483	127	133
Nov. 22-------	321	329	222	295	348	342	219	18	227	389	385	166	218	200	337	---	342	182	187	215	356	205	328	351	86	241	147	217	57	185	117	412	183	308	250	369	229	114
Nov. 23-------	264	338	224	266	---	325	213	36	225	452	283	162	208	175	324	171	178	208	190	(250)	321	210	312	340	---	177	155	152	168	180	200	451	212	170	177	144	200	(106)
Nov. 24-------	268	335	192	238	316	329	34	25	218	410	248	249	257	220	338	216	330	237	53	239	359	192	387	338	41	263	199	221	(164)	197	210	406	202	277	256	477	183	101
Nov. 25-------	268	332	68	241	330	339	41	25	209	416	368	142	196	67	336	182	345	197	32	246	367	85	406	339	46	83	160	121	65	202	122	408	99	367	135	481	87	117
Average--------	272	340	150	199	322	327	111	21	227	378	323	171	212	156	300	173	327	173	155	(230)	344	142	322	348	52	199	143	191	(139)	179	150	411	139	331	205	470	183	(111)
Nov. 26-------	273	322	204	165	304	314	(194)	---	202	182	366	44	61	98	331	36	340	20	43	249	350	126	412	219	137	100	30	174	42	30	155	244	87	372	110	504	72	146
Nov. 27-------	269	255	260	264	205	217	186	8	101	431	343	139	169	192	338	99	323	137	22	169	216	192	400	309	(111)	207	133	191	149	153	95	302	110	353	223	433	195	71
Nov. 28-------	203	328	79	182	285	305	43	21	82	439	184	209	246	195	---	84	326	344	27	235	362	162	370	319	64	183	141	250	160	70	225	398	26	360	233	499	268	128
Nov. 29-------	257	323	206	266	304	306	77	4	98	430	345	116	112	85	---	50	325	78	17	231	349	117	405	319	(154)	90	53	181	(105)	25	126	349	184	357	141	479	144	84
Nov. 30-------	244	318	130	251	303	306	66	50	47	332	336	254	68	156	---	209	321	106	30	226	350	155	369	316	101	71	137	189	141	19	112	249	99	367	127	110	226	75
Dec. 1-------	249	316	142	247	287	299	53	28	42	436	344	227	223	133	---	80	324	212	26	228	343	119	383	315	64	116	124	144	58	35	120	400	95	352	187	500	151	75
Dec. 2-------	221	315	107	258	280	296	53	40	49	432	333	212	226	144	---	219	320	188	52	119	337	138	361	319	60	117	61	144	---	32	58	343	29	360	183	492	81	62
Average--------	245	311	161	233	281	292	(96)	25	89	383	322	172	158	143	---	112	325	155	31	208	330	144	386	302	(99)	126	97	182	(109)	52	127	326	90	360	172	474	162	92

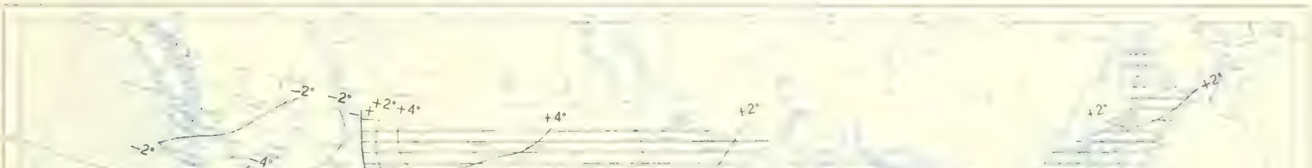
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

NWRC, Asheville N.C. --- 2 7 57 --- 1900

Chart I. A. Average Temperature (°F.) at Surface, November 1956.

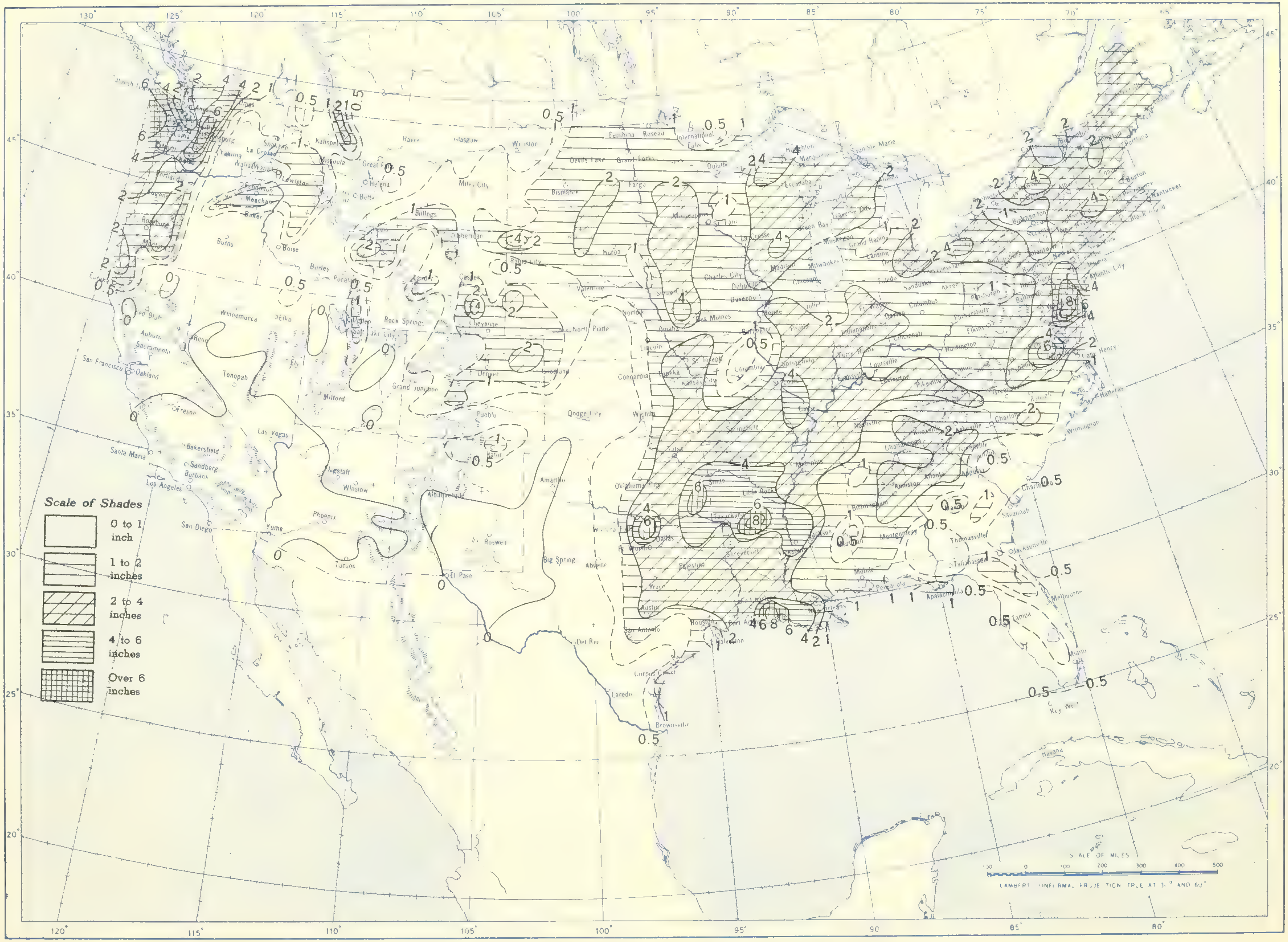


B. Departure of Average Temperature from Normal (°F.), November 1956.



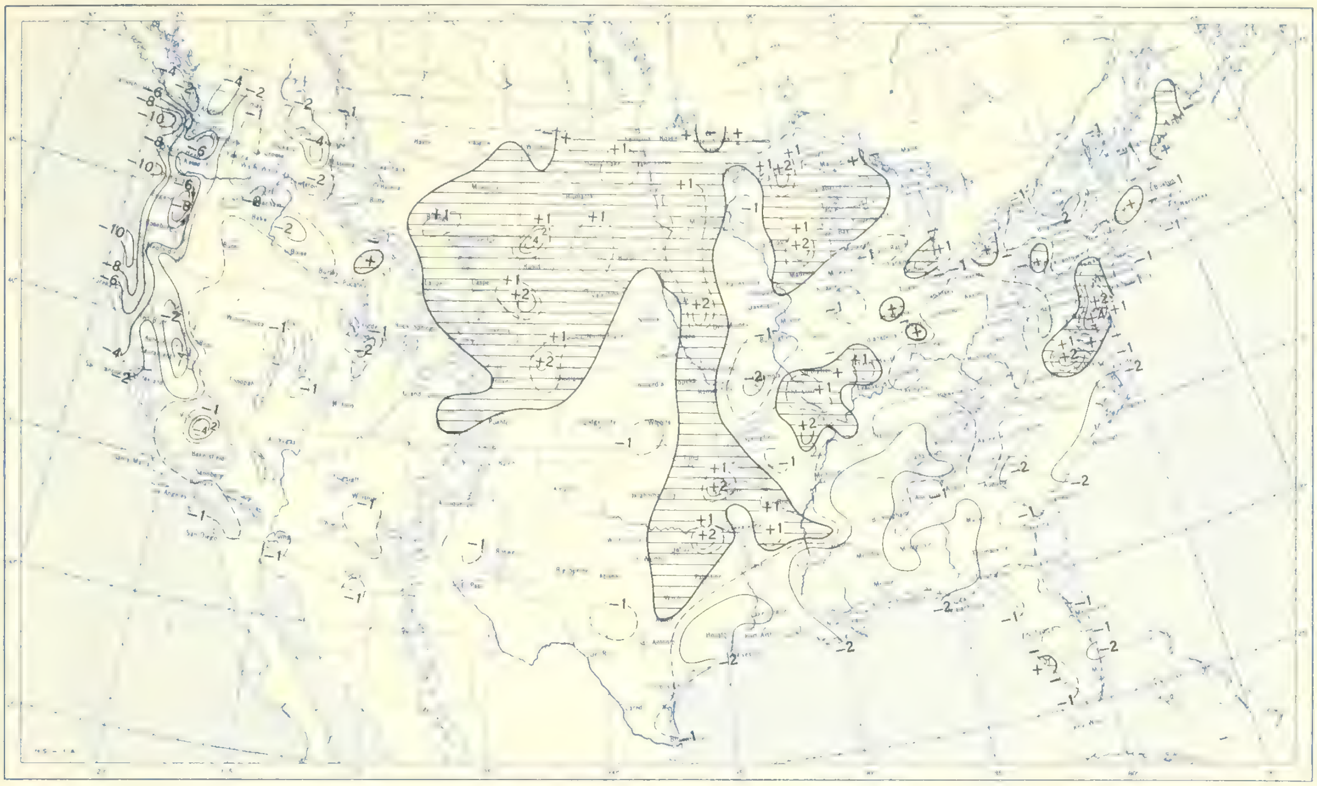
A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), November 1956.

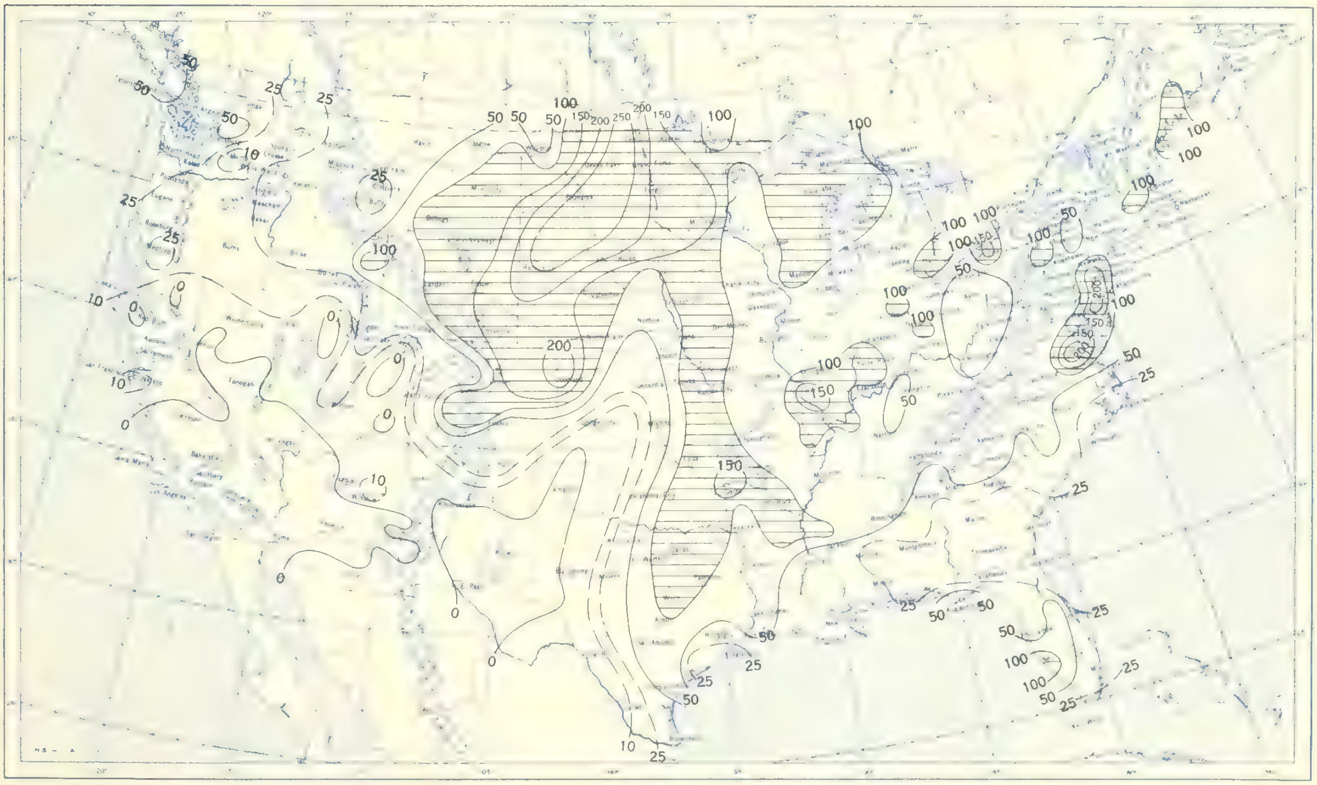


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), November 1956.

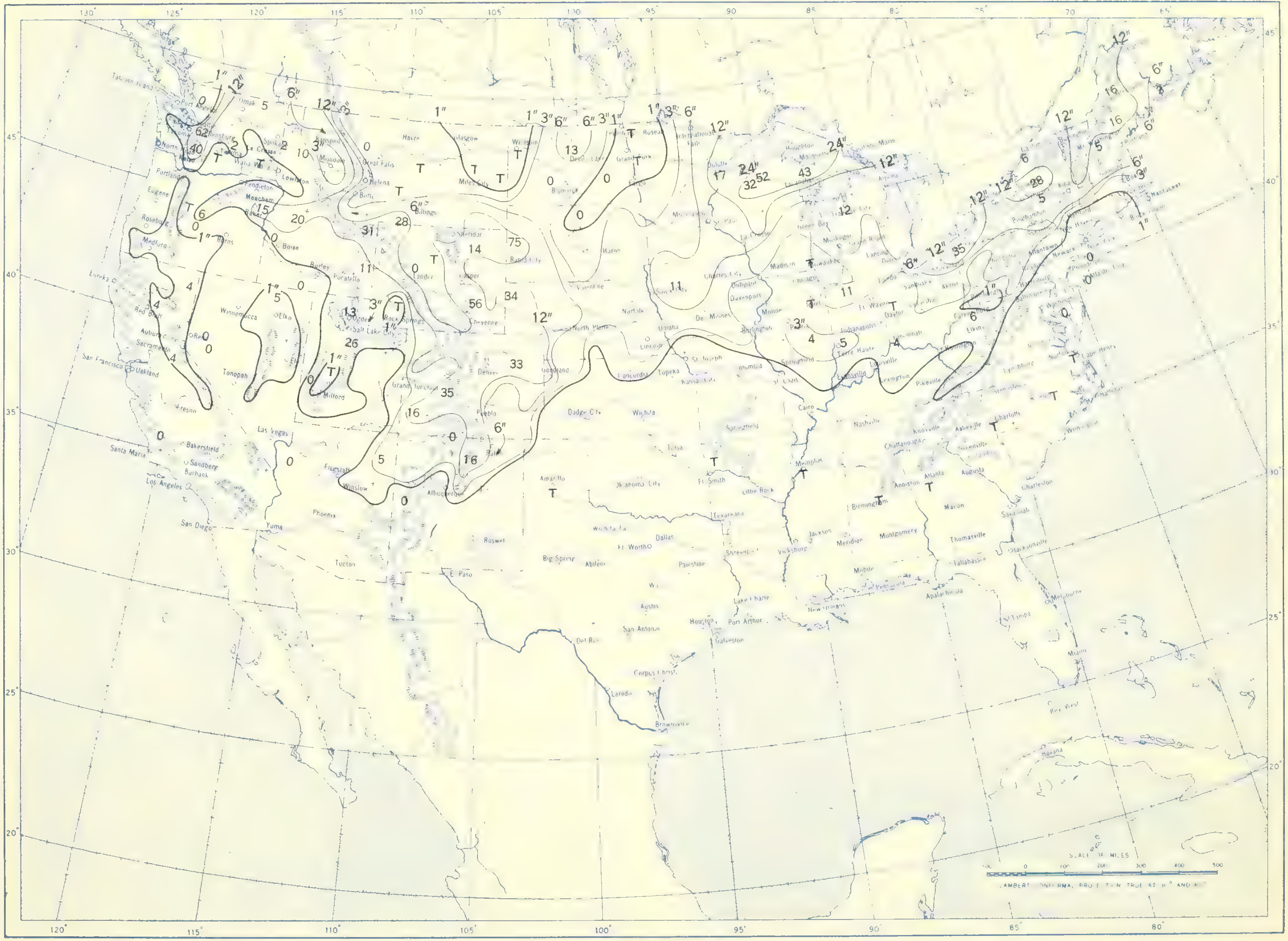


B. Percentage of Normal Precipitation, November 1956.



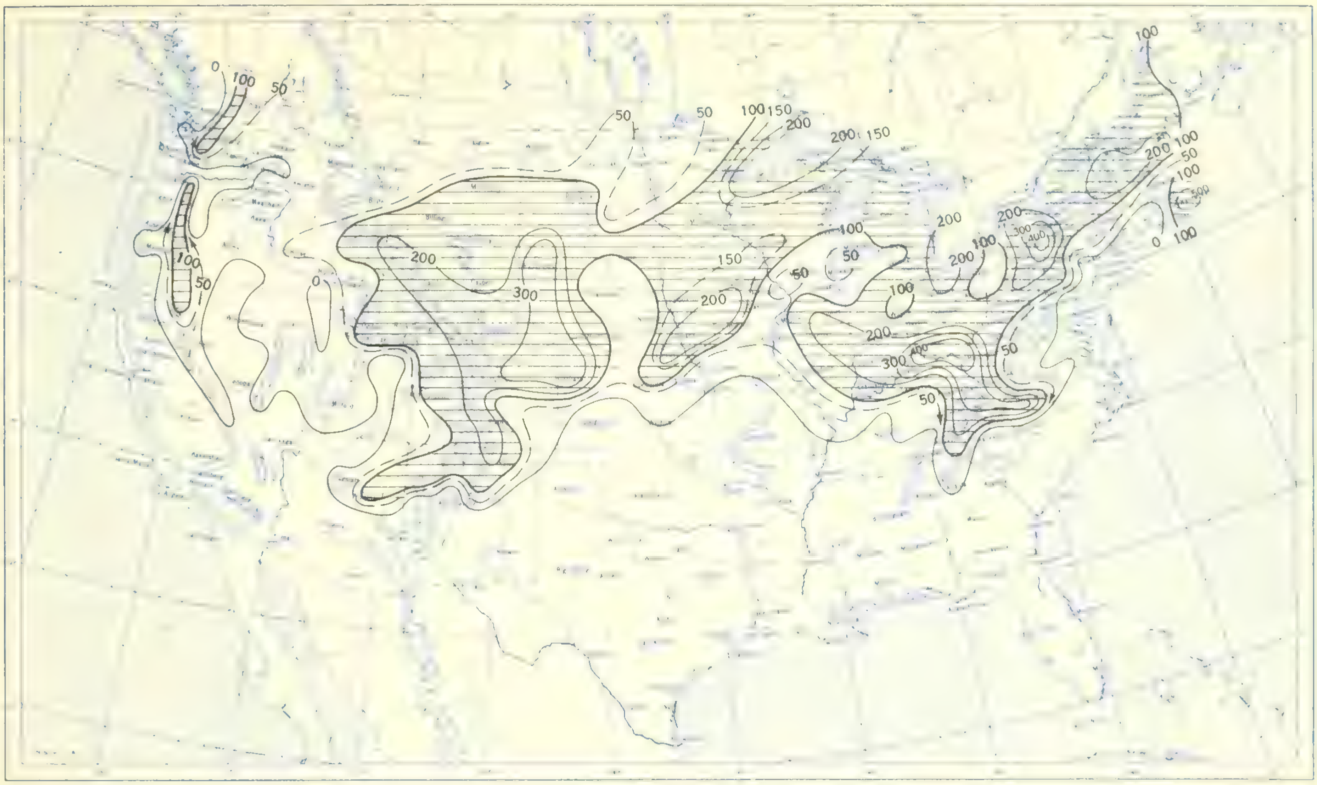
Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart IV. Total Snowfall (Inches), November 1956.

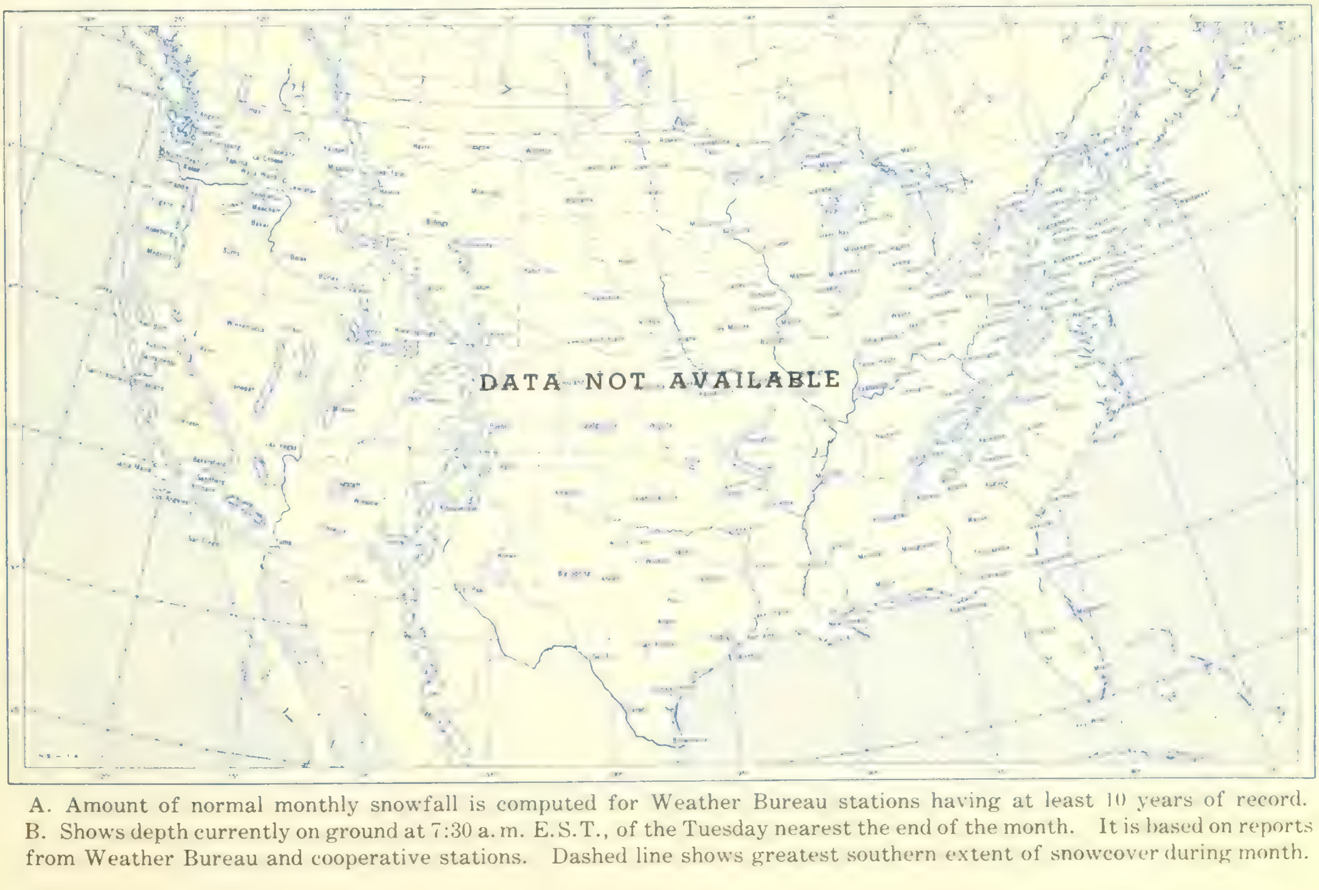


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Normal Snowfall, November 1956.

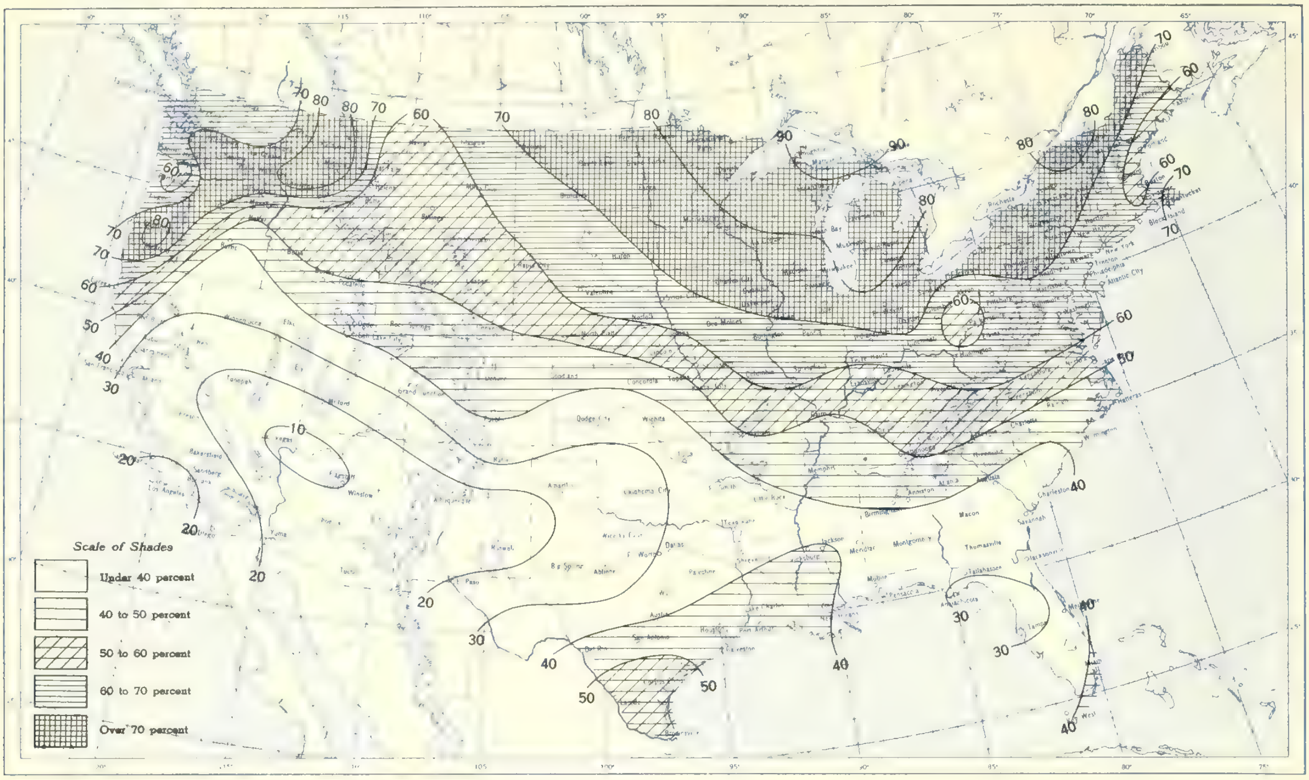


B. Depth of Snow on Ground (Inches).

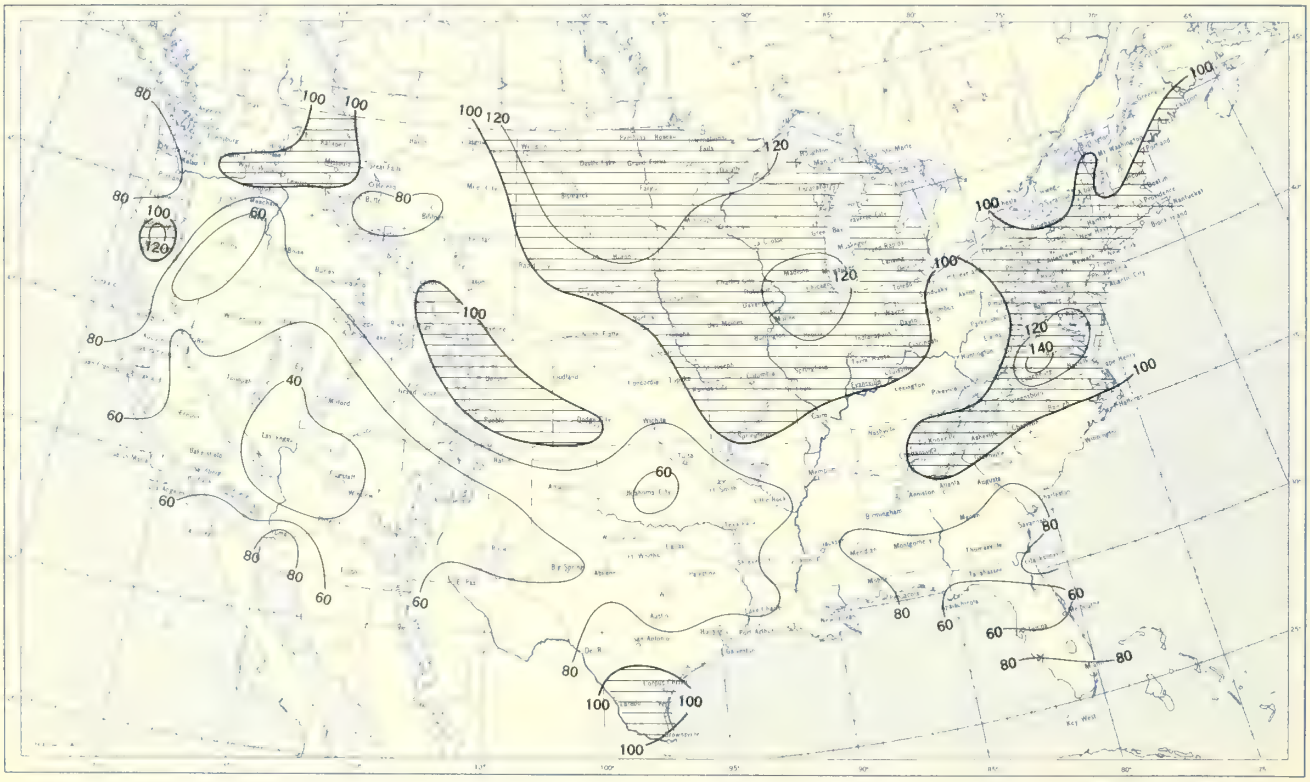


A. Amount of normal monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:30 a. m. E.S.T., of the Tuesday nearest the end of the month. It is based on reports from Weather Bureau and cooperative stations. Dashed line shows greatest southern extent of snowcover during month.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, November 1956.

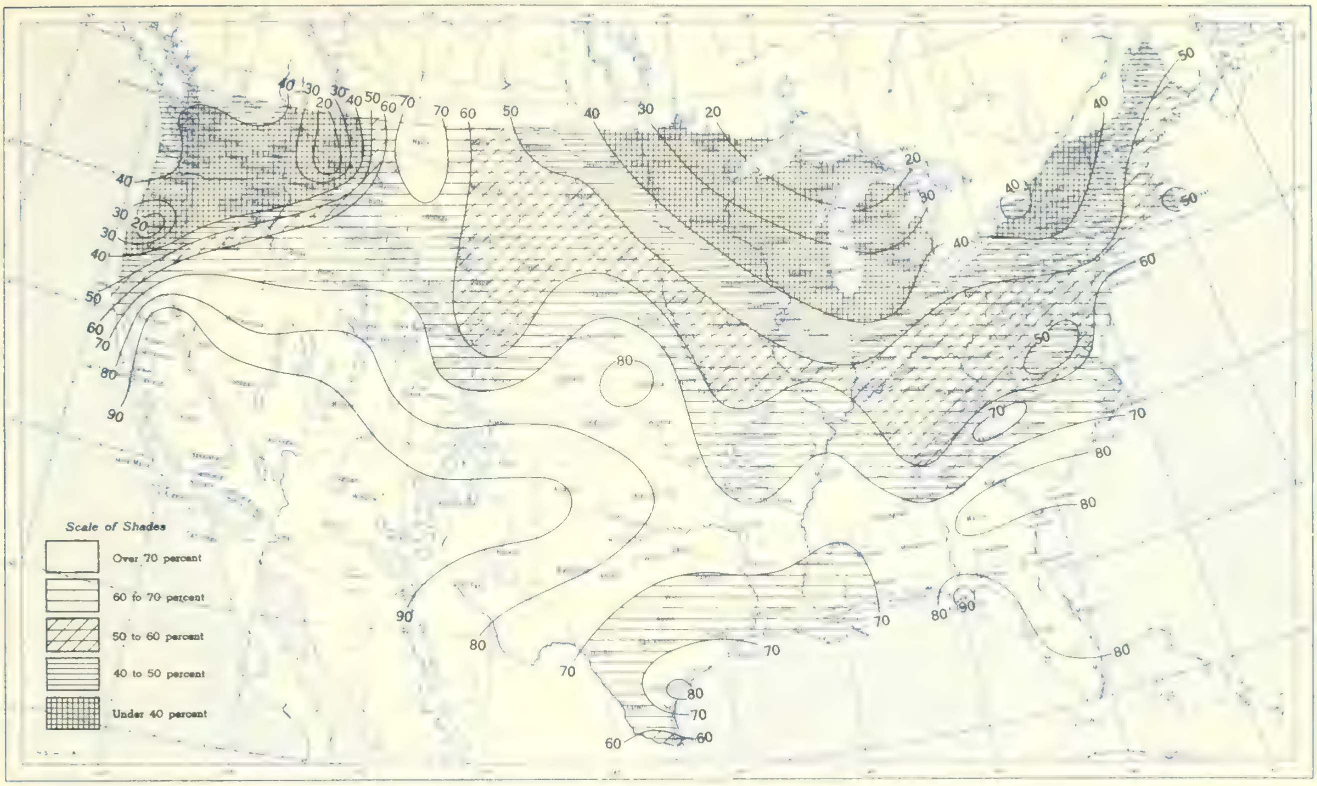


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, November 1956.

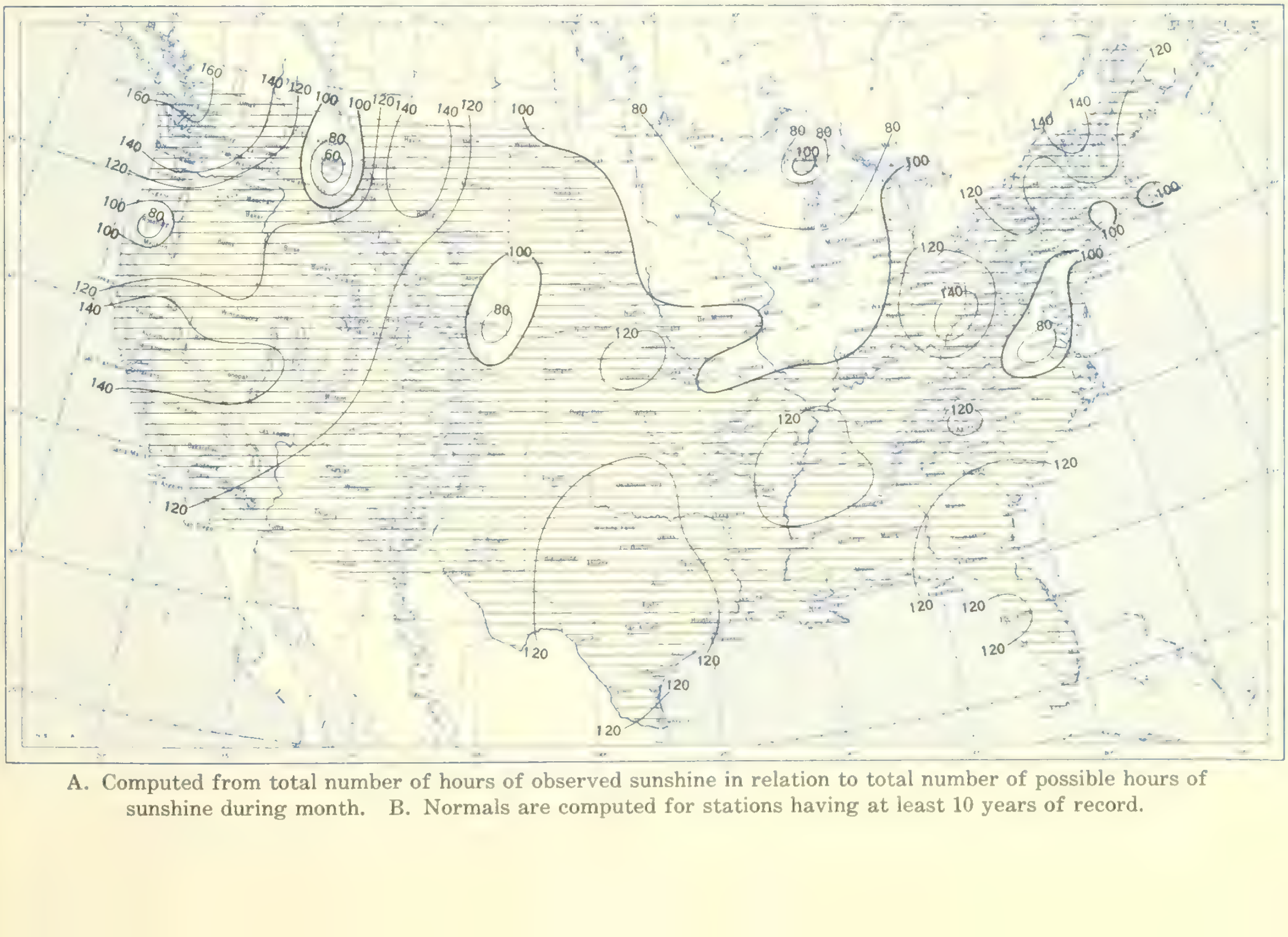


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, November 1956.



B. Percentage of Normal Sunshine, November 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

Chart VIII. Average Daily Values of Solar Radiation, Direct + Diffuse, November 1956. Inset: Percentage of Mean Daily Solar Radiation, November 1956. (Mean based on period 1951-55.)

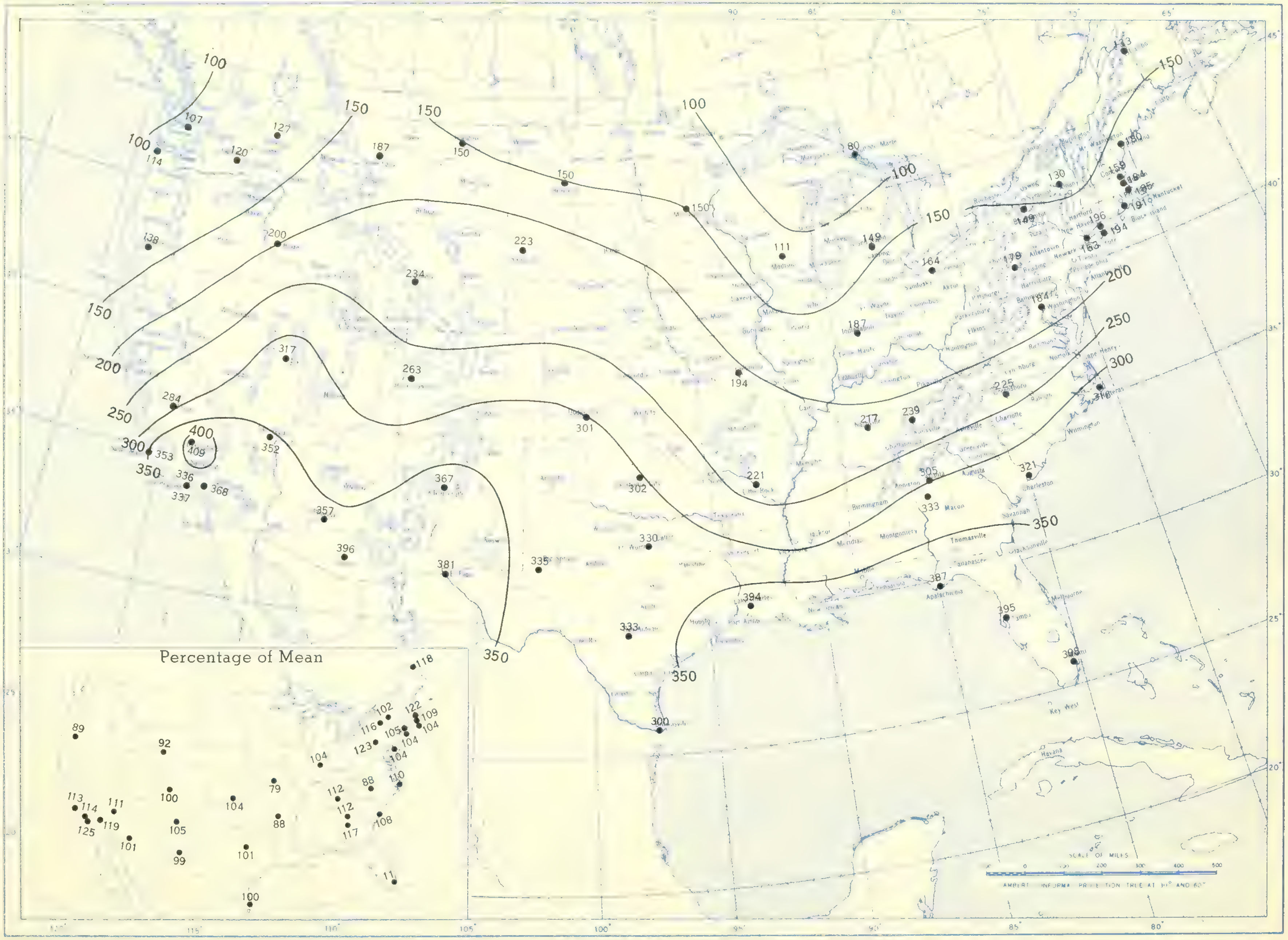
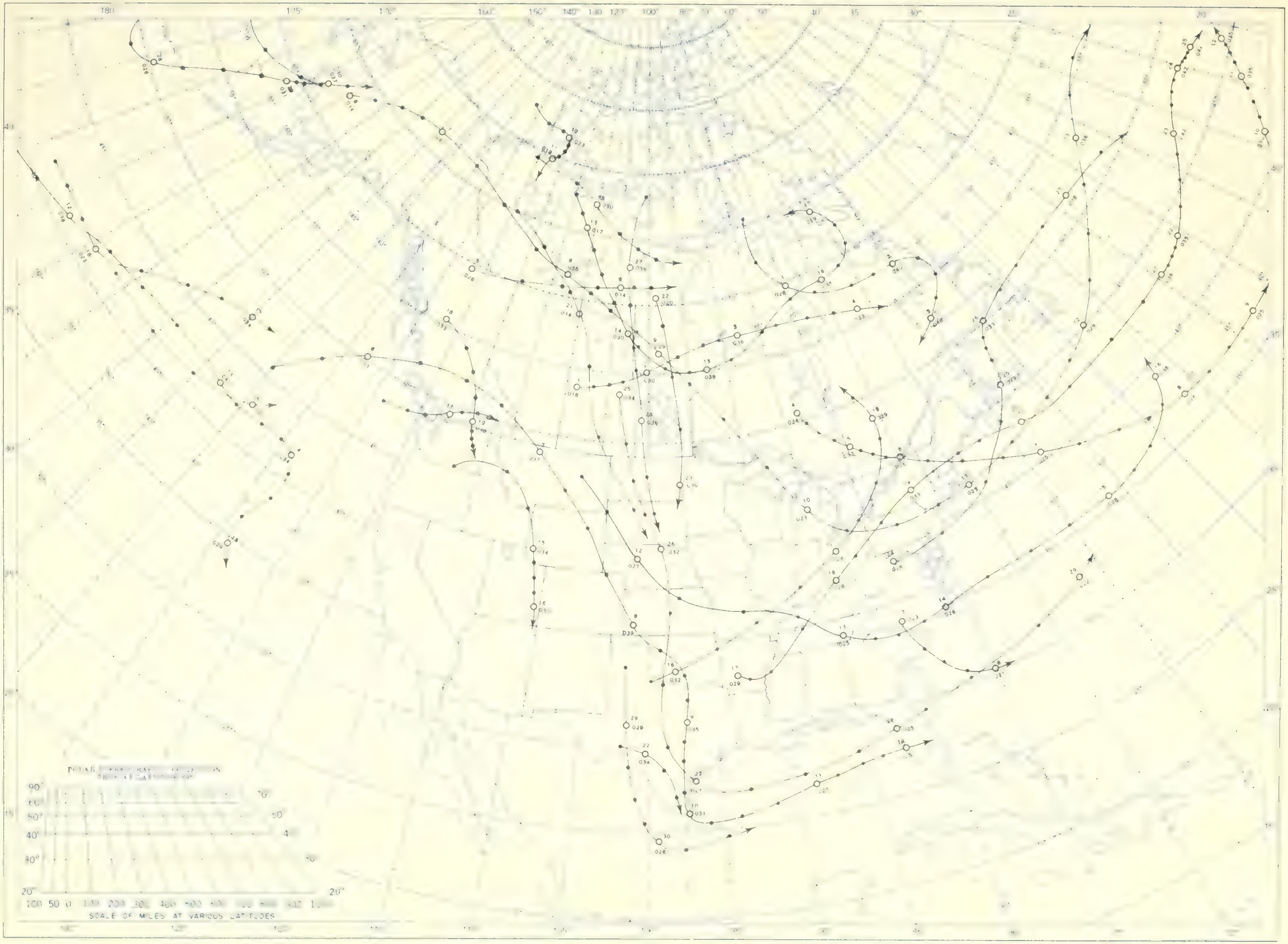


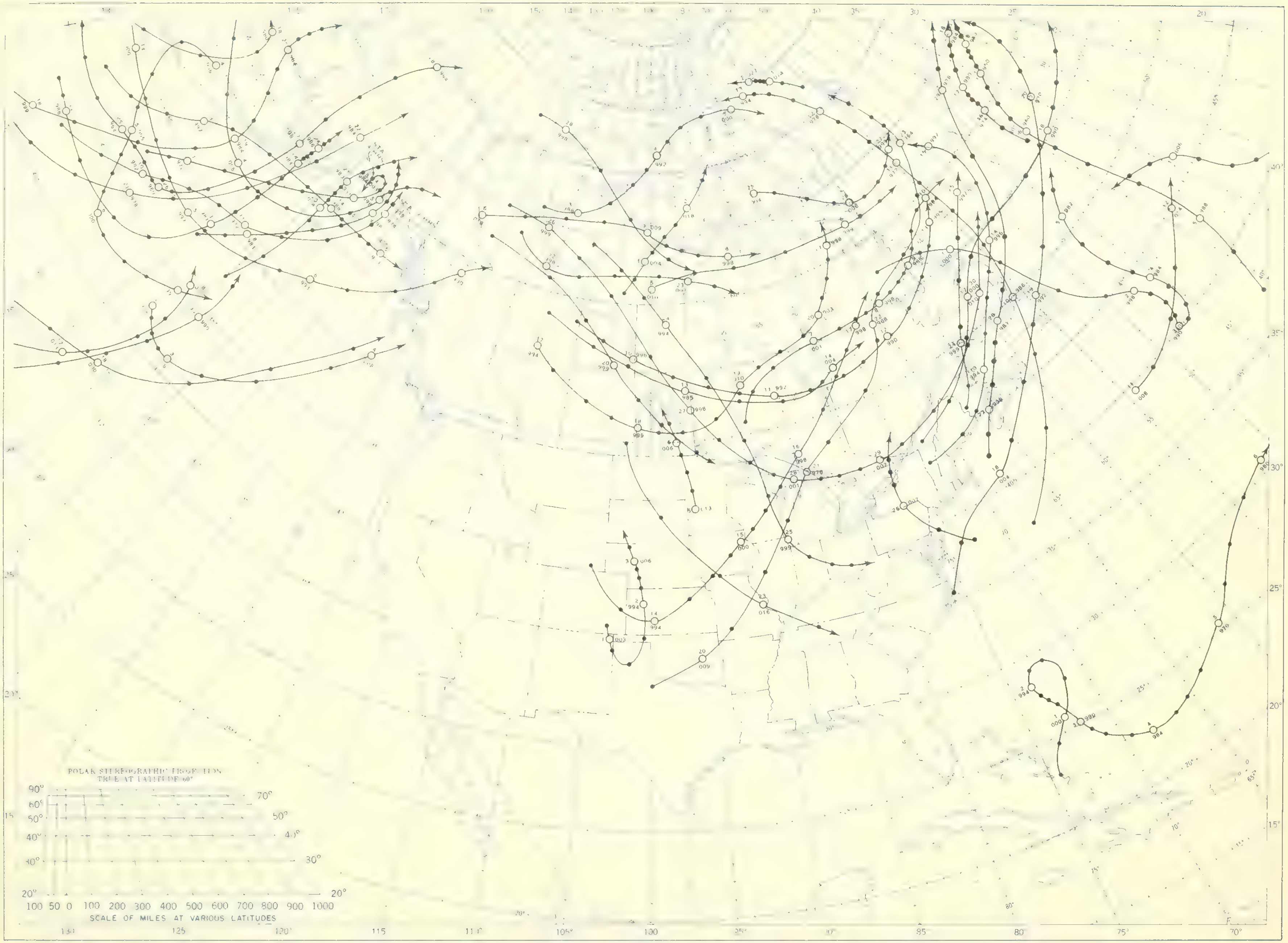
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$). Basic data for isolines are shown on chart. Further estimates are obtained from supplementary data for which limits of accuracy are wider than for those data shown.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, November 1956.



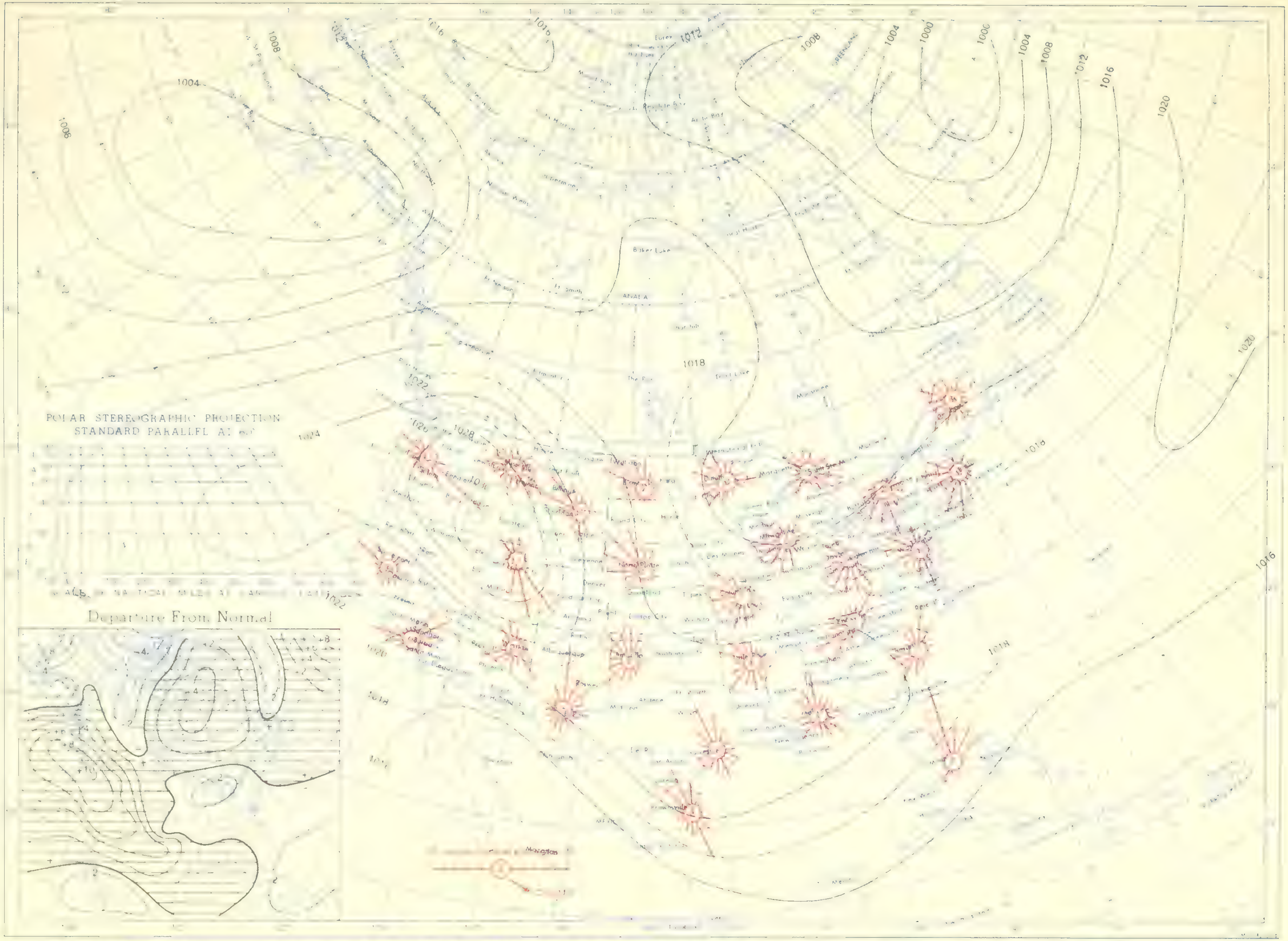
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, November 1956.



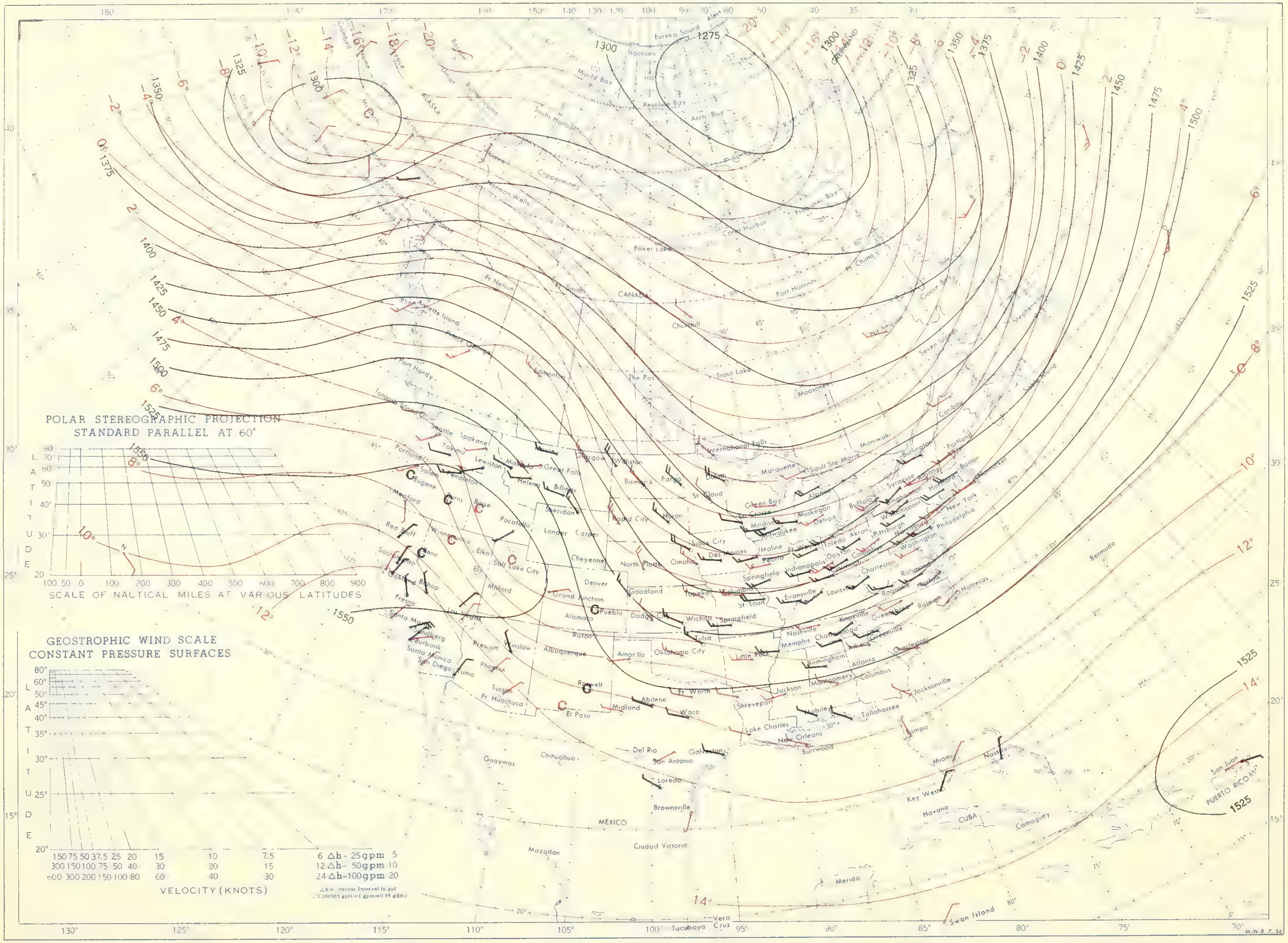
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, November 1956. Inset: Departure of Average Pressure (mb.) from Normal, November 1956.



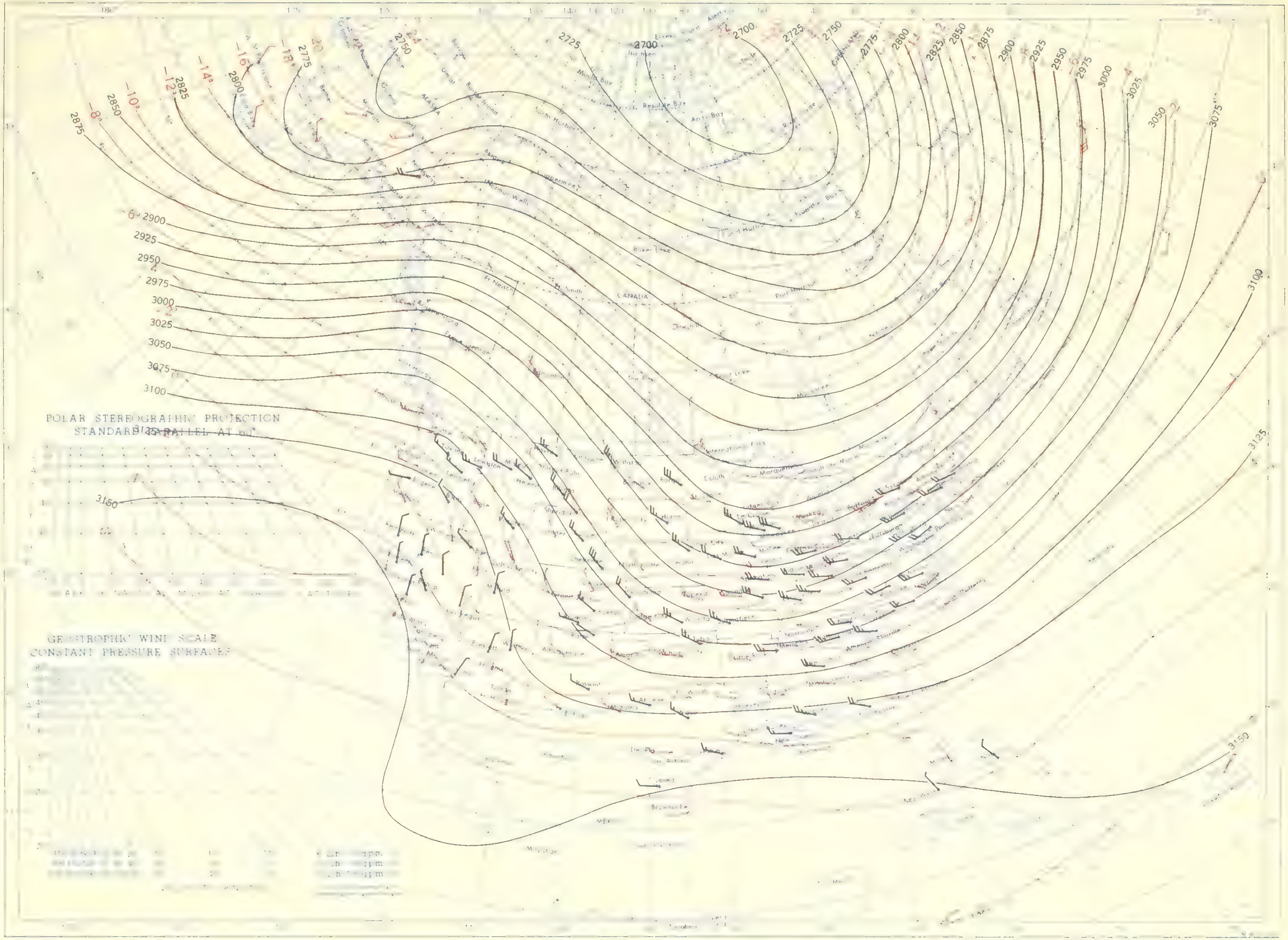
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 0300 GMT, November 1956. Average Height and Temperature, and Resultant Winds.



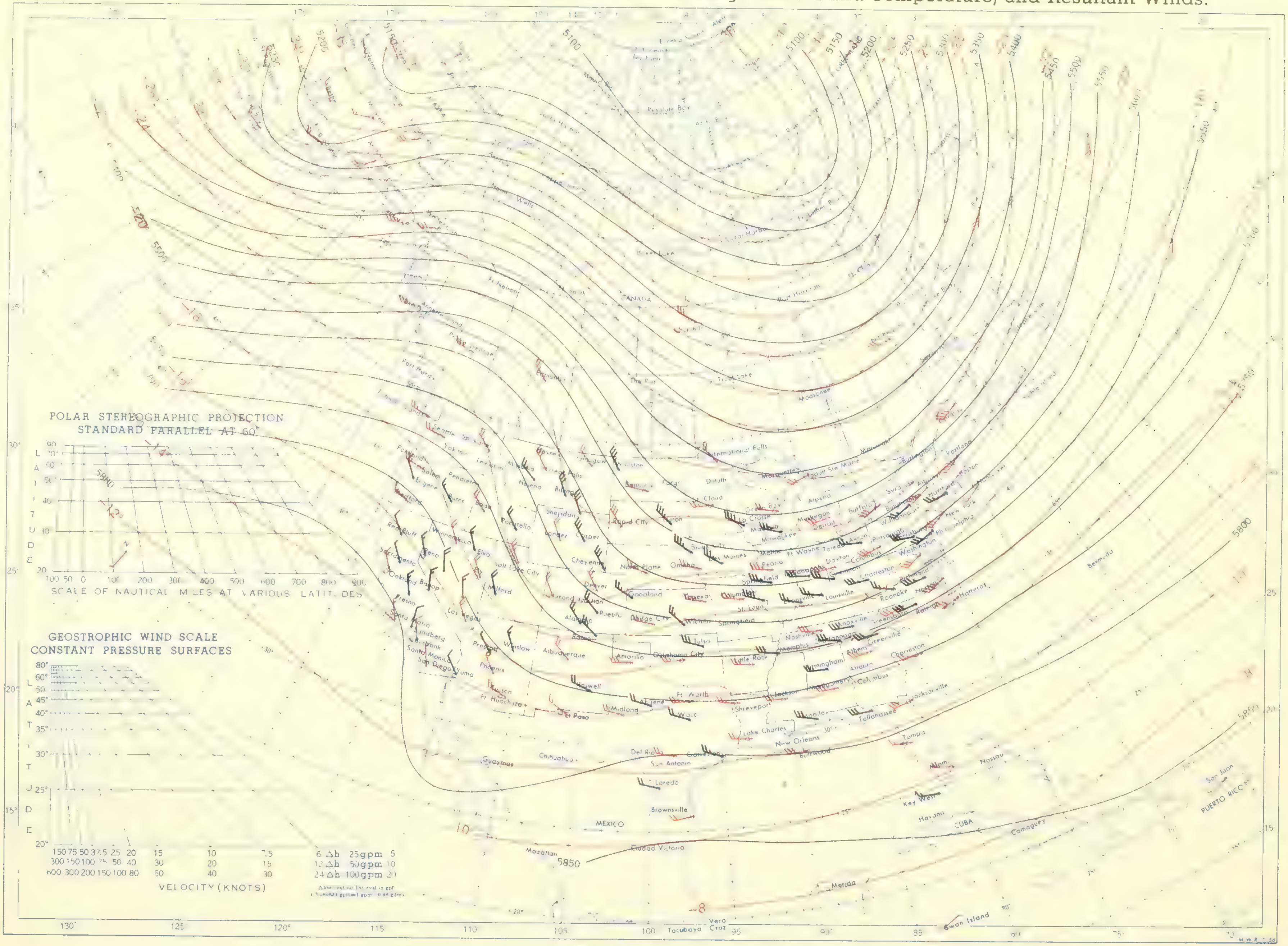
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. Winds shown in red are based on rawins taken at the indicated pressure surface and time. Those in black are based

Chart XIII. 700-mb. Surface, 0300 GMT, November 1956. Average Height and Temperature, and Resultant Winds.



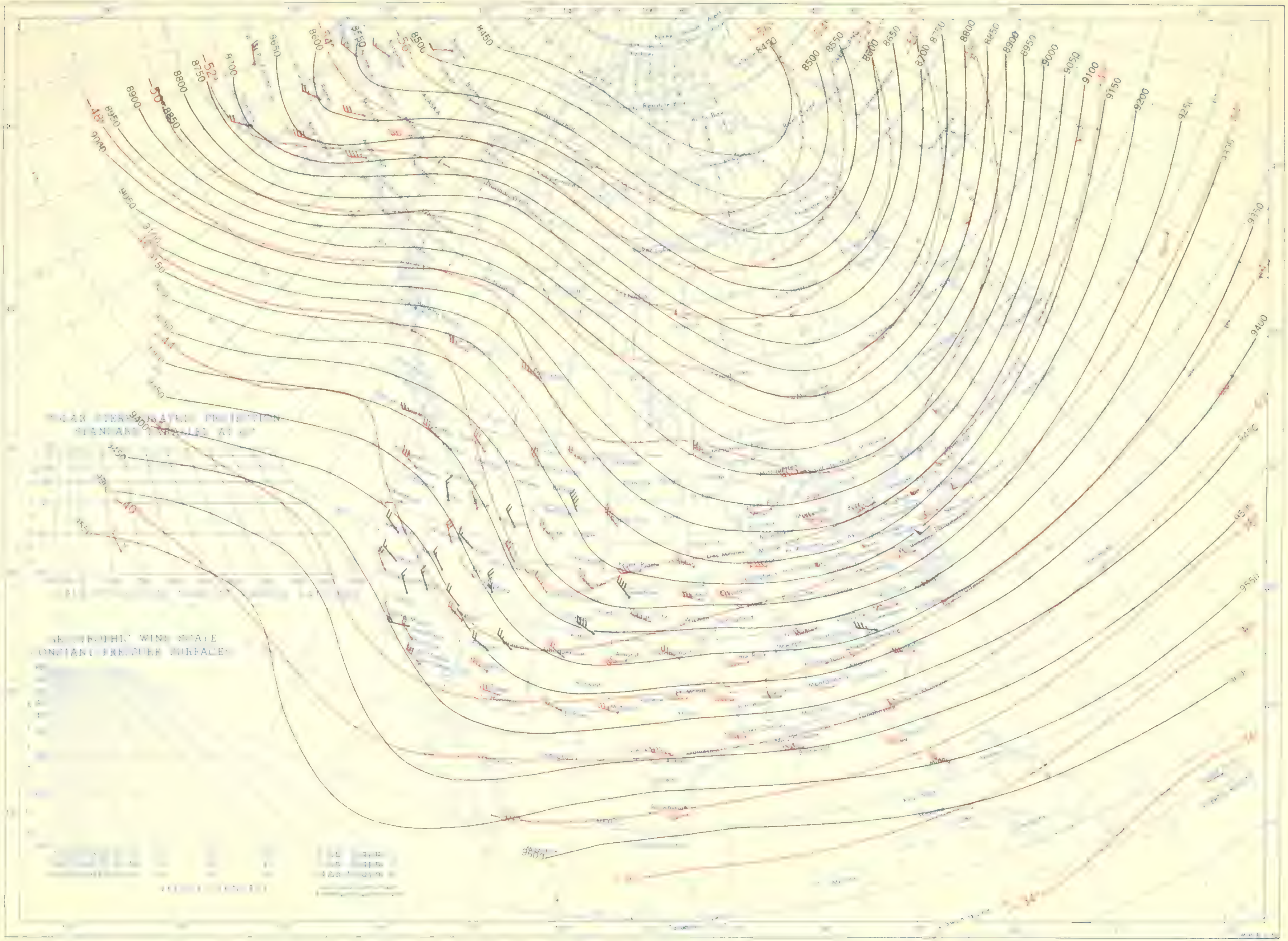
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 0300 GMT, November 1956. Average Height and Temperature, and Resultant Winds.



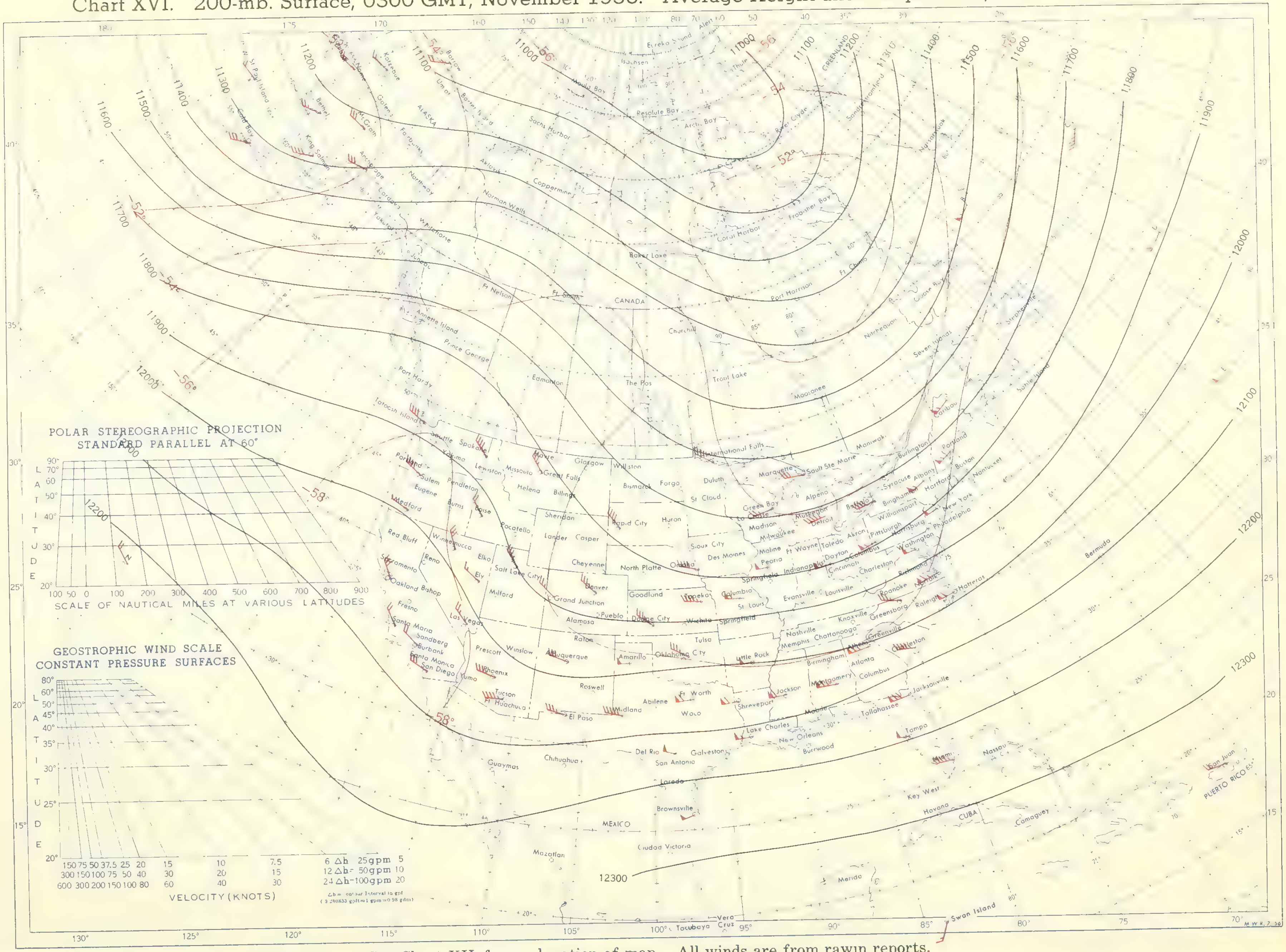
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 0300 GMT, November 1956. Average Height and Temperature, and Resultant Winds.



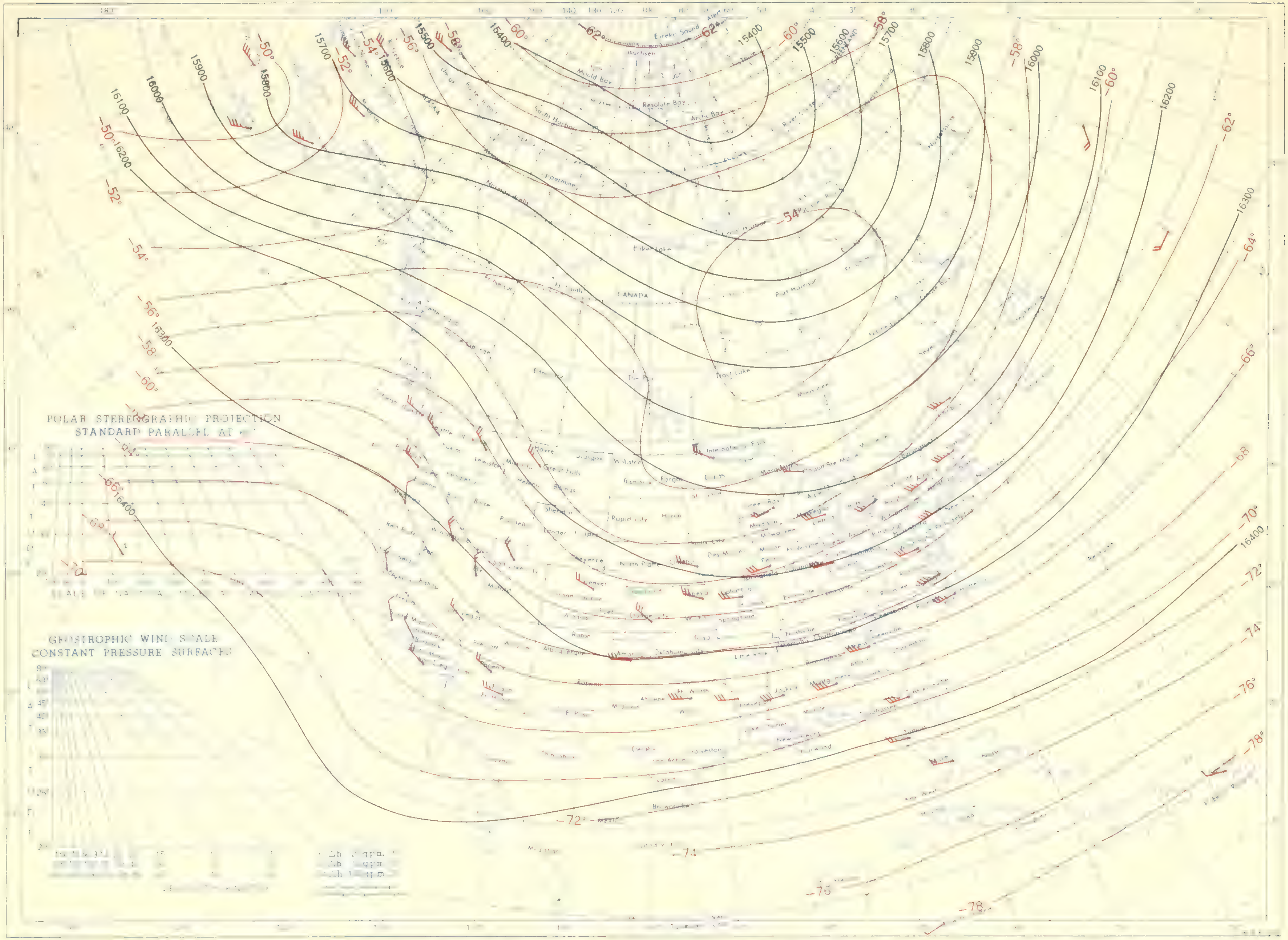
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 0300 GMT, November 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

Chart XVII. 100-mb. Surface, 0300 GMT, November 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

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DECEMBER 1956

Volume 7 No. 12

ASHEVILLE: 1957

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NOTE.--This publication contains all of the climatic data formerly printed in the MONTHLY WEATHER REVIEW.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 12

DECEMBER 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

Mild, dry, sunny weather prolonged the drought from the middle Mississippi Valley to California, and extended the dry spell along the south Atlantic coast. In contrast, frequent precipitation and extreme cloudiness featured the month's weather in the Great Lakes region and Northeast and along the north Pacific coast. Also, heavy midmonth rains in the Pacific Northwest and South caused some flooding in southwestern Oregon and western Tennessee and replenished soil moisture in the latter area. West of the Great Lakes light snowfall and above normal temperatures were responsible for bare ground most of the month in the northern Great Plains and a very light snowpack in the Western Mountains.

Heavy fog on several days during the last decade along the Atlantic coast, in the Great Lakes region and in the Pacific Northwest occasionally halted or delayed air traffic.

High pressure was again a controlling weather factor during much of the month in the Far West, particularly in the Southern portion where Grand Junction, Colo., recorded its alltime high reading of 31.12 inches (m.s.l.) on the 12th and the all-time high of 30.92 inches (m.s.l.) for Reno, Nev., was equaled on the 9th. Temperature inversions early and late in the month again caused valley fogs with temperatures lower than those at higher elevations. In the Northeast Nantucket, Mass., recorded its lowest December pressure of record, 28.50 inches (m.s.l.) on the 29th.

The month was extremely windy in the northern Great Plains. At Great Falls, Mont., wind movement averaged 22.1 m.p.h. for the month and 34 m.p.h. from the 8th through the 10th. During the latter period chinook winds, occasionally reaching speeds near 100 m.p.h., caused widespread damage. Slick roads and fog on several days in this area were responsible for many traffic accidents which resulted in a number of deaths and many injuries.

TEMPERATURE.--Monthly averages were near normal west of the Continental Divide but above at all stations east of the Divide with greatest anomalies in the southeast, where they ranged up to 10° at Knoxville, Tenn. In the East unusual warmth was the main weather feature of the month. Southward from the Ohio Valley and eastward from the lower Mississippi, the month generally was the warmest December since 1931, and at several stations including Nashville, Tenn., and Columbia, S. C., the warmest since 1889. For a number of stations temperatures reached new highs for December, ranging from 70° at Columbus, Ohio, to 82° at New Orleans, La.

The abnormally warm weather in the Southeast ended about the middle of the last decade when an inflow of cold air from the northern Great Plains reduced temperatures to freezing or below at points as far south as the Florida Everglades. Overall damage, however, was light and limited mostly to tender truck in that State.

In the northern Great Plains temperatures, remaining above normal throughout the last half of the month, were unusually high the last week. Averages for this period were 20° or more above normal and after the 25th maxima set new daily records at many stations.

The last week was also unusually warm in southern California. On the 27th San Diego recorded 85°, a record high there for December, and Fontana Kaiser 91° for the month's highest.

The month's main cold spell occurred in the northwest quarter of the country from about the 4th to 10th. Subzero minima extended down to northern Arizona and New Mexico, and on the 8th Sage, Wyo., recorded -46° for the month's lowest temperature.

PRECIPITATION.--Like most other months of 1956, December was notable for its deficiencies of precipitation rather than excesses. From southern Minnesota, western Iowa, and eastern South Dakota down through the western Great Plains into southern Texas and the Far Southwest monthly totals were under one-half inch and less than 50 percent of normal. In most of the southwestern Great Plains winter grains further deteriorated and water shortages continued to plague many communities, both rural and urban. The southeastern Great Plains received heavy rains about midmonth, which replenished surface soil moisture. Grain and pasture prospects were greatly improved in the northeastern half of Texas, much of Oklahoma, and eastern Kansas.

The month's precipitation was also less than 50 percent of normal in an area including most of Florida, southeastern Georgia, and coastal areas of the Carolinas. Totals were less than 2 inches in all this area and less than one-half inch in most of Florida. At Miami, Fla., rainfall totaled 0.04 inch, the lowest December total there on record. Ground water levels and stream flow were below normal in the entire area and the lowest of record locally. Growth of fall crops was retarded in southern South Carolina and southeastern Georgia, and irrigation of truck and citrus was necessary in Florida.

Heavy precipitation fell in a belt extending from central Gulf areas to New England, with monthly totals ranging up to more than 10 inches near the Gulf coast. Falls were more frequent (measurable amounts on all but 2 or 3 days at many stations) but lighter in the northern portion of the belt than in the southern portion. Syracuse, N. Y., recorded only 7 percent of the possible amount of sunshine, the least amount ever recorded there for any month. Extreme cloudiness was general over the entire Northeast.

SNOWFALL.--Snowfall was above normal in some sections of the northeastern quarter of the country and west of the Cascades and generally below normal elsewhere. In most of the northern Great Plains the ground was bare most of the month, and depths in the mountains of both the Northeast and Far West were increased very little or not at all.

The above normal snowfall west of the Cascades nearly all occurred during a storm on the 5th to the 7th, but at lower elevations most of it melted within 24 hours after the storm.

Heavy snow fell in the Northeast on the 13th and 14th, leaving up to a foot on the ground in some extreme northern areas, and another storm on the 29th and 30th brought 4 to 10 inches to eastern and northern portions of New England. Ski resorts in New England which had been in need of snow were back in business following the storm on the 29th and 30th.

DESTRUCTIVE STORMS.--Glaze, the most destructive meteorological element during the month, caused damage in many northern and central sections. Probably its greatest effects were felt in Macoupin, Madison, and Jersey Counties, Illinois, where glaze there on the 8th, the worst since 1924, caused damage estimated at more than $50,000,000.

Tornadoes caused some damage in Missouri and Kansas on the 4th, and heavier damage (estimated at many thousands of dollars) and two injuries in Alabama and Georgia during the night of the 22 - 23d.

High winds on the 9th, 10th, and 11th caused widespread damage in Montana and North Dakota. During this storm a peak gust of 99 m.p.h. was measured at Livingston, Mont., and estimated gusts up to 120 m.p.h. were reported from other sections of the State. Bismarck, N. Dak., recorded a maximum speed of 61 m.p.h. on the 10th, a new December record. In southern California high winds on the 22d caused widespread minor damage, and on the 24th to the 28th they were blamed for spreading brush fires which were responsible for losses estimated at many millions of dollars.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

DECEMBER 1956

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Chatom	83	5	2 Stations	14	1	Citronelle	13.59	Fort Morgan	1.85
Arizona	Alhambra 2NE	86	15	Alpine	-11	9	Bright Angel RS	1.64	37 Stations	.00
Arkansas	8 Stations	82	3+	Batesville Livestock	13	10	Dermott	5.45	Ashdown	.10
California	Fontana Kaiser	91	30	Boca	-24	8	Smith River 3WNW	16.06	38 Stations	.00
Colorado	Eversoll Ranch	73	30	Taylor Park	-39	9	Steamboat Springs	3.25	2 Stations	.00
Connecticut	Stamford 5N	64	7	Norfolk 2SW	-4	31	Groton	5.97	Kent	3.59
Delaware	2 Stations	75	7	3 Stations	18	19+	Lewes	4.51	Wilmington City Hall	3.15
Florida	Bradenton Exp. Station	89	14	Niceville	24	1	Milton Exp. Station	7.77	7 Stations	.00
Georgia	Newington	86	12	Blairsville Exp. Sta.	11	1+	Flat Top	14.68	2 Stations	.00
Idaho	Three Creek	66	3	Obsidian 2NNW	-30	8	Burke 2ENE	7.80	Grouse	.05
Illinois	E St. Louis Parks Col	74	5	2 Stations	-9	13	Salem	5.77	Joliet	.64
Indiana	Henryville	75	7	Goshen College	4	30	Newberry Hwy St Bridge	5.46	Goshen College	.98
Iowa	2 Stations	66	3+	2 Stations	-22	13	Keokuk	2.33	Pisgah	.05
Kansas	3 Stations	74	2+	Alton 6E	-3	9	Columbus 6NNW	2.39	12 Stations	.00
Kentucky	Manchester 4SE	77	6	3 Stations	15	1	Stearns	10.00	Fords Ferry Dam 50	1.99
Louisiana	Logansport	89	5	Converse	19	25	Singer	15.11	Spearsville	1.12
Maine	4 Stations	54	7+	Jackman	-20	31	Bar Harbor	5.39	Jackman	1.51
Maryland	do	76	7+	Bittinger 2NW	5	30	Oakland 1SE	6.74	Ocean City	2.15
Massachusetts	Plymouth	65	7	West Cummington	-3	31	Blue Hill	7.86	Sterling	3.26
Michigan	Monroe Waterworks	64	6	2 Stations	-24	13+	Houghton CAA AP	3.77	Gull Lake Exp. Farm	.81
Minnesota	2 Stations	53	2+	do	-31	17+	Grand Marais	2.18	2 Stations	.02
Mississippi	5 Stations	83	7+	Leakesville	18	1	Eupora	10.07	Lambert	2.06
Missouri	2 Stations	78	3+	Princeton	-9	13	Moselle	5.57	Tarkio	.31
Montana	Flatwillow 4ENE	70	29	Thoeny 3N	-41	7	Summit	6.85	Biddle	.00
Nebraska	8 Stations	69	2+	Walthill	-18	13	Randolph	.80	Whitman 4E	.00
Nevada	Lathrop Wells	77	27	Deeth	-31	8	Jarbidge	2.87	23 Stations	.00
New Hampshire	Windham	59	12	Benton	-22	31	Dublin	6.24	Berlin	2.13
New Jersey	Hammonton 2NNE	77	8	Layton 3NW	2	31	Phillipsburg	6.34	Mays Landing	2.63
New Mexico	2 Stations	78	5+	Eagle Nest	-27	9	Bateman Ranch	.92	46 Stations	.00
New York	N Y Westerleigh Stat. Is.	69	7	Tupper Lake Sunmount	-23	31	Liberty	6.54	Ellenburg Depot	1.23
North Carolina	Whiteville	81	13	Celo 2S	9	26	Clingmans Dome	11.94	Sloan 3S	.30
North Dakota	5 Stations	58	10+	Belcourt Indian Res.	-36	17	Cavalier	1.41	Sentinel Butte 20S	T
Ohio	Chesapeake Huntg CAA AP	75	6	2 Stations	7	30	Proctorville Dam 27	6.27	Montpelier	1.03
Oklahoma	Altus	84	5	Kenton	4	9	Healdton	5.24	2 Stations	.00
Oregon	2 Stations	67	4+	Seneca	-22	7	Valsetz	20.97	Madras 2N	.22
Pennsylvania	Norristown	74	7	Pleasant Mount 1W	-6	31	Kregar 4SE	6.23	Everett 1SW	1.89
Rhode Island	Greenville	63	7	Greenville	5	30+	Woonsocket	6.18	Block Island WB AP	3.49
South Carolina	Tilghman Forest Nursery	86	5	Chester 2SW	13	1+	Sassafras Mountain	6.59	2 Stations	.56
South Dakota	Wood	70	3	Ralph	-26	7	Lead	.89	4 Stations	T
Tennessee	Coldwater 1E	78	8	Mountain City 2	14	31	Livingston	10.81	Dresden	2.15
Texas	Rio Grande City 1E	90	7+	Stratford	6	9+	Orange	15.06	Several Stations	.00
Utah	St. George PH	70	5+	Woodruff	-39	8	Alta	7.47	4 Stations	.00
Vermont	Bennington 2NW	62	6	Mount Mansfield	-22	30	Mays Mill	5.47	Gilman	1.55
Virginia	4 Stations	80	7+	Big Meadows	9	30	Lawrenceville	5.97	Newport 2NW	.83
Washington	Long Beach 3NNE	63	28	Stockdill Ranch	-24	7	Quinault RS	32.47	Quincy 3S	.12
West Virginia	6 Stations	76	6+	Cranberry Glades	5	31	Weston	8.03	Birch River 6SSW	1.11
Wisconsin	Kenosha	61	5	2 Stations	-28	18	Gurney	2.17	Grantsburg CAA AP	.21
Wyoming	Torrington Exp. Farm	67	3	Sage 4NNW	-46	8	Snake River	3.11	2 Stations	.00
Puerto Rico	3 Stations	92	5+	2 Stations	57	3+	Rio Blanco 1800 Feet	19.24	Ensendo	.02

+ And also on a later date or dates.

Note: Dates in Table 1 apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

Table 2

DECEMBER 1956

State and station	Elevation (ground)	Pressure: Station ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	No of days: Max. 90° F or above	No of days: Min 32° F or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Max depth on ground	Wind: Average hourly speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No of days (sunrise to sunset): Clear	No of days (sunrise to sunset): Partly cloudy	No of days (sunrise to sunset): Cloudy	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb.	°F	°F	°F	°F	°F		°F				°F	%	In	In.	In			In.	In	M p.h.		M p.h.			0–3	4–7	8–10	0–10	%
ALABAMA																																
Birmingham	610	994.7	1020.4	65	44	54.5	8.8	75	8	25	1	0	7	45	75	4.16	-1.09	2.08	7	1	T	0	8.1	S	37	NW	28	10	5	16	5.9	47
Mobile	211	1012.7	1020.9	70	49	59.4	5.9	78	5+	32	26	0	1	51	80	4.32	-1.09	1.98	6	2	.0	0	8.8	S	--	---	--	12	4	15	5.5	--
Montgomery	198	1012.9	1020.6	68	45	56.6	7.2	78	6+	27	1	0	5	48	80	8.88	4.34	3.85	7	3	.0	0	6.4	S	46	SW	15	11	5	15	5.8	56
ARIZONA																																
Flagstaff	6993	------	------	45	15	30.3	1.9	60	1	-2	10	0	29	--	--	.39	-1.47	.39	1	0	5.0	5	----	---	-	---	--	24	4	3	2.1	--
Phoenix	1114	979.7	1019.7	68	38	53.3	1.2	77	29	27	24	0	3	27	29	.01	-.96	.01	1	0	.0	0	3.5	E	•28	NE	9	22	5	4	2.5	96
Prescott	5014	850.0	1021.7	54	23	38.5	.7	65	1	13	9+	0	28	--	--	.19	-1.18	.19	2	0	T	0	7.5	S	33	SW	5	23	5	3	2.4	88
Tucson	2558	928.9	1018.2	67	38	52.5	.5	77	1	26	24	0	5	23	37	.22	-.72	.20	3	0	.0	0	7.0	SE	36	SE	9	20	4	7	3.3	92
Winslow	4880	855.4	1024.1	49	16	32.5	-2.0	62	4	4	10	0	30	8	38	T	-.53	T	0	0	.0	0	6.3	SE	•29	WSW	7	21	6	4	2.6	--
Yuma	199	1014.2	1019.5	72	43	57.8	.7	80	1	38	11+	0	0	14	20	.00	-.55	.00	0	0	.0	0	6.8	N	34	N	22	23	3	5	2.4	93
ARKANSAS																																
Fort Smith	458	1001.7	1018.8	57	35	45.6	3.1	79	5	21	10	0	13	37	76	1.63	-1.51	.53	7	2	.0	0	8.7	W	33	W	6	11	3	17	6.1	53
Little Rock	257	1005.8	1018.8	59	39	49.4	5.5	80	5	24	10	0	5	40	73	2.65	-1.43	.94	9	1	.0	0	9.4	SW	30	NW	23+	9	4	18	6.4	44
Texarkana	361	------	------	64	42	53.0	5.0	81	5+	24	10	0	5	--	--	.89	-3.95	.52	4	1	.0	0	----	-	--	---	-	--	--	--	---	--
CALIFORNIA																																
Bakersfield	489	1005.4	1023.9	59	36	47.3	-1.4	73	3+	26	9	0	11	35	68	.05	-.98	.05	2	0	.0	0	3.2	ENE	•23	NW	4	12	10	9	4.9	--
Bishop	4108	879.4	1023.0	62	21	41.5	2.4	72	2	11	9+	0	30	--	--	.05	-.84	.05	1	0	.0	0	----	---	--	---	-	25	4	2	1.8	
Blue Canyon	5280	842.9	1021.0	53	37	44.9	6.4	70	27	15	7	0	7	-	--	3.68	-5.07	2.64	5	0	19.3	16	----	--	--	---	-	15	7	9	4.0	-
Burbank	699	993.2	1019.7	73	44	58.3	3.6	84	27+	35	9	0	0	28	37	.13	-2.73	.13	1	0	.0	0	3.9	S	•29	NNE	25	21	6	4	2.5	-
Eureka (U)	43	1022.0	1024.4	53	40	46.2	-2.4	60	1	30	7	0	3	--	-	7.18	1.09	1.92	11	1	T	0	4.3	---	23	NW	5	7	8	16	6.5	44
Fresno	331	1011.2	1023.7	56	33	44.5	-1.8	69	1+	25	9+	0	15	35	75	.31	-1.32	.30	3	0	.0	0	3.9	E	20	SE	5	16	4	11	4.3	73
Los Angeles (U)	312	------	------	72	49	60.5	3.2	82	28+	38	9	0	0	--	--	.34	-2.77	.34	1	0	.0	0	6.0	-	27	NW	21	22	4	5	2.4	88
Los Angeles	99	1015.6	1019.5	70	47	58.8	3.2	82	29	39	9	0	0	35	51	.49	-2.12	.49	1	0	.0	0	5.7	W	%46	N	21	21	4	6	3.0	--
Mt. Shasta (R)	3544	898.4	1025.4	48	24	36.3	1.6	65	29	8	5	0	29	--	--	.40	-4.99	.16	6	0	2.6	2	----	---	-	---	--	12	12	7	4.6	
Oakland	3	1023.0	1023.4	57	37	47.2	-1.4	65	25	30	8	0	5	38	74	.29	-3.13	.27	3	0	.0	0	5.3	SE	•18	NNW	21	18	5	8	3.7	--
Red Bluff	341	1010.5	1023.9	61	33	47.2	.4	77	1	25	7+	0	15	27	52	T	-4.23	T	0	0	.0	0	7.3	NW	36	SE	4	14	9	8	4.0	85
Sacramento	17	1022.4	1023.5	55	33	44.2	-1.6	65	1	25	22	0	16	35	75	.17	-2.84	.16	2	0	.0	0	6.7	NNW	31	NW	21	14	9	8	4.5	72
Sandberg (R)	4517	866.6	1021.3	51	39	45.2	2.8	65	3	21	8	0	6	--	--	.15	-2.70	.08	3	0	.1	T	17.7	---	•52	NNW	21	21	5	5	2.9	--
San Diego	19	1015.6	1018.8	71	48	59.9	3.0	85	27	41	9	0	0	38	51	.18	-2.39	.15	2	0	.0	0	4.4	NE	20	S	21	20	6	5	3.0	88
San Francisco (U)	52	------	------	60	46	52.7	.8	70	1	41	7+	0	0	--	--	.37	-3.70	.34	3	0	.0	0	5.7	---	21	W	5	20	8	3	2.6	85
San Francisco	8	1022.4	1023.4	58	39	48.7	-.6	68	1	33	8+	0	0	41	78	.48	-3.11	.32	3	0	.0	0	5.3	WNW	31	NW	21	15	10	6	3.6	--
Santa Maria	238	1012.2	1021.1	70	36	53.2	.8	83	25	26	9	0	9	32	53	.36	-2.25	.32	2	0	.0	0	5.6	WNW	•21	WSW	5	21	3	7	2.9	-
COLORADO																																
Alamosa	7536	772.1	1025.8	41	0	20.1	.7	52	4	-13	9	0	31	--	--	T	-.17	T	0	0	.4	T	----	---	-	---	--	17	12	2	3.1	--
Colorado Springs	6173	810.4	1020.7	48	18	33.4	1.9	68	30	-2	8	0	31	14	49	.30	-.01	.18	4	0	3.9	3	10.1	NNW	•36	WNW	12	17	6	8	3.8	--
Denver	5292	837.5	1018.5	48	23	35.7	4.0	62	29+	5	8	0	27	17	53	.62	.11	.21	6	0	6.3	2	11.0	S	41	W	10	17	8	6	3.8	73
Grand Junction	4849	865.2	1028.2	35	14	24.9	-3.6	56	5	-2	10	0	29	14	65	.47	-.21	.27	5	0	6.4	4	6.8	ESE	30	SW	5	19	4	8	3.8	74
Pueblo	4639%	857.4	1020.2	52	19	35.2	4.1	68	4	-6	9	0	30	17	55	.31	-.12	.17	4	0	3.0	2	7.8	W	42	NW	10+	16	9	6	3.8	85
CONNECTICUT																																
Bridgeport	7	1015.9	------	45	30	37.7	5.4	58	7	13	30	0	19	--	--	3.85	.77	1.12	18	0	1.6	1	---	--	--	---	--	7	5	19	7.0	-
Hartford	169	1009.9	1016.1	41	25	33.4	3.8	58	7+	7	30	0	26	26	75	4.84	1.55	1.51	17	0	7.5	3	10.3	N	42	NW	18+	2	8	21	8.0	27
Middletown (U)	133	1010.0	------	43	26	34.7	---	63	8	10	30	0	26	-	--	4.62	----	1.34	17	0	6.1	2	8.0	---	%56	NW	18	--	--	--	---	--
New Haven	6	1015.0	1015.6	45	29	36.6	4.7	56	7+	13	30	0	23	-	--	5.40	1.46	1.43	19	0	3.3	2	7.5	---	25	NW	18	7	6	18	7.2	43
DELAWARE																																
Wilmington	78	1013.3	1016.6	50	33	41.3	6.2	68	7	18	30	0	16	36	82	4.09	1.10	1.18	14	0	T	T	10.2	WSW	--	--	-	4	3	24	7.9	--
DIST. OF COLUMBIA																																
Washington (U)	72	------	------	53	38	45.6	7.4	74	7	23	30	0	6	--	--	3.05	.30	.86	13	--	.3	T	6.3	.	29	NW	25	--	-	--	---	--
Wash. Nat'l. AP	14	1012.7	1017.2	52	36	44.2	6.2	72	7	24	30	0	9	35	74	3.02	.41	.90	13	0	.2	T	8.3	S	50	NW	30	5	4	22	7.8	29
FLORIDA																																
Apalachicola (U)	13	1019.5	------	68	54	61.1	4.8	75	23	40	1+	0	0	--	--	1.57	-1.72	1.12	4	0	.0	0	7.1	---	28	NW	29	17	5	9	4.4	60
Daytona Beach	31	1020.3	1021.9	74	49	61.7	1.2	84	23	28	30	0	5	53	79	.06	-2.39	.05	2	0	.0	0	8.2	W	30	SW	29	14	13	4	4.0	--
Fort Myers	15	1020.7	------	78	54	66.3	.7	86	17+	38	27	0	0	--	--	.10	-1.19	.10	2	2	.0	0	7.5	---	25	N	29	14	16	1	3.6	--
Jacksonville	24	1020.4	1021.7	73	51	61.6	5.2	84	23	34	1+	0	0	51	75	.04	-2.33	.04	1	0	.0	0	8.8	WSW	31	W	29	13	10	8	4.6	72
Key West (U)	9	1019.0	------	79	68	73.5	1.7	85	13+	52	31	0	0	--	--	.15	-1.63	.09	3	0	.0	0	8.5	---	23	SW	29	18	12	1	3.3	85
Lakeland (U)	214	------	------	76	57	66.1	3.6	84	15	39	30	0	0	--	--	.37	-1.63	.27	2	0	.0	0	6.3	---	--	---	--	13	16	2	3.9	66
Miami (U)	8	------	------	76	64	70.1	.6	81	9+	44	27	0	0	--	--	.14	-1.59	.09	4	0	.0	0	12.0	--	33	NW	29	24	7	0	2.1	95
Miami	8	1019.5	1020.6	78	61	69.4	.2	84	24	42	27	0	0	59	73	.26	-1.39	.20	4	0	.0	0	10.7	E	23	SW	29	16	14	1	3.1	--
Miami Beach	9	------	------	77	66	71.2	.3	82	24	46	27	0	0	--	--	.14	-1.69	.04	5	0	.0	0	----	---	--	---	--	10	19	2	---	--
Orlando	106	1017.6	1022.2	76	53	64.5	1.8	85	17	35	1	0	0	56	79	.30	-1.79	.19	2	0	.0	0	7.5	NE	29	WNW	29	15	11	5	3.9	--
Pensacola (U)	13	1018.5	------	68	53	60.4	5.3	77	18	35	26	0	0	--	--	3.25	-.92	1.79	10	2	.0	0	8.8	---	24	W	28	--	--	--	---	50
Tallahassee	64	1018.6	1021.1	70	47	58.5	4.4	80	16	28	30	0	3	50	81	2.28	-1.40	1.30	4	1	.0	0	5.5	SE	--	--		13	8	10	5.0	--
Tampa	19	1020.2	1021.7	76	55	65.5	2.8	85	17	39	1+	0	0	55	76	.21	-1.75	.12	3	0	.0	0	8.4	ENE	30	WNW	29	12	15	4	4.3	78
West Palm Beach	15	1019.5	1020.5	77	60	68.4	-.3	85	24	40	30	0	0	59	75	1.35	-.85	1.07	5	0	.0	0	10.5	E	31	WNW	29	11	19	1	3.6	--
GEORGIA																																
Athens	798	990.5	1019.9	64	43	53.3	8.1	76	13	27	30	0	8	44	75	3.78	-.94	1.46	8	1	T	T	9.3	SW	27	WSW	28	11	7	13	5.8	--
Atlanta	975	978.5	1020.7	64	45	54.3	9.1	74	8	29	1+	0	5	44	75	3.12	-1.43	1.30	10	0	T	0	11.5	SW	46	W	9	12	7	12	5.3	58
Augusta	143	1013.3	1020.1	69	42	55.4	7.9	80	13	27	2	0	8	45	77	2.20	-1.53	1.41	6	1	.0	0	6.5	SW	30	WNW	29	8	9	14	5.7	--
Columbus	385	1006.3	------	67	42	54.9	7.3	77	18	24	1	0	10	--	--	9.29	4.72	4.41	9	2	.0	0	----	---	--	---	--	11	8	12	5.5	--
Dawsonville	1110	------	------	62	36	48.9	---	76	8	19	1+	0	14	--	--	6.11	----	1.42	10	1	.0	0	----	---	--	---	--	--	--	--	---	--
Macon	356	1006.6	1020.3	69	44	56.3	6.6	79	14	29	1+	0	5	45	73	5.78	1.54	3.40	8	2	.0	0	8.5	SW	30	W	29	12	8	11	5.1	70
Rome	637	996.5	------	64	39	51.1	7.8	77	8	17	1	0	15	--	--	4.59	-.63	1.36	11	3	T	0	----	---	--	---	--	10	6	15	6.1	--
Savannah	48	1018.2	1020.8	71	46	58.5	6.1	81	13+	29	30	0	5	47	74	.89	-1.75	.54	4	0	.0	0	8.4	WSW	35	NW	29	12	10	9	4.9	64
Thomasville (U)	283	------	------	71	50	60.5	5.8	81	16	32	30	0	1	--	--	1.01	-2.52	.50	4	1	.0	0	----	---	--	-	--	--	-	--	---	--
IDAHO																																
Boise	2842	927.9	1027.5	37	24	30.7	-.3	53	11	8	7	0	28	26	83	.84	-.45	.56	9	0	3.2	2	7.2	SE	38	W	4+	5	6	20	7.5	40
Idaho Falls 46W (R)	4933	853.4	1028.1	33	8	20.5	.2	47	4	-13	8	0	31	--	--	.15	-.60	.06	5	0	1.5	1	4.7	---	a30	WSW	6	-	-	--	---	--
Idaho Falls 42NW (R)	4790	------	------	31	5	17.9	.1	48	13	-15	8	0	31	--	--	.10	-.51	.05	3	--	----	--	5.5	---	a33	SSW	6	--	--	--	---	--
Lewiston	1413	969.9	1022.9	44	29	36.2	2.2	60	10	10	7	0	22	--	--	.84	-.46	.55	6	0	.5	1	----	---	--	-		1	6	24	8.5	--
Pocatello	4444	867.9	1026.9	36	19	27.2	.4	49	4	3	7	0	28	11	81	.55	-.59	.21	7	0	3.0	1	10.1	SW	42	W	11	3	8	20	7.7	43
ILLINOIS																																
Cairo (U)	314	1005.1	------	52	38	45.3	5.6	71	6	27	18	0	8	--	--	3.04	-.29	1.14	10	1	T	T	9.4	---	26	NW	28	9	4	18	6.8	41
Chicago	610	992.9	1016.5	39	27	32.8	4.8	62	5	13	13+	0	23	28	81	1.26	-.69	.57	11	0	8.5	4	9.7	WSW	38	SW	10	2	6	23	8.4	29
Moline	589	994.2	1017.1	37	21	28.9	2.0	61	4	-8	13	0	28	24	82	1.24	-.33	.44	13	0	6.5	3	10.2	W	37	SW	10	3	1	27	8.4	26
Peoria	654	994.9	1017.2	38	25	31.8	3.2	63	5	7	13	0	25	27	83	1.90	-.14	.59	12	1	9.1	6	11.3	S	31	S	10	2	3	26	8.5	25
Springfield	589	994.2	1018.0	41	28	34.5	3.9	67	5	13	13	0	22	30	83	2.63	.60	.82	13	0	1.9	2	11.9	SSW	36	S	5	2	8	21	8.2	30
INDIANA																																
Evansville	383	1002.0	1018.1	51	35	42.6	5.7	70	6	25	1+	0	17	36	77	2.74	-.44	1.30	12	0	T	T	9.6	SW	27	S	6+	2	9	20	8.0	25
Fort Wayne	801	984.8	1016.1	40	29	34.7	5.9	60	5+	15	30	0	23	31	85	2.39	.13	.81	15	0	9.2	4	12.4	SW	34	SW	5	2	2	27	8.7	25
Indianapolis	793	989.5	1017.3	46	32	38.8	7.7	69	6	15	30	0	20	33	82	3.86	1.07	1.66	12	1	3.2	2	12.7	SW	42	SW	5	2	2	27	8.7	33

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature												Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		ø Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb	°F	°F	°F	°F.	°F		°F.				°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10	%
INDIANA (Cont'd.)																																
South Bend	768	987.1	1015.8	39	28	33.6	5.8	61	5	14	13	0	23	29	85	1.43	-0.85	0.45	16	1	13.7	5	11.7	SSW	*35	SSW	10	2	2	27	8.9	--
IOWA																																
Burlington	694	991.2	1018.2	38	22	30.2	2.3	66	4	-4	13	0	27	25	80	1.23	-.45	.30	12	2	7.1	4	10.1	WNW	33	SW	10	3	7	21	7.7	47
Des Moines	948	986.1	1017.5	38	20	28.9	2.7	57	3+	-5	13	0	29	23	80	.46	-.68	.15	7	0	5.7	2	12.0	NW	33	SW	10	5	4	22	7.8	46
Dubuque	1065	990.5	1016.3	34	18	25.9	2.5	54	3	-5	13	0	29	22	82	1.10	-.25	.50	9	0	9.3	3	----	---	--	---	--	3	3	25	8.2	--
Sioux City	1094	974.9	1017.9	38	18	27.7	4.3	60	1	-9	13	0	29	18	68	.42	-.32	.30	4	0	6.7	5	13.6	NNW	47	N	11	8	6	17	6.5	51
Waterloo	870	------	------	34	16	24.6	1.5	50	3	-20	13	0	30	--	--	.41	-.76	.19	7	0	7.3	6	11.7	---	--	---	--	--	--	--	---	--
KANSAS																																
Concordia (U)	1375	967.2	-----	47	25	36.4	4.6	69	2	12	9	0	27	--	59	.10	-.51	.10	1	0	1.2	1	7.7	---	28	N	29	14	8	9	4.9	74
Dodge City	2594	928.5	1018.8	50	23	36.8	3.4	73	30	7	9	0	29	16	50	T	-.50	T	0	0	T	T	14.1	WNW	42	NW	28	15	8	8	4.3	70
Goodland	3645	888.6	1018.6	48	20	34.0	5.4	64	3+	1	8+	0	31	20	63	.17	-.30	.08	3	0	3.8	2	11.6	WNW	*32	NNW	28	13	12	6	4.2	--
Topeka	879	982.1	1019.0	45	25	34.9	2.7	70	2	11	9	0	25	26	74	.76	-.40	.28	9	1	2.6	1	10.8	N	41	S	10	7	9	15	6.2	48
Wichita	1321	968.2	1018.5	48	26	37.2	1.7	69	30	13	9	0	26	26	70	.39	-.71	.26	7	0	.8	T	12.4	NNW	35	N	12	8	10	13	5.9	60
KENTUCKY																																
Lexington	979	981.5	1017.9	52	37	44.4	9.5	69	4	22	29	0	13	39	82	4.52	.84	1.28	15	0	.1	T	12.2	SSW	--	---	--	5	5	21	7.8	--
Louisville	474	998.0	1017.4	52	37	44.7	7.8	72	6	23	29	0	12	38	77	2.74	-.56	1.05	11	1	T	T	10.7	SW	29	SW	2	5	4	22	7.8	34
LOUISIANA																																
Baton Rouge	64	1017.6	1020.6	71	49	60.2	6.6	82	7	31	1+	0	3	51	77	4.58	-.67	1.62	8	3	.0	0	8.4	SSE	--	---	--	12	4	15	5.5	--
Lake Charles	12	1018.6	1020.0	69	51	60.0	6.0	79	5+	33	10	0	0	53	82	10.43	4.67	4.30	7	4	.0	0	7.5	S	*32	SSE	22	13	2	16	5.6	--
New Orleans (U)	9	1018.0	------	71	55	62.9	5.8	82	7	38	10	0	0	--	--	6.74	2.16	3.00	7	3	.0	0	5.8	---	20	SW	19+	12	8	11	4.7	59
New Orleans	3	1018.3	1020.4	71	51	61.1	5.0	80	7+	36	1	0	0	53	79	6.49	1.82	2.60	7	4	.0	0	8.0	S	*28	SSW	22	12	5	14	5.3	--
Shreveport	252	1010.2	1019.4	66	44	54.6	5.4	82	5	27	10	0	5	44	72	1.54	-3.29	.42	9	2	.0	0	9.7	S	--	---	--	13	2	16	5.5	57
MAINE																																
Caribou	624	989.0	1014.6	24	5	14.6	.0	42	12	-17	31	0	31	9	77	2.13	-.10	.90	19	0	29.0	20	10.0	NW	*46	W	30	2	7	22	8.2	--
Portland	61	1011.3	1015.4	36	20	27.5	2.4	52	12	-8	30	0	29	21	75	3.35	-.44	.58	20	0	35.5	11	8.7	N	34	NW	18	5	8	18	7.4	32
MARYLAND																																
Baltimore (U)	14	----	------	54	39	46.5	7.7	74	7	24	30	0	6	--	--	3.31	.36	1.22	13	--	----	--	----	---	--	---	--	--	--	--	---	--
Baltimore	146	1012.3	1017.2	52	35	43.6	7.9	73	7	20	30	0	11	30	81	3.22	.27	1.09	14	0	.2	T	7.7	WNW	37	W	31	3	7	21	7.6	39
Frederick	294	---- -	------	51	32	41.5	6.5	72	7	17	30	0	17	--	--	2.84	-.08	1.03	15	0	.2	T	----	---	--	---	--	--	--	--	---	--
MASSACHUSETTS																																
Blue Hill Obs. (R)	629	990.8	1014.9	41	26	33.1	4.0	58	7	3	30+	0	26	--	79	7.86	3.96	1.89	18	0	22.7	10	15.3	WSW	51	NW	29	5	8	18	7.1	38
Boston	15	1010.2	1015.0	43	29	36.0	3.2	62	7	8	30	0	21	28	75	6.13	2.76	1.44	17	0	15.4	7	16.2	SW	*48	NW	18	3	10	18	7.4	47
Nantucket	43	1014.7	1015.2	47	33	39.9	4.7	56	13	12	30	0	15	35	82	4.67	.87	.86	19	1	6.0	5	12.2	WNW	57	W	29	5	7	19	7.6	32
Pittsfield	1153	971.1	---- -	38	22	29.9	5.1	59	7	-1	30	0	27	--	--	3.68	.63	.78	19	0	21.6	6	----	---	--	---	--	--	--	--	---	--
Worcester	986	978.4	--- --	38	23	30.3	2.9	59	7	0	30+	0	29	--	--	3.88	.26	.79	18	0	18.2	5	13.7	---	*40	WNW	30	3	10	18	7.5	--
MICHIGAN																																
Alpena (U)	587	991.2	-- ---	33	22	27.6	1.9	46	20	4	30	0	30	--	--	1.55	-.20	.32	20	1	13.4	4	10.5	---	31	S	10	4	2	25	8.4	23
Detroit	619	988.2	1015.6	41	29	34.9	5.4	62	6	11	30	0	19	29	79	2.19	-.01	.57	16	1	5.4	3	11.5	SW	33	WSW	11	1	3	27	9.0	23
Detroit (Willow Run)	722	985.8	1014.9	40	28	33.9	5.2	61	6	14	30	0	21	29	83	1.95	-.09	.41	15	1	6.0	4	11.9	SW	*29	WNW	31	1	3	27	8.9	--
East Lansing (U)	856	--- -	-- --	38	27	32.7	5.6	57	5	12	30	0	22	--	--	1.47	-.65	.48	19	0	3.9	2	5.8	---	14	W	9+	--	--	--	---	15
Escanabe (U)	594	990.2	- ---	31	16	23.6	1.2	41	20	-3	12	0	30	--	--	1.19	-.24	.35	14	0	10.3	6	10.1	---	31	NW	31	4	5	22	8.0	24
Flint	761	986.5	1015.0	37	26	31.6	5.3	54	6	8	30	0	22	27	83	1.35	-.55	.34	15	1	4.7	2	10.3	SSW	*29	SW	11+	1	4	26	8.8	--
Grand Rapids	681	989.2	1015.1	38	26	31.9	4.6	55	5	-2	13	0	25	28	85	1.29	-.88	.45	14	1	6.3	4	10.0	W	37	SW	11	1	2	28	9.2	23
Marquette (U)	677	985.8	------	31	17	24.3	1.2	49	20	1	12	0	31	--	76	2.11	.07	.40	22	0	28.6	19	8.9	---	38	SW	18	4	1	26	8.7	25
Muskegon	627	991.5	1015.4	37	27	32.1	2.9	52	5	1	13	0	22	27	83	1.70	-.23	.44	15	1	11.6	6	----	---	--	---	--	1	3	27	9.2	--
Sault Ste. Marie	721	990.5	1014.3	27	13	19.9	.0	42	20	-11	18+	0	31	18	89	1.71	-.59	.35	19	0	26.5	14	10.0	E	29	NW	11	2	3	26	8.9	12
MINNESOTA																																
Duluth	1409	971.9	1014.9	25	6	15.4	2.2	42	20	-20	17+	0	31	11	80	1.43	.23	.56	16	0	21.0	19	14.6	WNW	47	W	11	3	6	22	8.1	32
Intern'l. Falls	1179	972.6	1015.9	20	-1	9.4	.3	47	20	-26	12	0	31	3	72	1.26	.41	.36	19	0	16.2	11	11.7	W	--	---	--	4	5	22	7.9	--
Minneapolis	830	981.7	1016.8	32	15	23.9	4.5	48	2	0	12+	0	30	18	78	.20	-.65	.12	6	0	2.1	1	11.6	NW	47	NW	11	5	7	19	7.5	3
Rochester	1017	978.0	1016.5	32	14	23.1	4.1	46	3	-13	13	0	31	18	79	.32	-.70	.14	6	0	3.6	2	10.8	WNW	--	---	--	2	10	19	7.9	--
St. Cloud	1034	976.3	1015.8	30	10	20.2	4.7	47	2+	-8	17	0	31	14	75	.33	-.36	.09	9	0	3.4	2	7.7	W	--	---	--	5	7	19	7.5	--
MISSISSIPPI																																
Jackson	305	1007.8	1020.0	67	45	55.9	6.9	83	7	27	1	0	6	46	76	5.03	-.57	2.67	12	3	.0	0	7.2	S	33	NW	9	13	2	16	5.7	4
Meridian	294	1006.1	-- ---	69	43	56.0	7.8	80	7	25	1+	0	11	--	--	3.43	-2.11	1.86	9	2	.0	0	----	---	--	---	--	13	5	13	5.2	--
Vicksburg (U)	234	1010.3	------	66	48	56.9	6.4	79	7+	31	10	0	1	--	--	6.82	1.44	2.04	10	1	.0	0	8.3	---	26	S	12	11	3	17	5.7	4
MISSOURI																																
Columbia	778	988.8	1018.1	45	27	36.0	2.9	70	5	11	18	0	22	29	78	3.00	.93	.90	9	1	2.0	2	9.4	WSW	34	NW	28	8	5	18	6.5	4
Kansas City	741	983.1	1018.9	45	28	36.8	3.1	70	2+	14	12+	0	18	28	72	1.60	.10	.57	7	1	3.9	2	10.3	SW	40	SW	4	8	6	17	6.4	4
St. Joseph	809	------	---- -	43	24	33.7	2.5	69	2	6	9	0	28	--	--	.86	-.53	.49	6	1	3.8	2	10.9	---	*31	SW	4+	7	6	18	6.5	--
St. Louis (U)	465	997.0	---- -	47	33	40.0	3.8	72	5	18	18	0	17	--	--	3.91	1.48	1.88	11	1	.7	1	10.4	---	42	S	5	5	6	20	7.5	3
St. Louis	552	997.0	1017.9	46	31	38.5	3.4	72	5	17	18	0	19	31	76	3.80	1.71	1.63	10	1	1.2	1	8.6	WNW	--	---	--	4	7	20	7.6	--
Springfield	1265	969.5	1018.1	49	30	39.4	3.7	73	5	17	18	0	20	32	80	2.76	.59	.98	9	1	.3	T	12.8	S	35	NW	28	9	7	15	6.3	4
MONTANA																																
Billings	3568	891.6	1019.0	41	21	30.9	3.7	63	2	-13	6	0	24	15	54	.51	-.07	.27	4	0	5.8	3	15.8	SW	57	W	10	7	11	13	6.4	6
Butte	5530	830.0	1023.1	37	14	25.3	6.8	55	3	-27	8	0	29	16	--	.32	-.29	.15	5	0	6.5	6	6.9	NW	*40	WSW	9	8	5	18	6.6	--
Glasgow (U)	2277	940.7	1018.1	32	10	20.9	5.1	53	29	-31	7	0	30	12	74	.26	-.27	.14	6	0	4.1	3	8.9	WNW	*53	NW	10	3	7	21	8.0	--
Great Falls	3664	887.9	1017.8	39	19	29.2	2.7	60	29	-20	6	0	20	12	55	.59	-.11	.28	6	0	10.3	5	22.1	SW	82	SW	10	6	8	17	7.2	6
Havre	2488	926.2	1018.0	37	14	25.5	5.1	63	29	-28	7	0	23	13	64	.46	-.10	.23	7	0	9.2	5	10.3	---	42	W	10	5	11	15	7.0	4
Helena	3893	874.4	1021.4	38	18	27.9	5.2	56	27	-21	6	0	27	15	63	.46	-.18	.17	6	0	5.4	3	8.8	W	45	SW	10	4	7	20	7.4	4
Kalispell	2965	------	------	35	21	27.9	3.2	49	3	-6	6	0	26	--	--	1.08	-.46	.26	14	0	5.8	3	----	---	--	---	--	1	4	26	8.7	-
Miles City	2629	922.1	1018.3	40	17	28.4	7.7	61	10	-15	7	0	28	15	--	.22	-.29	.07	6	0	1.5	1	11.2	WNW	*46	W	10	7	4	20	6.9	-
Missoula	3200	905.2	1023.2	38	22	30.0	6.4	60	3	-2	5	0	27	23	77	.99	-.04	.54	10	0	1.8	1	4.9	E	30	NW	4	2	5	24	8.5	3
NEBRASKA																																
Grand Island	1841	950.2	1018.4	43	20	31.8	4.8	67	2	5	12	0	31	19	64	.24	-.31	.13	4	0	2.7	2	12.9	WSW	--	---	--	12	9	10	5.1	-
Lincoln (U)	1166	------	------	44	25	34.5	5.4	66	3	8	9	0	26	--	--	.23	-.63	.12	3	0	2.5	1	11.2	---	34	S	18	13	5	13	5.4	6
Norfolk	1544	960.0	1017.7	40	17	28.6	4.9	63	3	-9	13	0	31	19	68	.21	-.57	.12	2	0	3.3	2	----	---	--	---	--	8	8	15	6.1	-
North Platte	2779	916.4	1018.5	46	16	31.2	4.0	63	3+	-2	9	0	31	19	68	.12	-.28	.06	4	0	1.3	1	8.8	WNW	35	N	28	9	14	8	5.2	7
Omaha	978	977.0	1018.4	42	22	32.4	5.0	63	2	4	13	0	28	22	69	.18	-.63	.13	3	0	2.5	2	11.5	N	42	N	28	8	10	13	6.4	5
Omaha, N. Omaha AP	1323	968.5	------	40	20	30.3	---	62	30	2	9	0	28	--	--	.19	----	.16	2	0	2.0	2	----	---	--	---	--	--	--	--	---	-
Scottsbluff	3950	879.1	1018.7	47	20	33.3	6.3	65	3	6	6	0	30	18	57	.14	-.29	.10	3	0	.9	1	12.0	WNW	*37	WNW	10	11	9	11	5.5	-
Valentine (U)	2587	922.8	---- -	44	18	30.9	5.0	69	3	0	6	0	31	--	--	.04	-.42	.04	2	0	.4	T	11.4	---	40	NW	27	8	9	14	5.9	6
NEVADA																																
Elko	5075	851.0	1028.3	42	10	26.1	-.8	54	3+	-19	8	0	29	17	74	1.08	.03	.56	6	1	3.7	3	2.8	WSW	*21	SW	4+	16	6	9	4.3	-
Ely	6257	813.1	1027.0	44	10	26.8	-.1	62	3	-12	8	0	31	11	55	.06	-.82	.06	1	0	.4	T	11.4	S	36	S	5	16	9	6	3.8	7
Las Vegas	2162	955.0	1022.2	60	32	45.8	-1.0	72	4	16	9	0	22	9	25	.00	-.58	.00	0	0	.0	0	8.3	W	*40	SSW	6	25	3	3	1.8	9
Reno	4397	868.3	1027.9	48	13	30.5	-2.7	62	3	0	8	0	29	17	62	.05	-.89	.05	1	0	.4	T	3.8	WNW	45	SSW	4	20	5	6	3.0	8
Winnemucca	4299	874.7	1028.4	46	10	28.1	-1.9	60	3	-16	8	0	29	17	65	.43	-.57	.22	5	0	3.3	3	5.4	SE	34	W	5	18	5	8	3.7	7

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature								No. of days		Average dew point	Average relative humidity	Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile			No. of days (sunrise to sunset)			Sky cover tenths sunrise to sunset	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 90° F or above	Min 32° F or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy		
	Ft.	Mb	Mb.	°F	°F	°F	°F.	°F		°F				°F	%	In	In	In			In	In	M p. h.		M p. h.			0–3	4–7	8–10	0–10	%
NEW HAMPSHIRE																																
Concord	339	1004.4	1015.6	36	19	27.0	3.0	52	12	7	31	0	31	22	80	4.56	1.75	0.73	20	0	38.1	17	6.4	NW	33	NW	18	3	10	18	7.5	34
Mt. Washington	6262	796.5	------	21	5	12.5	3.6	38	7	-33	30	0	31		92	5.41	-.44	.79	25	0	47.1	14	42.9	W	%140	W	30	2	2	27	8.9	21
NEW JERSEY																																
Atlantic City (U)	8	1014.4	------	52	39	45.2	7.0	67	8	23	30	0	9	--	-	4.15	.84	1.30	13	0	T	T	14.8	---	38	NE	11	3	8	20	7.9	38
Newark	11	1015.4	1016.5	47	33	39.9	5.9	69	7	15	30	0	11	34	80	3.22	.12	1.15	16	0	1.3	T	9.1	SW	•35	NNW	18	5	8	18	7.3	-
Trenton (U)	56	1009.0	1016.2	49	34	41.2	6.2	69	7	17	30	0	12	--	--	3.22	.44	1.08	15	0	.2	T	8.9		34	NW	30	5	9	17	7.1	40
NEW MEXICO																																
Albuquerque	5310	851.3	1021.4	50	23	36.3	.3	61	4	13	9+	0	28	13	41	.00	-.59	.00	0	0	.0	0	6.3	N	32	NW	8	20	6	5	2.8	85
Clayton	4969	846.3	1018.0	54	23	38.5	3.4	70	2	8	9	0	30	--	--	T	-.36	T	0	0	T	0	----	---	--	---	--	18	8	5	3.2	--
Raton	6379	806.0	1020.3	50	13	31.3	1.9	64	4	-4	9	0	30	--	-	T	-.35	T	0	0	T	T	----	---	--	---	--	18	7	6	3.4	--
Roswell	3612	895.7	1019.3	59	24	41.7	.9	72	6	10	25	0	26	19	45	.04	-.49	.04	1	0	T	T	7.7	---	50	NW	12	20	6	5	3.1	--
NEW YORK																																
Albany	277	1012.1	1015.8	38	23	30.4	4.0	56	7	1	30	0	27	26	82	3.59	1.42	1.09	16	0	28.1	11	8.5	S	36	NW	18	2	5	24	8.5	19
Binghamton	1601	954.3	1014.8	38	25	31.1	5.7	58	6	0	30	0	25	27	86	4.05	1.45	1.07	17	0	16.4	5	12.5	WSW	59	NW	13	0	4	27	9.2	11
Buffalo	693	986.4	1015.2	40	28	34.2	5.2	58	6	6	30	0	21	28	81	4.82	1.90	2.05	21	0	35.6	10	14.2	S	47	SW	11	0	4	27	9.0	23
New York (U)	10	1015.6		48	35	41.2	5.5	67	7	14	30	0	12	-	--	4.15	1.08	1.52	13	0	.3	T	13.6	--	61	NW	18	4	11	16	7.0	47
New York	19	1014.4	1016.5	48	35	41.6	5.9	68	7	15	30	0	10	33	71	4.07	1.07	1.40	15	0	1.2	1	13.2	WSW	52	NW	29	5	11	15	7.3	--
Rochester	543	995.4	1015.2	39	26	32.7	4.5	60	6	5	30	0	24	29	85	2.16	-.24	.55	21	0	17.7	4	13.1	WSW	35	NW	31	0	3	28	9.0	19
Schenectady	217	------	--- --	39	25	32.0	6.1	55	7	4	30	0	26	--	-	3.26	.83	.98	18	1	26.8	9		-	-	---		8	10	13	6.1	
Syracuse	424	993.4	1016.1	40	26	33.3	4.2	64	6	3	30	0	24	28	78	3.02	.28	.67	22	0	16.8	7	9.2	WNW	36	NW	31	0	5	26	9.0	7
NORTH CAROLINA																																
Asheville (U)	2203	------	------	60	39	49.3	9.1	75	7+	25	2+	0	11	--	--	2.96	.00	.84	9	0	.2	T	8.4	-	28	N	9	9	10	12	5.6	54
Charlotte	725	990.7	1019.2	64	42	53.1	10.1	76	4	25	1+	0	8	43	75	3.20	-.59	1.34	9	2	.0	0	8.9	SSW	40	N	29	9	9	13	6.0	60
Greensboro	891	986.7	1019.2	60	38	48.8	8.7	77	7	21	2	0	11	39	73	3.14	.03	1.83	7	1	T	T	8.0	SW	30	NW	29	8	8	15	6.2	62
Hatteras (R)	4	1018.2	1018.8	63	51	56.7	7.2	72	14+	33	1+	0	0	50	79	1.21	-3.88	.64	4	0	T	0	13.7	SW	43	W	29	6	12	13	5.9	59
Raleigh	433	1004.7	1018.7	62	40	51.0	8.6	78	7	22	26	0	10	41	74	3.28	-.01	1.64	6	2	.0	0	8.4	SSW	•25	WNW	29	9	9	13	5.9	56
Wilmington	30	1018.4	------	69	45	57.1	8.5	80	13	28	2+	0	5	--	-	1.30	-2.16	.45	8	0	.0	0	9.6	- -	34	NW	29	12	10	9	4.9	74
Winston-Salem	967	982.9	1018.7	60	40	49.8	9.2	77	7	25	26	0	9	39	71	4.09	.86	1.83	7	2	.0	0	8.5	SW	•23	NW	29	9	8	14	5.9	-
NORTH DAKOTA																																
Bismarck	1650	957.7	1017.7	30	11	20.6	5.1	56	10	-15	17	0	31	14	75	.26	-.14	.05	12	0	2.3	1	11.2	WNW	61	NW	10	5	4	22	7.6	48
Devils Lake (U)	1471	960.7	------	23	6	14.2	3.0	42	10	-22	17	0	31	--	--	.74	.26	.41	10	0	8.6	5	8.7	--	40	NW	11	6	5	20	7.3	43
Fargo	895	981.0	1017.4	26	8	16.7	3.8	49	2	-19	17	0	31	11	77	.31	-.29	.12	10	0	3.2	1	15.7	N	58	W	11	6	8	17	7.1	46
Williston (U)	1877	947.5	1017.9	29	10	19.6	3.9	48	1+	-24	6	0	28	11	67	.51	-.03	.17	11	0	5.2	3	7.1	-	47	NW	10	5	3	23	7.9	46
OHIO																																
Akron	1210	977.8	1016.7	43	30	36.4	6.3	66	6	7	30	0	20	32	82	3.13	.55	.92	19	0	16.5	6	12.6	SW	--	--	--	1	4	26	8.8	--
Cincinnati Obs.	761	------	------	50	36	43.0	8.0	71	6	21	30	0	13	--	--	2.98	.14	1.23	12	0	1.5	1	6.9	--	21	SW	11	--	-	--	---	34
Cincinnati	869	984.2	1016.8	49	35	42.0	8.4	70	6	18	30	0	14	35	77	2.56	-.27	1.10	13	0	1.2	1	11.0	SW	31	SSW	11	4	2	25	8.5	--
Cleveland (U)	663	------	------	45	33	39.1	6.2	70	6	18	30	0	16	--	--	----	---	.95	--	-	-	-	----	---	-	---	-	-	-	-	-	--
Cleveland	787	987.1	1015.5	45	32	38.0	7.1	68	6	15	30	0	18	33	84	2.70	.41	.89	20	1	11.4	3	15.1	SSW	34	NW	30	1	3	27	9.0	17
Columbus (U)	724	------	------	47	35	41.2	7.9	69	6	19	30	0	17	-	--	2.88	.44	1.21	11	-	4.6	2	- -	--	-		-	--	--	-	- -	--
Columbus	815	986.3	1017.0	48	34	40.8	9.1	70	6	17	30	0	17	35	82	3.21	.72	1.14	18	0	5.0	2	9.7	SSW	26	SW	11+	2	3	26	8.6	26
Dayton	1002	979.6	1016.8	46	33	39.3	7.6	70	6	14	30	0	17	33	80	3.05	.58	1.00	14	1	4.0	1	12.4	SSW	36	SW	11	2	2	27	8.7	36
Sandusky (U)	603	992.6	------	43	32	37.5	6.0	68	6	18	29+	0	17	-	--	2.29	.13	.58	18	0	9.0	3	8.5	--	32	SW	11	3	4	24	8.5	21
Toledo	676	989.9	1015.9	41	29	35.1	---	62	6	15	30	0	19	31	85	2.52	- -	.84	18	1	7.7	4	11.3	WSW	40	SW	11	2	3	26	8.6	26
Youngstown	1178	972.8	1016.3	43	30	36.6	6.6	66	6	12	30	0	21	32	85	2.49	.45	.68	20	0	15.5	7	12.5	SW	27	NW	30	1	4	26	8.9	--
OKLAHOMA																																
Oklahoma City	1280	974.3	1018.8	52	32	41.7	1.5	76	5	18	9	0	18	31	73	1.97	.49	1.00	6	1	1.6	2	13.7	NNW	35	NW	23	13	7	11	4.9	57
Tulsa	672	993.6	1018.4	52	33	42.5	1.7	77	5	19	9	0	15	33	74	2.38	.69	1.12	9	1	.4	1	9.9	N	34	S	4	8	8	15	6.2	56
OREGON																																
Astoria	8	1020.7	1021.1	48	36	42.4	-.3	54	17+	22	29	0	10	40	88	9.02	-4.19	1.99	20	1	2.2	2	7.4	SSW	•40	SSW	9	4	1	26	8.6	-
Burns (U)	4140	878.4	1025.7	41	18	29.6	1.9	54	2+	1	7	0	28	22	73	1.04	-.40	.77	9	0	1.5	1	----	---	--	--		9	10	12	5.6	--
Eugene	361	1010.2	1024.1	47	35	40.8	.2	59	12	27	2+	0	16		-	4.56	1.44	1.24	18	0	5.2	4	6.7	--	•28	W	11	1	6	24	8.8	-
Meacham	4050	------	------	38	26	31.9	2.8	49	2	6	6	0	28	--	--	5.13	.83	2.26	15	0	11.1	7	----	---	--	--	-	3	5	23	8.2	--
Medford	1312	977.0	1026.5	40	28	34.4	-4.1	59	13	17	7	0	21	33	93	2.32	-.81	.96	13	0	2.1	2	1.0	S	•17	SW	4	1	2	28	9.1	--
Pendleton	1492	968.2	1023.3	44	30	36.7	4.1	62	3	7	6+	0	18	30	79	1.27	-.42	.85	13	0	1.2	1	10.2	SE	•45	SW	10	4	5	22	8.0	--
Portland	21	1017.3	1022.9	46	35	40.7	-.1	58	11+	23	1+	0	13	37	87	3.64	-2.53	.67	17	0	2.6	2	8.9	ESE	34	S	9	1	3	27	9.2	12
Roseburg	505	1005.4	1024.4	48	34	40.7	-.5	62	12	25	28+	0	19	--	-	3.30	-1.63	.95	16	0	.8	1	3.1	---	17	S	6	0	7	24	8.8	18
Salem	195	1015.6	1023.2	46	34	40.1	-.9	59	11	18	6	0	14	38	91	2.94	-4.18	.67	17	0	8.2	5	8.0	S	•38	S	9	0	4	27	9.3	--
Sexton Summit (R)	3836	------	------	46	35	40.5	3.8	64	2	17	7	0	10	--	--	3.30	-1.40	1.06	15	0	7.7	6	----	---	--	---	-	7	5	19	7.0	--
PENNSYLVANIA																																
Allentown	376	1002.7	1017.2	45	29	36.8	5.7	63	7	14	30	0	21	31	82	4.74	1.72	1.74	14	1	1.1	T	10.5	ENE	-	---	--	3	8	20	7.6	--
Erie	732	------	------	42	30	36.0	5.3	61	6	12	30	0	19	--	--	2.81	.42	.87	18	1	10.2	20	9.7	---	--	---	--	0	2	29	9.3	--
Harrisburg	335	1003.1	1017.0	47	33	40.2	6.3	66	7	19	30	0	13	32	74	4.26	1.70	1.39	16	0	.7	T	6.8	WNW	34	NW	30	5	2	24	8.2	35
Philadelphia (U)	26	------	-----	50	37	43.4	6.0	68	7	23	30	0	8	--	--	2.69	-.08	1.10	14	--	----	--	----	---	--	---	-	--	--	--	---	--
Philadelphia	10	1012.0	1016.5	49	34	41.7	5.8	69	7	20	30	0	11	35	80	3.70	-1.03	1.33	14	0	.2	T	10.0	WSW	40	NW	29	4	8	19	7.8	37
Pittsburgh (U)	749	------	------	50	36	42.8	7.6	68	5+	14	30	0	13	--	--	3.43	.86	.86	19	--	7.5	--	----	---	--	---	--	--	--	--	---	17
Pittsburgh	1151	985.4	1016.4	46	33	39.4	8.5	66	5+	10	30	0	15	33	80	3.35	.84	.69	21	1	11.2	4	12.3	WSW	•35	WSW	11	1	5	25	8.7	19
Reading (U)	266	1004.4	1016.6	48	34	40.9	6.1	66	7	20	30	0	12	-	--	4.27	1.47	1.35	14	0	.1	T	9.1	---	38	NW	30	3	9	19	7.7	33
Scranton	940	981.7	1017.0	42	27	34.2	4.6	60	7	5	30	0	22	29	80	3.24	.87	1.26	19	0	5.6	2	8.5	WSW	38	NW	18	3	6	22	8.0	25
Shippingport (U)	736	------	------	47	32	39.6	---	67	5+	13	30	0	16	--	--	3.31	----	.81	18	1	10.8	6	3.1	---	%27	W	31	--	--	--	---	--
Williamsport	527	997.2	------	43	28	35.8	4.9	57	8	12	30	0	21	--	--	4.28	1.61	1.17	21	0	6.5	2	----	---	--	---	--	4	5	22	8.0	--
RHODE ISLAND																																
Block Island	110	1010.6	1014.9	47	33	39.9	4.8	59	13	16	30	0	13	--	--	3.49	.13	1.00	13	0	2.2	1	----	---		-	-	5	8	18	7.0	--
Providence	55	1009.6	1015.9	44	28	36.2	4.6	61	7	8	30	0	22	29	77	5.27	1.82	1.58	18	1	6.1	3	10.6	SW	•35	NW	29	5	11	15	6.9	45
SOUTH CAROLINA																																
Charleston (U)	9	------	------	68	51	59.2	7.0	78	13	33	30	0	0	--	--	1.29	-1.42	1.08	4	0	.0	0	8.9	---	29	W	29	14	9	8	4.4	76
Charleston	41	1018.6	1020.2	69	45	57.0	6.5	80	13	29	26	0	5	47	79	.95	-1.76	.40	4	0	.0	0	11.1	SW	--			8	12	11	5.2	--
Columbia	217	1011.2	1019.6	69	44	56.2	9.2	80	13+	27	2+	0	7	45	75	2.44	-1.15	1.61	5	1	.0	0	7.3	SW	23	SW	28+	12	7	12	5.2	77
Florence	146	1014.0	------	69	44	56.3	9.8	80	14+	27	30	0	6	--	-	2.52	-.73	1.22	6	1	.0	0	----	---				14	6	11	4.9	--
Greenville	1008	981.1	1018.8	63	43	52.8	8.7	75	8	25	30	0	8	41	69	2.72	-1.79	.92	8	1	.0	0	8.5	WSW	40	W	28	7	10	14	6.3	55
Spartanburg	801	------	------	63	42	52.7	8.8	75	6+	25	30	0	8	--	--	3.14	-.85	1.39	8	1	T	0	9.6	---	32	NW	29	--	-	--	---	--
SOUTH DAKOTA																																
Huron	1282	968.5	1017.5	35	15	25.2	5.6	52	10+	-5	13	0	31	19	79	.20	-.25	.14	3	0	3.4	3	11.2	NNW	54	NW	11	7	7	17	6.7	65
Rapid City	3165	900.4	1017.8	42	18	29.9	4.2	63	29	-12	7	0	29	18	64	.36	.02	.25	4	0	5.3	3	9.8	NNW	47	N	16	7	6	18	6.6	54
Sioux Falls	1420	963.8	1017.1	35	14	24.7	5.3	52	2	-12	12	0	31	15	67	.24	-.43	.20	3	0	3.8	4	10.9	NW	•46	WNW	11	8	7	16	6.6	--
TENNESSEE																																
Bristol	1519	963.5	------	57	38	47.5	8.8	70	5+	22	2	0	14	--	--	4.88	1.45	1.11	13	2	.5	T	----	---	--			--	--	--	7.1	--
Chattanooga	670	991.4	1019.4	62	41	51.4	9.3	76	8	20	1	0	11	43	77	5.12	-.19	2.17	9	0	T	0	7.6	S	33	NW	9	8	8	15	6.5	46
Knoxville	950	983.3	1019.1	60	43	51.4	10.4	73	7	28	1+	0	7	42	74	8.06	3.80	3.76	11	1	.4	T	9.6	WSW	36	SW	28	7	8	16	6.6	40
Memphis (U)	271	------	--- --	57	42	49.5	5.1	73	5+	28	10	0	4	--	--	3.79	-1.00	1.03	13	0	.0	0	----	---	--	---		--	--	--	---	--

See footnotes at end of table.

Table 2—Continued

State and station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)
												No. of days							No. of days		Snow, Sleet				Fastest mile						
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Max. depth on ground	Average hourly speed	Prevailing direction	Speed	Direction	Date	Clear	Partly cloudy	Cloudy	
	Ft.	Mb.	Mb.	°F	°F.	°F.	°F.	°F.		°F.		#		°F.	%	In.	In.	In.			In.	In.	M. p. h.		M. p. h.			0–3	4–7	8–10	0–10
TENNESSEE (Cont'd.)																															
Memphis	263	1004.0	1018.9	59	40	49.4	6.1	74	3+	26	1+	0	7	41	75	3.79	-1.30	1.21	12	2	0.0	0	10.4	S	33	N	28	9	3	19	6.6
Nashville	577	998.8	1018.9	59	42	50.3	8.7	74	3+	27	1+	0	6	43	79	6.53	2.47	3.04	17	2	T	0	8.5	S	27	NW	28	7	6	18	7.2
Oak Ridge (R)	905	985.0	------	59	43	51.0	12.2	72	8	27	1	0	5	--	--	10.31	4.65	3.42	10	4	T	T	5.7	---	29	---	24	6	10	15	6.7
TEXAS																															
Abilene	1759	957.3	1019.3	61	37	49.0	3.2	79	5	24	9	0	8	30	54	.98	-.39	.47	5	2	.0	T	11.4	SSW	--	---	--	16	5	10	4.1
Amarillo	3590	889.9	1018.1	57	27	42.1	4.8	72	2	12	9	0	26	16	42	T	-.67	T	0	0	T	T	11.1	SW	39	SW	16	20	4	7	3.4
Austin	615	998.3	1020.4	68	45	56.6	4.4	80	5+	33	14	0	0	42	63	2.76	.05	2.20	4	1	.0	0	10.0	WNW	49	NW	9	11	6	14	5.3
Brownsville	16	1016.9	1019.5	74	55	64.4	2.0	81	5+	43	9+	0	0	54	74	.05	-2.11	.03	4	0	.0	0	12.7	SSE	31	S	7+	7	12	12	6.1
Corpus Christi	41	1019.0	1019.9	72	50	60.7	1.9	83	5+	34	25	0	0	50	71	.90	-1.37	.82	2	1	.0	0	9.8	SSE	31	SE	7	9	5	17	6.3
Dallas	487	1000.3	1019.5	63	40	51.4	3.1	81	5	26	9	0	6	38	66	2.34	-.28	1.74	5	0	T	0	9.8	SSE	34	S	4	11	9	11	5.3
Del Rio	1091	985.1	1020.1	68	41	54.5	1.3	80	12	29	27+	0	4	32	47	.07	-.81	.04	2	2	.0	0	8.6	---	26	NW	8+	11	11	9	4.8
El Paso	3920	889.6	1020.4	57	32	44.6	-.2	68	2	20	27	0	16	22	46	.64	.15	.42	5	0	2.3	2	10.9	N	47	W	22	19	5	7	3.3
Fort Worth	544	998.6	1019.7	62	38	50.0	1.9	80	5+	24	9	0	8	37	66	2.08	-.40	1.31	5	3	.0	0	12.5	SSW	*35	SSW	4	13	7	11	5.1
Galveston (U)	7	------	------	67	55	60.8	3.8	75	7	39	10	0	0	--	--	6.15	1.89	1.96	8	--	.0	0	11.8	---	36	NW	9	--	--	--	---
Galveston	5	1018.0	1020.4	67	54	60.1	3.6	76	5+	40	10	0	0	53	81	8.27	3.45	2.44	8	6	.0	0	12.1	N	--	---	--	12	4	15	5.7
Houston (U)	41	1014.6	------	69	51	60.3	4.5	81	8	35	10	0	0	--	--	5.00	.37	1.95	8	5	.0	0	9.6	---	30	N	9	11	9	11	5.3
Houston	50	1017.6	1020.5	69	49	59.0	3.8	81	7	35	10	0	0	49	75	5.11	.65	1.42	9	5	.0	0	11.0	SSE	--	---	--	11	1	19	6.1
Laredo	500	1003.7	1019.3	73	48	60.6	1.3	87	7	34	27	0	0	45	60	.26	-1.18	.11	6	1	.0	0	9.3	SSE	*29	NNE	8	11	6	14	5.6
Lubbock	3243	905.2	1018.8	59	29	44.0	3.4	72	5	15	9	0	25	25	53	.30	-.36	.30	1	0	.0	T	13.5	SW	*38	WSW	4	18	5	8	3.7
Midland	2854	919.1	1019.4	61	34	47.5	2.1	75	5	24	25	0	16	27	50	.27	-.48	.15	5	2	T	T	7.8	WSW	*23	W	22	16	4	11	4.1
Port Arthur	16	1019.0	1020.4	69	50	59.4	5.3	80	7	34	10	0	0	52	80	12.47	7.00	6.24	11	6	.0	0	11.4	NW	33	SE	4	10	6	15	5.9
San Angelo	1903	951.6	1020.0	63	36	49.5	.7	80	5	26	24+	0	10	31	55	.49	-.64	.31	3	2	T	T	9.6	W	*31	NNE	12	18	3	10	3.9
San Antonio	792	994.6	1019.9	69	44	56.9	3.8	80	5+	32	14	0	1	39	58	1.10	-.82	.95	4	2	.0	0	8.0	N	43	NE	8	11	5	15	5.3
Victoria	110	1015.2	1020.0	70	49	59.5	2.7	83	5	37	10	0	0	46	65	2.30	-.77	1.65	5	2	.0	0	10.4	---	%47	N	8	11	3	17	5.9
Waco	500	998.3	1019.8	66	40	53.1	2.9	80	5+	28	10	0	6	38	62	1.94	-.80	1.31	3	1	.0	0	13.9	NNW	--	---	--	12	3	16	5.6
Wichita Falls	1020	982.1	1019.1	59	35	47.3	3.5	81	5	21	9	0	13	32	61	1.50	.03	.97	5	2	.0	0	10.1	S	*25	NW	28	16	7	8	4.1
UTAH																															
Milford	5028	849.6	1024.4	44	11	27.5	-.5	57	13	-15	9	0	30	--	--	.13	-.62	.09	2	0	2.4	2	----	---	--	---	--	18	7	6	3.4
Salt Lake City	4220	873.7	1027.0	40	20	30.0	-1.5	57	5	-3	8	0	29	22	76	1.67	.33	1.03	5	0	11.8	10	6.4	SSE	32	S	5	13	5	13	5.7
VERMONT																															
Burlington	331	999.8	1015.6	34	18	26.3	3.5	52	7	-6	30	0	28	19	75	1.80	-.08	.33	15	0	22.0	5	10.1	S	46	S	11	1	5	25	8.9
VIRGINIA																															
Lynchburg	947	982.9	------	57	38	47.7	8.8	77	7	23	26	0	11	--	--	2.88	-.27	.87	9	0	T	0	8.6	---	27	W	31	10	7	14	6.1
Norfolk	26	1017.2	1018.4	61	43	52.2	9.4	77	7	28	30	0	5	43	75	2.76	-.12	1.54	11	2	T	0	10.5	SSW	33	W	29	7	8	16	6.9
Richmond	162	1011.8	1018.0	59	39	48.9	9.4	78	7	24	30	0	11	40	74	3.98	1.09	1.87	10	1	T	0	7.5	SW	26	W	29	7	9	15	6.8
Roanoke	1174	975.1	1017.6	57	38	47.9	8.9	75	7	23	30	0	9	37	67	1.91	-1.22	.92	8	0	T	0	8.8	WSW	--	---	--	5	11	15	6.7
WASHINGTON																															
Olympia	190	1013.5	1020.8	46	35	40.3	.9	55	9+	21	6	0	11	36	86	9.36	.70	3.83	18	0	1.1	T	10.0	SSW	*38	SW	10	0	3	28	9.4
Seattle (U)	14	------	------	47	39	43.2	.1	56	9	24	6	0	6	--	--	3.59	-1.75	1.18	16	0	4.3	4	12.2	---	51	S	9	1	3	27	9.0
Seattle	14	1019.6	1020.6	--	--	----	---	--	--	--	--	--	--	38	84	----	----	----	--	--	----	--	8.7	SSE	--	---	--	--	--	--	---
Seattle-Tacoma	376	1006.8	1021.1	45	35	40.2	.4	54	9+	19	6	0	12	37	90	5.62	-.06	1.93	18	0	3.0	3	13.0	SSW	*39	SW	15	1	4	26	9.1
Spokane	2357	951.2	1021.8	36	26	30.7	1.6	50	10	6	6	0	23	27	86	1.22	-.99	.50	12	0	7.3	4	9.5	SSW	51	SW	9	3	3	25	8.6
Stampede Pass (R)	3958	880.8	1022.2	36	24	29.9	3.7	53	27	0	7+	0	28	--	--	27.07	12.41	7.01	22	0	48.0	29	----	---	--	---	--	3	1	27	8.9
Tatoosh (R)	101	1015.6	1018.5	46	40	42.9	-1.2	52	9	26	5+	0	4	40	88	14.23	2.19	3.53	22	0	4.3	T	20.0	E	63	SW	9	2	1	28	9.1
Walla Walla (U)	949	986.8	1023.7	44	32	38.0	1.7	61	3	9	6+	0	15	--	--	1.82	.01	1.04	13	0	.6	T	5.6	---	44	S	9	0	4	27	9.2
Yakima	1061	982.4	1022.8	39	23	31.2	.6	59	10	-2	7	0	27	25	80	.55	-.55	.35	2	0	4.5	4	4.1	WNW	*36	SSW	9	2	4	25	8.6
WEST VIRGINIA																															
Charleston	950	974.9	1017.1	56	38	46.9	8.8	73	6	22	30	0	10	36	68	5.73	2.75	2.08	14	0	2.2	1	8.2	SW	23	NW	13+	2	5	24	8.4
Elkins	1970	------	------	52	32	42.1	9.2	70	6	10	30	0	20	34	--	3.53	.40	.65	20	1	3.9	3	7.4	WSW	28	WSW	3	2	5	24	8.6
Huntington (U)	565	------	------	56	38	47.1	8.0	75	6	24	30	0	8	--	--	5.60	2.43	2.32	14	0	1.6	2	----	---	--	---	--	--	--	--	---
Parkersburg (U)	615	------	------	53	36	44.1	8.0	72	6	19	30	0	13	--	--	3.80	.90	1.25	20	0	2.7	1	5.9	---	21	NW	18	3	5	23	8.4
WISCONSIN																															
Green Bay	689	991.5	1015.2	31	14	22.5	2.4	40	3	-6	30	0	30	19	82	.87	-.39	.47	12	0	7.9	4	11.4	SW	43	NW	11	4	3	24	8.3
La Crosse	652	990.9	1016.2	32	17	24.6	4.1	45	3	-12	13	0	31	19	78	.53	-.69	.20	5	2	4.2	3	8.1	NW	*27	W	11	0	9	22	8.6
Madison	857	979.3	1016.1	34	17	25.7	2.7	54	5	-11	13	0	28	22	82	1.01	-.39	.40	5	1	9.4	5	10.3	NW	30	NW	12	1	8	22	8.4
Milwaukee	672	989.8	1015.9	36	21	28.1	2.4	58	5	-3	13	0	28	24	82	1.03	-.45	.35	8	1	10.6	6	13.4	WNW	42	S	10	2	9	20	8.1
WYOMING																															
Casper	5322	836.8	1019.0	37	19	28.4	2.9	51	3	-10	8	0	28	16	61	.59	-.06	.40	5	0	7.9	5	21.4	SW	*52	SSW	10+	11	9	11	5.5
Cheyenne	6131	810.0	1018.0	43	23	32.7	4.0	57	3+	5	8	0	27	15	51	.41	-.11	.21	6	0	4.0	3	18.0	WNW	47	W	8+	11	12	8	4.8
Lander	5563	835.4	1021.3	38	14	25.9	5.5	55	27	-8	7+	0	31	14	63	.33	-.16	.19	4	0	5.8	4	5.4	---	56	W	10	12	11	8	4.7
Sheridan	3942	884.2	1019.1	44	17	30.2	6.2	65	29	-13	6+	0	30	15	58	.23	-.44	.12	4	0	4.3	2	8.8	WNW	57	W	10	9	6	16	6.2
PACIFIC AREA																															
Canton Island	9	1007.8	1008.1	88	79	83.2	.2	90	17	75	16	1	0	72	72	.12	-.83	.12	1	0	.0	0	15.3	E	*28	NE	10	0	10	21	7.8
Hilo	31	1012.5	1013.9	79	65	71.8	.4	85	8	59	3	0	0	64	81	10.37	-5.62	2.83	21	0	.0	0	8.6	WSW	*24	S	1	4	14	13	6.6
Honolulu	7	1014.2	1014.6	81	68	74.3	.4	84	31	59	2	0	0	63	71	2.32	-1.68	2.09	6	1	.0	0	8.4	ENE	44	W	1	14	11	6	4.6
Koror (R)	94	1005.1	1008.8	86	75	80.8	.0	90	9	73	3+	1	0	76	86	15.63	2.10	3.15	26	4	.0	0	----	---	--	---	--	0	2	29	9.7
Lihue	115	1008.8	1014.5	80	67	73.3	1.8	85	9	56	2	0	0	65	79	4.93	-.42	1.85	14	2	.0	0	9.2	NE	28	SW	9	6	19	6	5.5
Majuro Island	10	1007.8	1008.1	85	78	81.8	---	87	13+	75	13	0	0	74	78	3.44	----	.82	16	0	.0	0	----	---	--	---	--	0	15	16	7.5
Ponape (R)	119	1002.7	1008.1	86	75	80.7	-.2	90	3	72	29+	1	0	76	85	19.98	2.79	3.66	29	4	.0	0	----	---	--	---	--	0	5	26	9.2
Truk (Moen Is.)	8	1008.1	1008.5	85	78	81.6	.5	87	14+	74	3+	0	0	76	84	14.53	2.38	2.31	28	2	.0	0	----	---	--	---	--	0	2	29	9.7
Wake Island	11	1013.9	1014.6	83	74	78.1	-.9	85	13+	70	9+	0	0	66	68	.96	-1.11	.20	13	0	.0	0	13.4	ENE	*26	ENE	4+	17	10	4	3.8
Yap (R)	53	1007.1	1008.8	86	76	80.8	-.4	89	4+	72	28	0	0	76	85	14.27	4.12	4.23	21	0	.0	0	----	---	--	---	--	0	1	30	9.7
WEST INDIES																															
San Juan (U)	47	------	------	81	72	76.2	-.3	86	30	69	9+	0	0	--	--	4.12	-.71	.58	27	0	.0	0	----	---	--	---	--	--	--	--	---
San Juan, P.R.	15	1014.4	1016.1	82	69	75.6	---	85	1	65	11	0	0	68	80	4.18	----	.62	28	0	.0	0	9.3	ENE	31	E	15+	7	20	4	5.2
ALASKA																															
Anchorage	92	1003.1	1008.5	13	-4	4.3	-9.5	41	29	-25	12+	0	31	-3	66	.19	-.65	.09	4	0	2.7	10	3.0	NNE	*23	NE	7	11	6	14	5.6
Annette	110	1005.4	1009.6	40	31	35.4	-.7	49	29	17	5	0	17	32	86	18.13	9.02	3.42	25	0	19.3	8	14.2	S	*40	SE	7+	2	5	24	8.6
Barrow	22	1021.0	1021.6	-3	-16	-9.6	.8	21	4	-42	31	0	31	-18	63	.12	-.08	.03	10	0	1.2	7	10.3	WSW	31	SW	4	⁚	⁚	⁚	---
Bethel	10	1011.5	1012.7	-1	-12	-6.4	-13.6	30	4+	-31	20	0	31	-12	78	.05	-.80	.02	4	0	.4	4	9.7	NNE	*27	N	28	12	4	15	5.6
Cold Bay	90	1002.4	1005.8	31	22	26.8	-3.0	39	14+	11	11+	0	30	24	85	.19	-2.29	.08	6	0	.9	1	16.0	SSE	*48	ESE	21	2	2	27	8.8
Cordova	40	1002.4	1004.3	30	16	22.8	-3.8	43	27	-10	13	0	28	16	73	2.69	-4.27	.91	15	0	8.9	4	3.3	E	*23	ESE	27	5	4	22	7.7
Fairbanks	436	999.7	1018.8	-20	-36	-28.2	-19.1	10	6	-50	10	0	31	-35	69	.59	.09	.36	6	0	7.5	13	.6	N	*12	SSW	4	11	9	11	5.3
Juneau	15	1007.8	1008.7	29	18	23.5	-4.1	46	25+	-1	16	0	22	17	78	9.89	5.72	3.56	22	0	44.8	21	9.5	ESE	38	SE	28	2	3	26	8.7
King Salmon	44	1006.4	1008.2	11	-5	3.5	-10.7	38	28	-29	20	0	31	-4	71	.53	-.76	.33	7	0	5.2	3	10.9	N	*29	NNE	27	8	7	16	6.5
Kotzebue	10	1020.3	1020.6	-9	-21	-14.8	-11.1	14	6	-35	31	0	31	-21	73	.02	-.33	.02	1	0	1.4	16	8.5	ESE	*35	ESE	1	17	2	12	4.2
McGrath	334	1003.4	1017.4	-17	-30	-23.5	-16.2	24	6	-48	21	0	31	-32	61	.35	-.90	.19	6	0	4.4	13	1.9	N	*16	NNE	8	15	6	10	4.4
Nome	13	1018.3	1018.7	4	-11	-3.4	-11.1	27	5	-28	30	0	31	-12	69	.03	-1.13	.02	2	0	1.1	5	5.9	N	23	N	18	19	5	7	3.3
Northway	1713	950.9	1020.0	-23	-38	-30.7	-15.9	8	6	-64	11	0	31	--	--	.20	-.17	.14	4	0	1.9	28	----	---	--	---	--	11	7	13	5.6
St. Paul Island	22	1009.1	1010.2	27	20	23.1	-6.2	39	4	6	31	0	27	19	81	1.03	-.96	.18	17	0	9.0	6	----	---	--	---	--	2	0	29	9.2
Yakutat	28	1003.7	1005.0	31	20	25.6	-2.2	43	27	-1	15	0	24	22	88	11.63	-.68	3.76	20	0	10.9	4	9.6	E	*32	ESE	28	2	3	26	8.6

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

- * Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic recording wind instrument.
- + And also on a later date or dates.
- % Peak gust.
- a Maximum hourly average.
- # Number of days maximum 70° or above for Alaskan stations.
- ø Station pressures apply to elevation shown in Table 10b of the annual issue of this publication.
- ⁚ Sun below horizon continuously during December.

HEATING DEGREE DAYS

Table 3

(Base 65°F.)

DECEMBER 1956

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	322	822	1130
Mobile	200	493	623
Montgomery	273	672	864
ARIZONA			
Flagstaff	1071	2881	2967
Phoenix (U)	308	785	555
Phoenix	356	617	645
Prescott	819	1717	1720
Tucson	378	648	649
Winslow	999	2103	1903
Yuma	214	330	364
ARKANSAS			
Ft. Smith	599	1140	1273
Little Rock	492	957	1179
Texarkana	390	796	913
CALIFORNIA			
Bakersfield	541	883	819
Bishop	722	1561	1675
Blue Canyon	616	1771	2006
Burbank	200	335	580
Eureka (U)	577	2198	2033
Fresno	627	1109	1011
Los Angeles (U)	136	212	451
Los Angeles	188	293	697
Mt. Shasta (R)	882	2316	2326
Oakland	547	1281	1238
Red Bluff	545	955	942
Sacramento (U)	581	1000	980
Sacramento	639	1141	1072
Sandberg (R)	604	1385	1403
San Diego	156	266	496
San Francisco (U)	372	1224	1247
San Francisco	501	1242	1360
San Jose	439	854	861
Santa Maria	359	1160	1113
COLORADO			
Alamosa	1384	3627	3621
Colorado Springs	971	2350	2391
Denver	901	2094	2364
Grand Junction	1235	2438	2293
Pueblo	916	2035	2279
CONNECTICUT			
Bridgeport	839	1896	2059
Hartford	973	2372	2280
New Haven	872	2071	2163
DELAWARE			
Wilmington	727	1687	1841
DIST. OF COLUMBIA			
Washington (U)	594	1351	1604
Washington	638	1475	1630
FLORIDA			
Apalachicola (U)	152	341	475
Daytona Beach	169	334	288
Fort Myers	86	194	126
Jacksonville	165	361	473
Key West (U)	6	15	18
Miami (U)	49	99	53
Miami	46	83	60
Miami Beach	28	48	37
Orlando	113	250	222
Pensacola (U)	181	425	529
Tallahassee	223	504	606
Tampa	95	215	223
West Palm Beach	74	128	69
GEORGIA			
Athens	359	908	1109
Atlanta	324	814	1125
Augusta	300	732	835
Columbus	316	738	951
Macon	274	650	824
Rome	425	1054	1256
Savannah	232	562	675
IDAHO			
Boise	1059	2541	2340
Lewiston	884	2327	2247
Pocatello	1163	2919	2727
ILLINOIS			
Cairo (U)	608	1170	1465
Chicago (U)	927	1826	
Chicago	993	1962	2352
Chicago University	966	1955	
Moline	1109	2210	2434
Peoria	1026	1982	2323
Springfield	937	1830	2193
INDIANA			
Evansville	688	1541	1715
Ft. Wayne	935	2044	2382
Indianapolis	808	1773	2141
South Bend	966	2103	2442
IOWA			
Burlington	1070	2048	2334
Des Moines	1111	2197	2472
Dubuque	1207	2529	2801
Keokuk (U)	1003	1859	
Sioux City	1151	2309	2733
KANSAS			
Concordia (U)	879	1748	2048
Dodge City	869	1711	1951
Goodland	953	2172	2461
Topeka (U)	879	1624	1891
Topeka	925	1750	2027
Wichita	856	1597	1763
KENTUCKY			
Lexington	630	1504	1884
Louisville	624	1446	1733
Pikeville (U)	527		
LOUISIANA			
Baton Rouge	184	460	615
Lake Charles	189	415	593
New Orleans (U)	124	309	429
New Orleans	158	373	484
Shreveport	344	701	848
MAINE			
Caribou	1554	3941	3918
Greenville (U)	1400	3671	
Portland	1157	2914	2847
MARYLAND			
Baltimore (U)	567	1224	1537
Baltimore	655	1564	1818
Frederick	724	1811	1841
MASSACHUSETTS			
Blue Hill Obs. (R)	990	2388	
Boston	893	1978	2015
Nantucket	774	1882	2078
Pittsfield	1083	2841	2933
MICHIGAN			
Alpena (U)	1153	2931	2962
Detroit	929	2068	2333
Detroit(Willow Run)	957	2141	2383
East Lansing (U)	992	2229	
Escanaba (U)	1275	3068	3213
Grand Rapids	1018	2308	2640
Marquette (U)	1255	3150	3167
Muskegon	1013	2312	2593
S. Ste. Marie	1390	3501	3575
MINNESOTA			
Duluth (U)	1518	3792	3690
Duluth	1532	3769	3842
Internat. Falls	1722	4103	4223
Minneapolis	1267	2691	3015
Rochester	1293	2855	3144
St. Cloud	1386	3169	3483
MISSISSIPPI			
Jackson	298	705	882
Meridian	290	724	956
Vicksburg (U)	264	598	775
MISSOURI			
Columbia	893	1647	1973
Kansas City	866	1568	1875
St. Joseph	965	1825	2048
St. Louis (U)	769	1424	1703
St. Louis	816	1518	1805
Springfield	784	1522	1841
MONTANA			
Billings	1050	2492	2767
Glasgow	1363	3179	3458
Great Falls	1107	2749	2959
Havre (U)	1218	2927	3298
Helena	1145	3070	3349
Kalispell	1144	3320	3334
Miles City	1129	2655	3068
Missoula	1078	3098	3270
NEBRASKA			
Grand Island	1022	2145	2459
Lincoln (U)	938	1860	2250
Norfolk	1122	2345	2744
North Platte	1040	2396	2581
Omaha	1004	2000	2373
Scottsbluff	975	2433	2638
Valentine (U)	1051	2528	2730
NEVADA			
Elko	1199	3147	2905
Ely	1176	3115	2930
Las Vegas	590	1102	969
Reno	1063	2608	2426
Tonopah	937	2207	2241
Winnemucca	1138	2819	2612
NEW HAMPSHIRE			
Concord	1170	2924	2907
Mt. Washington Obs.	1623	5938	
NEW JERSEY			
Atlantic City (U)	605	1386	1597
Newark	767	1704	1912
Trenton (U)	728	1666	1852
NEW MEXICO			
Albuquerque	880	1990	1757
Clayton	815	1864	1991
Roswell	715	1425	1415
NEW YORK			
Albany	1066	2579	2583
Binghamton	1043	2680	2851
Buffalo	947	2177	2470
New York (U)	732	1606	1771
New York	716	1526	1732
Rochester	993	2335	2516
Schenectady	1015	2389	
Syracuse	979	2317	2369
NORTH CAROLINA			
Asheville (U)	481	1349	1633
Charlotte	365	947	1274
Greensboro	493	1291	1513
Hatteras (R)	259	532	788
Raleigh	428	1104	1304
Wilmington	265	659	869
Winston-Salem	466	1232	1458
NORTH DAKOTA			
Bismarck	1369	3240	3524
Devils Lake (U)	1574	3706	3903
Fargo	1494	3267	3604
Grand Forks	1603	3626	
Pembina	1640	3574	
Williston (U)	1401	3281	3566
OHIO			
Akron	877	2132	2298
Cincinnati (U)	604	1304	1711
Cincinnati	904	1803	1999
Cleveland	828	1867	2181
Columbus	745	1691	2139
Dayton	790	1772	2128
Sandusky (U)	844	1844	2116
Toledo	923	2128	2376
Youngstown	874	2137	2274
OKLAHOMA			
Oklahoma City	713	1316	1417
Tulsa	689	1239	1382
OREGON			
Astoria	696	2262	1961
Burns (U)	1093	2828	2829
Eugene	745	2069	1939
Meacham	1020	3046	3105
Medford	945	2204	1849
Pendleton	872	2211	2095
Portland (U)	711	1736	1627
Portland	746	2004	1817
Roseburg	746	1970	
Salem	765	2024	1815
Sexton Summit (R)	749	2226	2373
PENNSYLVANIA			
Allentown	864	2092	2205
Harrisburg	762	1841	1971
Philadelphia (U)	659	1404	1624
Philadelphia	718	1607	1791
Pittsburgh (U)	682	1593	1890
Pittsburgh	785	1921	2268
Reading (U)	741	1721	1871
Scranton	943	2371	2272
Williamsport	899	2130	2250
RHODE ISLAND			
Block Island	772	1805	1963
Providence	885	2129	2221
SOUTH CAROLINA			
Charleston (U)	194	460	658
Charleston	260	657	778
Columbia	283	723	978
Florence	275	694	1015
Greenville	372	986	1200
Spartanburg	374	978	1211
SOUTH DAKOTA			
Huron	1230	2751	3029
Pierre	1221	2672	
Rapid City	1083	2554	2858
Sioux Falls	1243	2676	3062
TENNESSEE			
Bristol	539	1350	1688
Chattanooga	416	1041	1380
Knoxville	415	1045	1454
Memphis	482	969	1248
Nashville	450	1045	1372
TEXAS			
Abilene	489	921	1048
Amarillo	702	1479	1730
Austin	285	535	646
Brownsville	89	197	218
Corpus Christi	180	336	365
Dallas	433	802	870
Del Rio	327	546	585
El Paso	624	1183	1086
Ft. Worth	468	863	890
Galveston (U)	154	301	402
Galveston	172	341	418
Houston (U)	189	363	465
Houston	220	424	509
Laredo	183	318	306
Lubbock	646	1332	1444
Midland	536	1029	
Port Arthur	203	438	587
TEXAS (Cont'd.)			
San Angelo	473	871	854
San Antonio	271	503	600
Victoria	212	392	408
Waco	378	707	754
Witchita Falls	549	1011	1181
UTAH			
Milford	1156	2679	2551
Salt Lake City	1077	2460	2279
VERMONT			
Burlington	1196	2868	2925
VIRGINIA			
Lynchburg	527	1395	1625
Norfolk	390	902	1257
Richmond	493	1236	1532
Roanoke	526	1393	1632
WASHINGTON			
Olympia	756	2335	2254
Seattle (U)	669	1837	1776
Seattle-Tacoma	760	2264	2163
Spokane	1055	2842	2750
Stampede Pass (R)	1081	3880	3831
Tatoosh Island (R)	675	2561	2480
Walla Walla (U)	830	2073	1966
Yakima	1044	2600	2476
WEST VIRGINIA			
Charleston	558	1419	1720
Elkins	700	1988	2295
Huntington (U)	548	1308	1597
Parkersburg (U)	643	1517	1824
WISCONSIN			
Green Bay	1311	3005	3125
La Crosse	1247	2605	2931
Madison	1216	2571	2846
Milwaukee	1139	2499	2663
WYOMING			
Casper	1131	2842	3021
Cheyenne	994	2652	2912
Lander	1204	2946	3339
Sheridan	1073	2699	3113
ALASKA			
Anchorage	1881	5556	4807
Annette	908	3168	3022
Barrow	2316	9113	8392
Bethel	2220	6401	5559
Cold Bay	1179	4434	
Cordova	1300	4603	4190
Fairbanks	2895	7571	6374
Juneau	1279	4015	3966
King Salmon	1907	5875	
Kotzebue	2480	7783	6630
McGrath	2752	7561	6378
Nome	2123	6780	5967
Northway	2975	8235	6963
St. Paul	1293	5021	4556
Yakutat	1210	4235	4071

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
	1-3									Minor storm reported in western Idaho.
SOUTH DAKOTA Entire State	1-13					8	4		Glaze	Icy highways caused 22 reported accidents; actual total considerably higher. Localities and dates were: 1st-3d Deadwood; 5th-6th Mobridge; 11th Deadwood and Britton; 12th Britton and Canton; 13th Rapid City.
NEW ENGLAND Northern and central portions	3						4	1	Snow	Numerous accidents blamed on hazardous driving conditions from snowstorm. Most accidents and injuries minor, but one $8,000 loss to truck near Guilford, Vt.
WASHINGTON Entire State	3-4				6				Snow and wind	High wind, heavy snow, and rapidly falling temperatures produced near-blizzard conditions in some areas of both eastern and western divisions of State. Highways in northern counties of west and in some areas of east blocked by drifting snow. Schools closed in several localities. Power- and communication lines in some localities east of Cascades damaged by accumulation of ice. Storm moved southward.
MONTANA Kalispell, Flathead County	4	4 a.m.						1	Wind	Strong wind broke tree limbs, interrupted power and telephone services, drifted snow, and hindered ground and air transport. Peak gusts 84 m.p.h., at Kalispell WBAS. Storm moved southwestward.
KANSAS Kingman and Reno Counties	4	12:30 p.m.	2-1/2	25	0	0	2		Tornado and wind	Small funnel came to ground 3 miles southwest of Penalosa, Kingman County. It followed fence row for some distance, tearing up part of fence and damaging a chickenhouse. Funnel moving northeastward observed quite high in air part of time and finally dissipated over southwestern Reno County.
KANSAS Wathena, Doniphan County	4	6 p.m.	1/4	50		1	3		Wind	Storm lasted only a few minutes. No funnel observed, but tremendous roar like heavy freight train heard and there was some evidence of tornadic action as windows blown out. Most damage to TV antennas, windows, and trees. Chimney blown down, portion of roof carried some distance away, trunk of a car torn off, and 2-wheeled trailer picked up and carried 40 feet. 1 person injured by flying glass. Skylight blown out. Storm moved northeastward.
MISSOURI Ballard, Bates County	4	7:30 p.m.	15	200	0	2	4		Tornado, wind, rain, hail, and electrical	Buildings damaged. Storm moved northeastward.
MISSOURI Montrose, Henry County	4	7-8 p.m.	10		0	2	4		Tornado, wind, rain, hail, and electrical	Buildings on 2 farms heavily damaged. Storm moved northeastward.
MISSOURI Slater, Saline County	4	8:30-9 p.m.	10-12		0	0	4		Tornado, wind, rain, hail, and electrical	Buildings on 5 farms damaged. Storm moved northeastward.
MISSOURI Centralia, Boone County	4	10:30 p.m.	8	400	0	0	5		Tornado, wind, rain, hail, and electrical	Farm buildings, trees, telephone lines, machinery, etc., damaged. Storm moved northeastward.
	4									Minor storms also reported at Clarke Fork, Hughsville, Salisbury, and St. Joseph, Mo.; in western Oklahoma; and in Box Elder County, Utah.
IDAHO Northern portion	4-6	P.m.4th-a.m.6th.					3		Snow and wind	Reports from Sandpoint indicated snow began evening of 4th, followed by strong winds that continued into morning of the 6th, with gusts reaching 55 to 60 m.p.h., at times. In vicinity of Coeur d'Alene wind and drifting snow closed several schools, toppled some trees, and caused a break in powerlines, necessitating closing of Ohio Match Company plant at Huetter .
MICHIGAN Cedar Creek Township, Muskegon County	5	4:30 a.m.				1	2	1	Electrical	Lightning struck rural home, knocked woman unconscious.
MONTANA Twin Bridges, Madison County	5	9 p.m.						1	Wind	Gusts as strong as 70 to 75 m.p.h. Some shingles blown from roofs and damage to trees. Storm moved southward.
	5									Minor storm also reported at Creston, Iowa.
MAINE, NEW HAMPSHIRE, and VERMONT	6	A.m.				Several	4	1	Rain and sleet	Freezing rain over wide areas of northern New England made roads hazardous and in some places impossible to travel. Described in Bangor, Maine, area to be worst road conditions in 20 years; icy pavements stopped traffic for several hours until sanding could be done. Many damaged vehicles and some minor injuries.
ARKANSAS Garfield (3-1/2 miles south of), Benton County	6	6:15-6:45 p.m.	3	2,500			4	1	Wind, hail, electrical, and rain	6 buildings destroyed or damaged. $4,700 damage due to lightning, 3 livestock killed by lightning. Hailstones 1 inch in diameter reported. Storm moved northeastward.
	6									Minor storm also reported at Pittsburg, Okla.

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
OREGON Western and north-central portions	6-7		300-400	*150-300	3	Several	4	2	Snow and glaze	Storm resulted in 4.5 inches of snow in downtown Portland and amounts ranging from 4 to 10 inches over rest of western Oregon. It produced extremely hazardous conditions for automobile travel in Willamette Valley, over several of coastal and Cascade routes and in Columbia Gorge. Large number of auto accidents and 3 traffic deaths attributed to storm conditions in these accidents. Several northwest Oregon schools closed for 1 to 2 days, and western Oregon logging operations generally halted. Snow downed a few power and telephone poles and/or lines in many areas of both eastern and western Oregon. In central Columbia Basin east of Cascades ice accumulated to diameter of 3 to 4 inches on power and telephone wires when several days of below-freezing temperatures accompanied by dense fog occurred, but generally damage not extensive. Storm moved eastward.
KANSAS Southeastern portion	7-8	Night							Rain, sleet, and glaze	During night of Dec. 7th and 8th sleet and freezing rain fell over much of area south and east of line running from Sumner County northeastward to Wyandotte County making roads and streets hazardous and resulting in many minor traffic accidents. Glaze reached thickness of 1/4 inch in some southeastern localities. Sleet 1-1/2 inches deep and this combination remained until afternoon of 10th over quite a portion of extreme southeast.
OKLAHOMA Entire State	7-8-9				8	65		1	Wind, glaze, and sleet	Light glaze developed over State night of 7th, followed by mixture of glaze and sleet late on 8th and 9th. 1 person froze to death. Severe driving conditions developed, causing hundreds of automobile accidents which resulted in 7 deaths and about 60 injuries. Several persons injured by falling on ice. Extensive damage resulted to utility lines, trees, and shrubs. Winds caused telephone poles, heavy with ice, to be blown over along 5-mile stretch of road near Tulsa. Heavy weight of ice and sleet collapsed airport hangar south of Oklahoma City, damaging 15 small planes.
ILLINOIS Macoupin, Madison, and Jersey Counties	8	Morning				Numerous	5	1	Glaze	Very heavy glazing over most of Macoupin, Madison, and Jersey Counties. Worst ice storm since 1924. Power and communication lines hard hit. 10,000 homes without electric service. Trees and shrubbery heavily damaged. Parts of other counties also affected. Ice began melting on 10th. Previous warm weather reduced ice accumulation on pavements.
ILLINOIS North-central area	8	Morning							Snow	5 to 8 inches of snow in band from Rushville northeastward to Peoria and Joliet. Highway traffic severely curtailed during snowstorm but rapid improvement later in the day.
MISSOURI Southern portion	8						6		Rain and sleet	Mixture of freezing rain and sleet left layer of ice on trees, powerlines, streets, and roads. Main area of damage bounded by Joplin, Elsberry, Farmington, and southwest corner of State. Thousands of trees damaged. Hundreds of telephone and powerlines downed. Damage in St. Louis area alone exceeded $250,000.
	8									Minor storm also reported in southern and central Iowa.
NEW ENGLAND Northern and central portions	8-9	Night and day			1	Numerous	5	1	Snow, rain, and sleet	Up to 10 inches of snow fell in north and lesser amounts, but preceded by freezing rain or sleet, in south seriously hampered traffic and caused many accidents. 1 person killed in Dalton, Mass. Numerous minor injuries, but toll minimized by small number venturing onto roads. Some trees broken by weight of snow and ice and a few phone and powerlines downed.
CALIFORNIA Southern, coastal, and desert counties	8-9					3	4		Wind and dust	Widespread but minor damage from typical Santa Ana wind condition created by high pressure over western plateau. Trees and powerlines blown down; highway traffic disrupted; windows broken; roofs damaged; numerous brush fires fanned by wind; auto windshields pitted by blowing gravel. Citrus fruits and foliage blown off trees and quality lowered by scarring; losses to turkeys from blowing gravel and suffocation. 1 person injured by flying glass from blownout store window and 2 persons injured in automobile accident caused by restricted vision from blowing dust. Winds in Fontana-Kaiser area, at about 200 feet off ground, reached 80 m.p.h., on 8th.
WASHINGTON Entire State	8-10				1		6		Wind and rain	Precipitation heavy in west. High winds and rapidly rising temperatures occurred over entire State. Runoff from melting snow in higher ele-

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
WASHINGTON (Continued)										vations and 4 to 8 inches of rainfall in 2 days caused all rivers west of Cascades to rise above flood stage. Slides and washouts blocked all rail traffic through Cascades. Stevens Pass and some highways on Olympic Peninsula closed by slides. Most flooding in lower valleys of west confined to pastures or farmland where crops had been harvested. Secondary and logging roads damaged extensively in some localities. Wind velocities reached their peak on 9th. 1 person drowned in Puget Sound when small boat capsized. Greatest wind damage occurred east of Cascades. Several buildings damaged or destroyed at Priest Rapids and Beverly. Windows broken in Kennewick and Spokane areas.
MONTANA Continental Divide eastward to North Dakota border	9-10	9 p.m. 9th-evening 10th					6	2	Wind	Gale to whole-gale winds began blowing late evening of 9th and continued to around sunset evening of 10th. Peak gust of 99 m.p.h., measured at Livingston CAA station, and chief aircraft communicator estimated that gusts reached 120 m.p.h., but were not observed. In Pondera County, gusts estimated as high as 125 m.p.h. Throughout storm area a number of buildings blown over, power- and telephone lines damaged, TV antennas blown down, billboards overturned, roofs damaged, storm doors and windows broken, trailer houses blown away, and damage inflicted to hay stacks. These winds were produced by a low-pressure area moving inland over British Columbia coast and then eastward and southeastward into southern Canada and northern Rocky Mountain and Plains States.
	9-10									Minor storm also reported in northern Idaho.
	10									Minor storm reported at Cedar Rapids, Iowa; and at Pollock, S. Dak.
NORTH DAKOTA Entire State	10-11		400				4	1	Wind, snow, and dust	High wind, maximum velocity at Bismarck 61 m.p.h., on 10th and 58 m.p.h., on 11th, occurred in all sections of State. The 61 m.p.h., at Bismarck was the fastest mile ever recorded in December in Bismarck. Blowing snow and blowing dust resulted from storm. Some buildings damaged, mostly at Belfield, Stark County. Storm moved northwestward.
	10-11									Minor storm also reported in Keeweenaw and Ludington areas, Mich.
OREGON Western, central, and northeastern portions	10-12		400+	*200-300	3		6	2	Wind and rain, with flooding	Warm rains following immediately after snowstorm of 6th-7th very heavy in some higher elevations of western and central Oregon. In their initial stage these were accompanied by high winds in many areas. These halted river traffic across Columbia River bar for most of 3 days and prevented operation of ferry service across Columbia River at Astoria for 24-hour period for first time in service's operation. Minor damage to power- and telephone lines in a few areas. Most serious result of this storm was heavy flooding in Willamette and Coquille Rivers and to a lesser extent in Umpqua system and in several streams of central and northeastern Oregon. In eastern streams rapid increase of temperatures in headwater areas together with heavy rains caused ice to break up and lodge against bridges and weirs downstream, damaging them and setting up ice jam that flooded considerable farm land and some basements in towns along them. Particularly heavy damage to railroad and highway roadbeds and bridges, some low lying farm land and a few buildings, government fish hatcheries and ranger stations, logging company plants, including serious loss of payrolls. Between 15 and 25 families evacuated. Estimated $1,085,000 of damage caused by flooding, the remaining $15,000 due to wind. Loss of 3 lives attributed to flood; 2 by drowning, and 1 through heart attack while fleeing from flood. Storm moved eastward.
	11									Minor storm at Park City, Utah.
TENNESSEE Nashville, Davidson County	11-14							1	Rain	4.50 inches of rain fell during 4-day period. Back yards and basements flooded in low-lying downtown areas.
TENNESSEE Oak Ridge, Anderson County	11-14						2	1	Rain and electrical	7.70 inches of rain fell during 4-day period. 2 automobile accidents due to slippery pavement; concrete-block retaining wall loosened and felled by water pressure in water-soaked soil.

See reference notes at end of table.

STORM DATA AND UNUSUAL WEATHER PHENOMENA

Table 4—Continued

DECEMBER 1956

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage By categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
KANSAS Eastern and north-central portions	12	Afternoon				2			Snow and ice	Light snow melting as it fell and then freezing on cold pavements resulted in thin film of ice making highways and streets dangerous. In Topeka 40 no-injury accidents reported from 1 p.m., to 10 p.m. 2 men injured in accident due to slippery pavement 8 miles east of Topeka.
IOWA Northern and eastern portions	12				1	6	4	1	Snow	Numerous traffic accidents on slippery roads; 1 fatality resulted.
	12									Minor storm also reported at Florence and Oakland, Ala.
TENNESSEE Columbia, Maury County	12-13							1	Rain, wind, and electrical	7.16 inches of rain fell during 2-day period. Water-soaked soil and wind caused collapse of concrete-block wall; main roads blocked by water for short periods; basements flooded and minor traffic accidents occurred on slick roads.
TENNESSEE Shelbyville, Bedford County	12-14						3	1	Rain	8.02 inches of rain fell in 3-day period. Many homes and basements flooded. Damage estimated at thousands of dollars.
TENNESSEE Knox County	12-14							1	Rain and electrical	5.82 inches of rain fell in 3-day period. Some highways flooded; major disruption to phone services; cement-block wall collapsed due to pressure of water in soil.
NEW YORK Central, northern, and eastern portions	12-16				9	Numerous		1	Snow, glaze, and rain	Series of weak low-pressure areas moving northeastward along coast brought snow and glaze to upstate sections with heavy rain in New York City area. 9 persons died, 4 in New York City from traffic accidents and 5 upstate, 1 falling from train on which he was working, and causes of other 4 deaths not known. Innumerable traffic accidents brought injuries of varying severity. Monticello had worst glaze storm in 12 years, with communication and powerlines downed. Ice also severe in Orange, Ulster, and Putnam Counties, with consequent damage to trees and power- and communication lines.
	13									Minor storm reported at Penacook, N. H.
NEW JERSEY Bergen, Essex, Morris, Passaic, and Sussex Counties	13-14	Late p.m.13th -early a.m.14th				6			Rain and sleet	Ice storm producing sleet and freezing rain swept east-northeast across State. Principal damages and injuries confined to pedestrians, motorists, their vehicles, and roads and highways.
NEW JERSEY Bergen, Morris, Passaic, and Sussex Counties	14	Late p.m.			4	Many	4		Rain and sleet	For second consecutive night freezing rain and drizzle affected northern New Jersey. Sussex County hardest hit by storm. Telephone and powerlines downed, vehicles and roads damaged. Some localities without electricity for as long as 11 hours. 4 persons killed and others injured as result of falling trees and wires, automobile accidents, etc. Storm moved east-northeastward.
SOUTH DAKOTA Todd County (western portion)	14	Evening			1	5	3		Fog	Low visibility blamed for accident in which 1 car struck rear of another.
PENNSYLVANIA Green and Washington Counties	14				1		2	1	Rain	Daylong heavy rain caused some small streams to overflow, causing minor property damage. Man killed when he slipped from bridge where he had been clearing debris.
CONNECTICUT Northwestern and north-central portions	14-15	8 a.m.14th-noon 15th			4	7	5		Snow, sleet, and rain	Storm began as sleet and snow early on 14th and changed to freezing rain evening of 14th. Widespread and severe damage to powerlines and trees in Litchfield, Hartford, and northern Fairfield Counties, with heaviest damage in western and northwestern suburbs of Hartford. Utility companies reported 200,000 customers without power and telephones for period of up to 4 days after storm. Extended loss of power curtailed water supplies dependent on pumps, endangered milk supplies due to stoppage of milking machines and coolers, affected poultry farms due to failure of heaters in brooders and hatcheries, and caused much discomfort in homes from loss of heat and electrical services. Casualties resulted from automobile accidents on icy highways. Southern and eastern Connecticut relatively unaffected. From standpoint of powerline and tree damage, storm termed, "worst since hurricane of 1938."
MASSACHUSETTS, NEW HAMPSHIRE (southern), and **MAINE** (southwestern)	14-15				4	Several	5	1	Snow, rain, and sleet	Heavy snows, from 2 inches in southern Massachusetts to over 1 foot in some northern areas, combined with sleet and freezing rain to produce worst storm of this winter season to-date. 3 persons

See reference notes at end of table.

Table 4—Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
MASSACHUSETTS, NEW HAMPSHIRE (southern), and MAINE (south-western) (Cont'd.)										killed in automobile accident attributed to storm in Massachusetts and 1 in New Hampshire; numerous other mishaps caused injuries and property damage in area. Trees and limbs, coated with ice and snow, toppled to break power- and phone lines in Massachusetts, most seriously in northeastern section. Ice coatings up to 1-1/2 inches thick reported near Topsfield, Mass., on trees and wires. Lack of high winds prevented major disaster.
	14-15									Minor storms also reported in northeastern Kansas; and in the Pocono Mountain area, Pa.
	15									Minor storm reported in Beadle and Miner Counties, S. Dak.
WASHINGTON Entire State	15-16								Wind	Small airplane damaged by high wind in Seattle. Trees and powerlines damaged in several localities. Greatest damage occurred along east slope of Cascades in vicinity of Priest Rapids. Several buildings and steel work of cofferdam damaged by wind. Tug boat used in construction of dam sank.
IOWA Entire State	15-25				3	16	4	1	Snow, ice, and fog	Hazardous driving conditions, during pre-Christmas travel season, resulted in numerous traffic accidents.
MASSACHUSETTS North Andover, Essex County	18	10:15 a.m.			0	0	2	1	Tornado (suspected)	Storm picked up wire from coil on the ground, lifting it aloft to short and burn electric transmission line serving North Andover. Some evidence of rotary motion. Storm moved southeastward.
	19									Minor storm reported in Beadle, Davison, and Sanborn Counties, S. Dak.
	21									Minor storm reported at Ragland, Ala.
LOUISIANA Avoyelles County	22	12:00 noon			0	0			Tornado (suspected) and rain	Reported by Alexandria radar; location given is uninhabited; nearest station reported only heavy rains.
LOUISIANA Amite (near), Tangipahoa County	22	4:55 p.m.			0	0			Tornado and rain	Funnel cloud aloft reported 30 miles south of McComb, Miss.; severe thunderstorm later in day at Franklinton probably part of same system.
SOUTH DAKOTA Clark (near), Clark County	22	Evening			5	2	3		Rain and sleet	Near Clark head-on collision attributed to ice-glazed highway.
KANSAS Northeastern counties	22	Night			1				Rain, sleet, snow, and fog	Localities in extreme northeastern counties reported fog, freezing drizzle, sleet, and snow mixed at times, the deposit of which left streets and roads icy. 1 woman killed near Beattie, Marshall County, when car skidded on ice.
	22									Minor storms also reported near Concord and Knoxville, Tenn.; at Lake Charles and in West Feliciana County, La.
ALABAMA Monroe to Tallapoosa Counties	22-23	11 p.m.-3 a.m.	90	30-100	0	1	5	1	Tornado	Tornado path straight line from Excel, Monroe County, to Reeltown, Tallapoosa County. Storm either mostly aloft or a succession of new tornadoes from same northeastward moving thunderstorm. Dipped successively at Excel and Burnt Corn in Monroe County, near Searcy and at Fort Deposit, Lowndes County; at Snowdoun, and near Mt. Meigs, in Montgomery County; and at Reeltown, Tallapoosa County. Dips at other places may have occurred in rather isolated country along path. Most of occupants of 1 demolished home would have been killed if they had not been away. Heaviest damage in Mt. Meigs area where 4 homes and 2 barns destroyed and 2 other homes damaged considerably. Windows blown in on windward sides of homes and blown outward on leeward side.
CALIFORNIA Southern coastal and desert counties	22 and 24-28				1		8		Wind and dust	Widespread minor structural damage from typical Santa Ana wind condition created by high pressure over western plateau. Trees, powerlines, and holiday decorations blown down; highway traffic disrupted by blowing dust; roofs damaged; citrus fruits and foliage blown off trees and fruit quality lowered by scarring. Wind-whipped, 5-day brush fire in Malibu area of Los Angeles County began on 24th and brought under control with decreasing winds on 28th, claiming 1 life, scorching about 40,000 acres of valuable watersheds, and destroying 67 homes for estimated total loss of $70 million. Winds in Fontana-Kaiser area, at about 200 feet of ground, reached 85 m.p.h., on 22d.

See reference notes at end of table.

Table 4–Continued

Place	Date	Time	Length of path, miles	Width of path, yards	Number of persons		Estimated damage by categories †		Character of storm	Remarks
					Killed	Injured	Property (exclusive of crops)	Crops		
GEORGIA Troup, Harris, and Pike Counties	23	Early a.m.		100	0	1	3	1	Tornado and rain	What was probably same small tornado struck parts of Troup, Harris, and Pike Counties. 1 residence severely damaged, 1 person injured and outbuildings and trees flattened northeast of West Point, Troup County, as storm moved along ground for about 4 miles. 110,000-volt power transmission line toppled. Minor damage caused near Chipley, Harris County. Several farm homes damaged about 3 miles west of Zebulon, Pike County, as storm hit that area about 6 a.m. Timber, telephone, and powerlines damaged in area. Tornado moved east-northeastward.
MASSACHUSETTS, MAINE, and NEW HAMPSHIRE	23				1	14	4	1	Snow, rain, and sleet	Snow, sleet, and freezing rain produced treacherous road conditions, especially in coastal areas. 1 person killed and 7 injured in skidding accident at Goshen, Mass., and 7 injured in Boston area. Many minor accidents, but toll minimized by warnings. Public transportation experienced delays. Some power and phone outages resulted from breakage of ice-loaded lines and felling of overloaded trees, particularly in area just south of Boston, Mass.
	24-25									Minor storm reported in northwestern Lower Michigan.
ALASKA Juneau and Douglas areas	27-28						4	1	Rain, wind, and thaw	Damages resulted principally from combination of heavy rain and rapid thawing of snow accumulation on mountain slopes surrounding affected area. Losses included washed out roads, severe local gullying, several landslides, flooded basements, and wind damaged roofs. Damage estimate breakdown: Public roads $6,000; Juneau streets and sewers $18,000; Douglas streets and sewers $4,000; and private homes and business establishments $6,000.
IDAHO Southern portion	27-31					1			Fog and rime (ice)	Heavy valley fogs continued intermittently in Boise, Payette, and Snake River Valleys last 5 days of month. Multiple car collision on highway near Emmett (in fog) totally wrecked 2 cars, damaged 2 others , and injured 1 woman. Telephone services seriously affected between Twin Falls and Burley-Rupert areas on 28th and on 31st; service from Twin Falls to Boise cut, and 7 lines to Salt Lake City out of order.
RHODE ISLAND Entire State	29	2-11 p.m.				2			Wind and snow	Coastal storm with winds up to 45 m.p.h., and falls of 3 to 7 inches of heavy snow caused widespread power failures and snarled traffic throughout State. Power and telephone services out until midday of 30th. Skidding accidents on slippery highways injured 2 persons and damaged numerous automobiles and trucks.
MASSACHUSETTS, NEW HAMPSHIRE, and MAINE	29-30				12	Several	5		Wind, rain, sleet, snow, and electrical	Northeast storm accompanied in successive order by rain, sleet, and snow began on 29th, ending its force in early a.m., on 30th. Snow depths ranged from 4 to 14 inches, bringing with it traffic tieups, canceled flights, power losses, injuries, and deaths. Lightning prevalent during evening of 29th and observed from New Bedford, Mass., to Portsmouth, N. H. Thousands of homes darkened during height of storm as powerlines were felled by ice, snow, or falling limbs. Hundreds of motorists stranded as high winds caused drifting snow; numerous accidents resulted and some injuries sustained. 200 plows and 700 men put to service in Boston area alone. A record low pressure of 28.50 inches for December established at Nantucket at 9:20 p.m. New Hampshire hit with snow, winds, and subzero temperatures. Concord reported second largest snowfall since 1876, while Maine hit with freezing rain in Bar Harbor area and snow and subzero temperatures prevailed over rest of Maine. Lightning reported to have struck home in Trescott, near Eastport, Maine. Snow removal costs for Massachusetts alone from this storm estimated to be in excess of $300,000.

* Miles instead of yards.

† Storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50
2	$50 to $500
3	$500 to $5,000
4	$5,000 to $50,000
5	$50,000 to $500,000
6	$500,000 to $5,000,000
7	$5,000,000 to $50,000,000
8	$50,000,000 to $500,000,000
9	$500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

DECEMBER 1956

The most important flooding during December occurred in the North Pacific Coastal Drainage. The flooding was severe on several streams in the Willamette Basin in Oregon and in coastal streams in Washington. Flooding reported elsewhere was mostly light.

ATLANTIC SLOPE DRAINAGE

Moderately heavy rain in eastern North Carolina from the 11th through the 16th caused minor local overflows on the Neuse River on the 17th and 18th and on the Cape Fear River on the 18th. The rainfall during that period averaged 1.9 inches over the Neuse Basin and 1.4 inches over the Cape Fear River Basin. No flood damage was reported.

Light flooding occurred on the Ocmulgee River at Macon, Ga., from the 24th to the 26th and at Abbeville, Ga., from the 30th into January. It was still rising at Abbeville on the 31st. Only minor damage was reported.

EAST GULF OF MEXICO DRAINAGE

Heavy rains from the 22d to the 24th caused light flooding on the Choctawhatchee River at Caryville, Fla., from the 26th to the 30th. No damage was reported.

Slight flooding occurred on the lower Tombigbee River in Alabama late in December from the rains that fell on the 21st, 22d and 23d. The runoff from these rains was high as the ground was saturated from the unusually heavy rains on the 12th and 13th which produced amounts of as much as 6.5 inches.

The flooding in the Bogalusa, La., area on the Pearl River between the 25th and the 27th was due to heavy rains (2 to 5 inches) between the 21st and 23d. No damages resulted.

MISSISSIPPI SYSTEM

Missouri Basin.--On December 6 the channel of the Beaverhead River at Twin Bridges, Mont., froze over and caused minor flooding in the town. Several houses were inundated, but damage was mostly minor. A contributing factor to the flooding was the construction of a number of small dams by ranchers to supply stock and irrigation water, and when temperatures dropped below zero the slow moving water froze and the channel became ice choked.

Ohio Basin.--Moderate to heavy rains over the Monongahela Basin on the 13th and 14th in Pennsylvania and West Virginia resulted in flood stages being exceeded on the West Fork of the Monongahela and in the headwaters of the Youghiogheny River on the 14th and 15th. Many of the main roads and highways along the West Fork River were covered with up to 7.5 feet of water. Low-lying areas and highways in the Meyersdale-Confluence, Pa., sections of the Youghiogheny River Basin were under water.

This same storm caused flooding in the Little Kanawha River Basin from the 14th to the 16th, with flood crests up to 6 or 7 feet above flood stage. Flood damage was minor and was mostly to loss in wages and money expended for cleaningup work.

The minor flooding on the Cumberland River at Williamsburg, Ky., on the 15th resulted in no damage.

The flooding in the Tennessee Valley between the 13th and 16th was due to heavy rain from the 12th to the 14th. The rainfall averaged 3.5 inches over the eastern half of the basin above Chattanooga, Tenn., and slightly more than 5.5 inches over the western half. The heaviest rain occurred over the upper reaches of the Elk and Duck Rivers. The only flooding along the main stem occurred at Whitesburg, Ala. Damages from this flood were negligible and were confined mainly to the inconvenience of flooded secondary roads.

WEST GULF OF MEXICO DRAINAGE

Heavy rains between the 18th and 23d caused overflows on the Calcasieu and Mermentau Rivers and on the Nezpique Bayou between the 23d and the 28th. The runoff was high as the rains of the 12th to the 15th had thoroughly saturated the ground and had swollen the streams to about one-half bankful level. Damages were insignificant.

PACIFIC SLOPE DRAINAGE

Oregon Coast Drainage.--The minor flooding in the Rogue and Umpqua Basins in Oregon on the 11th and 12th was due to moderate to heavy rainfall (3 to 6 inches) in the headwaters on the 10th and 11th. Sharp rises occurred in all headwater streams. Elk Creek in the Upper Rogue overflowed its banks early on the 11th. No damages were reported.

Columbia Basin.--Severe flooding occurred in the Middle Fork of the Willamette, the McKenzie, and the Santiam Rivers and moderate flooding in the Willamette in the Harrisburg, Oreg., area between the 11th and 14th due to heavy precipitation from the 9th to the 12th plus rapid snowmelt. The South Fork of the Santiam reached its highest stage since 1945. There was also some flooding in the upper reaches of the Clackamas and some in the small west slope streams in the Mt. Hood, Oreg., area. There was also a notable increase in flow in the Deschutes River that flows north along the eastern base of the Cascades. Major damage occurred to railroad and Highway bridges and fills; also to highway roadbed and State fish hatcheries.

Washington Coast Drainage.--Moderate to major flooding occurred in most western Washington streams on the 10th and 11th from the heavy rains on the 8th and 9th. Most of the flooding was confined (4 to 8 inches) to pastures and farm lands where crops had been harvested. Livestock losses in the Snoqualmie Valley were light. Extensive damage occurred to secondary and logging roads in some mountain areas.

FLOOD STAGE DATA

Table 5 (All dates in December unless otherwise specified) DECEMBER 1956

River and station	Flood stage	Above flood stages -dates		Crest*	
		From–	To–	Stage	Date
	Ft.			*Ft.*	
ATLANTIC SLOPE DRAINAGE					
Neuse: Smithfield, N. C.	13	17	18	15.5	17
Cape Fear: Lock No. 2, Elizabethtown, N. C.	20	18	18	21.1	18
Ocmulgee: Macon, Ga.	18	24	26	20.1	25
Abbeville, Ga.	11	30	1/		
EAST GULF OF MEXICO DRAINAGE					
Choctawhatchee: Caryville, Fla.	12	26	30	13.2	27
Tombigbee: Lock No. 4, Demopolis, Ala.	42	27	27	42.3	27
Lock No. 3, Whitfield, Ala.	33	25	29	41.7	27
Pearl: Bogalusa, La.	15	25	27	16.25	26
MISSISSIPPI SYSTEM					
Ohio Basin					
West Fork: Weston, W. Va.	17	14	15	20.5	14
Clarksburg, W. Va.	7	14	15	9.1	14
Monongahela: Lock No. 5, Brownsville, Pa.	23	14	15	24.0	15
Lock No. 4, Charleroi, Pa.	24	14	15	27.3	15
Lock No. 3, Elizabeth, Pa.	23	15	15	23.0	15
McKeesport, Pa.	12	15	15	12.7	15
Lock No. 2, Braddock, Pa.	26	15	15	27.0	15
Little Kanawha: Glenville, W. Va.	23	14	15	29.2	15
Creston, W. Va.	20	14	16	25.5	15
Cumberland: Williamsburg, Ky.	21	15	15	21.2	15
First Creek: Knoxville, Tenn.	5	13	13	6.1	13
Elk: Fayetteville, Tenn.	8	13	14	10.1	14
Duck: Columbia, Tenn.	32	14	15	33.6	15
Shelbyville, Tenn. (nr.)	21	13	13	21.5	13
Shelbyville, Tenn.	719	13	13	720.2	13
Tennessee: Whitesburg, Ala.	560	15	16	560.7	16
WEST GULF OF MEXICO DRAINAGE					
Nezpique Bayou: Basile, La.	22	23	24	23.0	*24
Mermentau: Mermentau, La.	5	24	27	5.5	26
WEST GULF OF MEXICO DRAINAGE (Cont'd.)					
Calcasieu: Kinder, La.	16	24	28	19.05	26
Hineston, La.	16	25	25	16.15	25
Oakdale, La.	12	27	28	12.6	27
Hecker, La.	8	25	27	8.8	27
Old Town Bay, La.	4	23	28	5.6	27
PACIFIC SLOPE DRAINAGE					
Oregon Coast Drainage					
Rogue: Raygold, Oreg.	10	11	12	12.5	11
Umpqua: Winston, Oreg.	26	11	11	26.4	11
Columbia Basin					
McKenzie: Coburg, Oreg.	11	11	12	14.3	11
Santiam: Waterloo, Oreg.	20	11	11	21.2	11
Jefferson, Oreg.	13	11	14	20.6	11
Tualatin: Dilley, Oreg.	12	10	10	12.2	10
Willamette: Harrisburg, Oreg.	12	11	12	14.8	12
Washington Coast Drainage					
Satsop: Satsop, Wash.	34	10	10	36.0	10
Chehalis: Chehalis, Wash.	63	11	11	63.1	11
Grand Mound, Wash.	12	11	12	13.7	11
Green: Auburn, Wash.	63	10	10	65.1	10
Snoqualmie: Carnation, Wash.	51	10 16 18	14 16 19	55.5 53.3 53.0	10 16 18
Skykomish: Index, Wash.	9	9 13 15 19	11 13 17 19	14.6 11.6 11.8 9.1	10 13 17 19
Snohomish: Snohomish, Wash.	23	10 16	14 19	28.2 27.0	10 16
Skagit: Concrete, Wash.	26	10	10	26.6	10
Stillaquamish: Arlington, Wash.	16	9	10	19.0	9

* Provisional

1/ Continued at end of month

RAWINSONDE DATA

Average monthly values

Table 20

ALBANY, N. Y.
(1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	-1.4	83	261	2.5
1,000	31	130			276	3.5
950	31	544	-2.0	74	269	7.4
900	31	967	-3.3	74	270	12.4
850	31	1,419	-3.8	68	274	19.0
800	31	1,897	-4.3	62	274	23.5
750	31	2,410	-6.0	61	273	29.1
700	31	2,943	-8.1	61	272	33.6
650	31	3,519	-10.8	59	268	37.9
600	31	4,127	-14.2	55	266	42.0
550	31	4,782	-17.6	48	263	46.8
500	31	5,489	-22.2	45	265	51.5
450	31	6,265	-27.4	41	265	59.4
400	31	7,094	-33.2		266	64.3
350	31	8,018	-39.8		264	70.3
300	31	9,054	-47.1		267	75.2
250	31	10,241	-53.6		265	82.4
200	30	11,668	-57.9		272	78.7
175	30	12,507	-58.1		272	76.5
150	30	13,477	-58.3		271	69.2
125	30	14,617	-60.3		270	64.3
100	28	15,998	-61.6		270	55.6
80	28	17,372	-63.4		272	50.1
60	26	19,129	-63.2		268	44.5
50	23	20,240	-63.9		274	43.5
40	16	21,594	-63.9		274	42.9
30	15	23,362	-63.7		274	48.2
20	7	25,842	-62.9			
15						

ALBUQUERQUE, N. MEX.
(840 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	3.5	35	110	1.0
1,000	31	182				
950	31	617				
900	31	1,062				
850	31	1,527				
800	31	2,020	3.7	34	301	4.7
750	31	2,548	1.0	35	293	8.0
700	31	3,093	-2.1	34	300	9.9
650	31	3,684	-5.6	32	302	12.0
600	31	4,302	-9.0		300	13.8
550	31	4,968	-13.1		291	17.1
500	31	5,689	-18.3		299	17.1
450	31	6,476	-24.3		300	15.2
400	31	7,314	-30.6		299	16.3
350	31	8,247	-37.6		304	17.7
300	31	9,291	-45.6		302	15.9
250	31	10,483	-52.9		302	21.4
200	31	11,904	-56.9		284	21.8
175	31	12,748	-57.5		285	25.4
150	31	13,716	-59.3		277	27.8
125	31	14,849	-62.3		286	26.0
100	31	16,213	-65.5		293	21.6
80	30	17,566	-65.2		301	17.3
60	27	19,327	-64.1		323	11.7
50	22	20,447	-62.8		322	11.8
40	20	21,819	-61.9		337	12.0
30	11	23,605	-60.5			
20						
15						

AMARILLO, TEX.
(893 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,099	4.9	39	242	3.9
1,000	31	154				
950	31	580				
900	31	1,030				
850	31	1,502	7.9	34	267	10.9
800	31	2,000	5.3	36	282	11.3
750	31	2,530	2.4	35	291	12.8
700	31	3,078	-.7	32	293	14.6
650	31	3,670	-4.1	30	288	17.5
600	31	4,292	-7.9		278	18.1
550	31	4,963	-12.3		275	22.1
500	31	5,685	-17.4		273	23.5
450	31	6,473	-23.5		269	27.6
400	30	7,313	-30.1		268	32.1
350	30	8,250	-37.3		267	35.4
300	30	9,298	-44.9		265	42.3
250	30	10,496	-52.2		262	44.3
200	30	11,921	-57.2		265	46.2
175	30	12,765	-57.8		264	46.4
150	30	13,733	-59.7		266	44.1
125	30	14,869	-61.8		271	40.4
100	30	16,239	-65.1		268	32.8
80	27	17,600	-65.4		272	27.6
60	24	19,359	-63.9		282	15.7
50	23	20,478	-62.9		283	17.1
40	21	21,862	-61.3		284	16.3
30	20	23,652	-60.8		284	17.1
20	15	26,184	-58.4		285	23.5
15	10	27,990	-57.6			

ANCHORAGE, ALASKA
(1003 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	-13.9	64	46	2.3
1,000	31	53			18	5.4
950	31	453	-9.7	57	22	9.5
900	31	866	-8.3	53	21	9.1
850	31	1,309	-9.5	53	30	5.6
800	31	1,775	-11.6	52	35	3.5
750	31	2,275	-13.7	49	19	2.5
700	31	2,789	-16.6	47	323	1.7
650	31	3,350	-19.5	43	285	4.3
600	31	3,932	-23.2	39	264	7.6
550	31	4,565	-27.5	38	259	8.2
500	31	5,243	-32.1		262	12.0
450	31	5,985	-37.2		266	13.2
400	31	6,783	-42.6		265	16.5
350	31	7,671	-48.5		271	20.4
300	31	8,671	-53.4		260	23.1
250	31	9,837	-54.3		255	28.9
200	31	11,269	-52.7		259	31.9
175	31	12,131	-52.3		266	33.4
150	31	13,127	-51.9		254	34.8
125	31	14,306	-52.3		259	34.0
100	30	15,753	-52.6		264	35.5
80	28	17,208	-54.0			
60	27	19,058	-55.7			
50	25	20,232	-56.6			
40	23	21,657	-57.8			
30	16	23,490	-59.2			
20						
15						

ANNETTE, ALASKA
(1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	2.5	86	145	3.9
1,000	31	81			136	4.9
950	31	495	.4	79	176	8.9
900	31	927	-2.1	80	187	9.9
850	31	1,379	-4.3	79	207	8.0
800	31	1,854	-6.7	77	240	9.7
750	31	2,360	-8.9	69	251	12.6
700	31	2,888	-11.0	60	259	13.8
650	31	3,461	-14.2	57	257	20.6
600	31	4,057	-17.6	55	275	26.4
550	31	4,705	-21.7	53	274	30.5
500	31	5,398	-26.5	51	277	34.4
450	30	6,166	-31.4	51	281	35.4
400	30	6,980	-36.8	49		
350	30	7,890	-43.2			
300	30	8,912	-49.6			
250	30	10,087	-54.7			
200	28	11,498	-55.6			
175	28	12,350	-54.4			
150	26	13,321	-53.7			
125	26	14,489	-54.2			
100	25	15,916	-55.3			
80	25	17,336	-55.7			
60	24	19,165	-57.0			
50	23	20,317	-58.1			
40	20	21,706	-60.5			
30	15	23,536	-61.2			
20						
15						

ATHENS, GA.
(991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	10.9	78	248	3.7
1,000	31	168				
950	31	605	11.5	64	248	12.2
900	31	1,049	9.2	61	256	14.8
850	31	1,521	7.3	55	262	16.3
800	31	2,018	5.3	51	265	17.9
750	31	2,551	3.2	43	260	21.2
700	31	3,101	.5	44	261	24.7
650	31	3,699	-2.5	37	262	27.8
600	31	4,323	-6.3	35	259	33.8
550	30	4,998	-10.3		259	35.7
500	30	5,723	-15.1	33	261	42.2
450	30	6,520	-21.0	37	260	45.3
400	30	7,370	-27.3	37	263	47.8
350	30	8,315	-34.9		261	49.5
300	30	9,372	-42.8		263	54.0
250	29	10,573	-51.6		261	61.2
200	27	11,987	-58.6		261	62.2
175	27	12,823	-59.7		264	62.7
150	26	13,796	-62.7		265	62.2
125	26	14,913	-64.8		266	57.1
100	25	16,260	-67.9		266	53.2
80	21	17,587	-68.0		270	42.0
60	21	19,324	-65.6		269	31.9
50	21	20,437	-63.7		273	29.1
40	19	21,814	-62.1		269	28.2
30	16	23,608	-59.7		269	35.0
20	5	26,174	-58.1			

BARROW, ALASKA
(1021 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	-23.6	64	270	4.3
1,000	31	158	-21.5	74	272	5.2
950	31	545	-19.4	76	312	7.4
900	31	941	-18.8	74	318	9.3
850	31	1,366	-19.5	70	325	9.1
800	31	1,815	-20.8	67	325	8.7
750	31	2,299	-22.1	63	325	12.6
700	31	2,796	-24.0	58	332	15.3
650	31	3,343	-26.8	52	328	13.4
600	31	3,907	-30.0	44	316	15.0
550	31	4,529	-33.8	45	316	17.1
500	31	5,184	-38.1		315	18.8
450	31	5,910	-42.9		321	16.7
400	31	6,687	-48.3		320	17.3
350	31	7,555	-53.6		302	8.7
300	31	8,534	-58.0		303	16.1
250	31	9,676	-59.4		301	22.9
200	30	11,077	-57.5		313	24.1
175	30	11,920	-57.5		306	24.5
150	30	12,891	-58.0		302	26.2
125	30	14,037	-58.5		291	30.3
100	29	15,436	-59.9		294	31.3
80	28	16,834	-61.1		291	39.6
60	24	18,595	-63.4		291	48.2
50	21	19,689	-64.6			
40	14	21,157	-63.9			
30	9	22,998	-62.8			
20						

BETHEL, ALASKA
(1012 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	-20.8	77	16	8.0
1,000	31	97			24	8.4
950	31	494	-11.4	60	45	16.3
900	31	901	-9.5	52	41	14.0
850	31	1,342	-10.1	47	34	12.6
800	31	1,808	-10.9	40	26	10.1
750	31	2,307	-13.0		19	8.2
700	31	2,824	-15.8		5	7.2
650	31	3,384	-19.0		338	5.8
600	31	3,970	-22.7		319	7.8
550	31	4,607	-26.9	38	286	7.8
500	31	5,284	-31.5	38	276	8.4
450	31	6,030	-36.5		266	9.5
400	31	6,829	-42.1		254	15.0
350	31	7,719	-48.4		259	17.1
300	31	8,719	-53.9		247	16.7
250	31	9,879	-56.2		257	19.8
200	30	11,309	-53.4		256	28.7
175	29	12,173	-52.0		254	28.4
150	25	13,197	-50.8		254	36.3
125	19	14,443	-49.9			
100	16	15,941	-49.3			
80	13	17,370	-49.4			
60	10	19,243	-51.5			
50	5	20,473	-52.4			
40						
30						
20						

BISMARCK, N. DAK.
(955 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	-6.2	79	314	2.9
1,000	31	144				
950	31	551			311	3.7
900	31	974	-4.4	67	303	11.1
850	31	1,424	-3.8	62	306	15.0
800	31	1,902	-4.7	60	305	20.0
750	31	2,418	-5.8	55	303	24.7
700	31	2,947	-8.5	52	303	28.4
650	31	3,525	-11.5	51	299	30.7
600	31	4,127	-14.8	48	293	33.8
550	31	4,786	-19.0	49	291	33.0
500	31	5,483	-23.8	48	279	37.3
450	31	6,255	-28.9	43	274	41.2
400	31	7,077	-35.0	43	272	42.5
350	31	7,994	-41.9		275	39.2
300	31	9,020	-49.4			
250	31	10,194	-56.2			
200	31	11,599	-58.8			
175	30	12,437	-56.9			
150	30	13,413	-56.7			
125	29	14,569	-57.2			
100	28	15,974	-58.6			
80	26	17,370	-60.1			
60	22	19,145	-61.1			
50	19	20,289	-61.0			
40	17	21,684	-61.6			
30	11	23,498	-62.8			
20						

BOISE, IDAHO
(924 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	-1.1	84	186	1.2
1,000	31	228				
950	31	646				
900	31	1,076	.4	71	214	.8
850	31	1,535	.7	61	292	4.1
800	31	2,022	.1	52	292	10.1
750	31	2,544	-2.5	55	299	15.0
700	31	3,081	-5.3	54	305	15.2
650	31	3,665	-8.6	49	301	17.7
600	31	4,276	-12.1	47	300	22.0
550	31	4,941	-16.2	42	298	25.3
500	31	5,647	-20.8	39	297	25.3
450	31	6,427	-26.3	35	299	23.7
400	31	7,259	-32.2	37	305	25.4
350	30	8,188	-39.0		308	21.2
300	30	9,228	-46.4		331	23.5
250	30	10,416	-54.1		312	19.0
200	27	11,822	-58.7			
175	26	12,667	-57.7			
150	25	13,636	-57.1			
125	23	14,791	-59.3			
100	20	16,176	-62.1			
80	18	17,557	-63.1			
60	18	19,339	-61.1			
50	17	20,468	-62.3			
40	16	21,839	-62.7			
30	12	23,604	-61.6			
20	5	26,155	-60.8			

BROWNSVILLE, TEX.
(1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	17.0	77	126	2.9
1,000	31	166	18.1	69	136	4.5
950	31	609	16.3	64	162	10.3
900	31	1,064	14.8	60	173	10.1
850	31	1,547	12.6	56	181	7.8
800	31	2,054	10.4	50	202	5.8
750	31	2,595	8.0	47	219	7.0
700	31	3,155	5.0	37	238	9.9
650	31	3,765	1.4	31	242	12.4
600	31	4,396	-2.5		239	14.8
550	31	5,084	-6.7		244	18.6
500	31	5,819	-11.7		245	23.1
450	31	6,627	-17.4		244	24.5
400	31	7,490	-23.7		252	30.3
350	31	8,451	-30.9		248	31.9
300	31	9,525	-39.3		252	32.1
250	31	10,747	-48.9		258	34.6
200	31	12,177	-58.9		254	33.0
175	31	13,007	-62.2			
150	31	13,953	-64.5			
125	30	15,060	-67.8			
100	27	16,391	-70.6			
80	23	17,709	-71.5			
60	23	19,422	-67.3			
50	23	20,532	-62.7			
40	22	21,918	-59.2			
30	19	23,728	-57.3			
20	10	26,271	-56.1			

BUFFALO, N. Y.
(992 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	182	0.9	84	223	4.7
1,000	31	120				
950	31	533	-.6	79	230	11.8
900	31	962	-2.1	79	245	19.4
850	31	1,416	-3.2	73	254	23.5
800	31	1,894	-4.7	71	258	26.2
750	31	2,404	-6.7	65	261	30.9
700	31	2,937	-9.1	62	260	34.6
650	31	3,513	-11.9	60	263	37.9
600	31	4,117	-14.9	54	263	42.3
550	31	4,773	-18.6	52	264	46.0
500	31	5,476	-23.0	46	264	50.9
450	31	6,245	-28.2	45	263	55.7
400	31	7,075	-34.0	45	264	62.0
350	31	7,997	-40.6		266	64.7
300	31	9,030	-47.8		268	59.4
250	31	10,214	-54.0		270	58.5
200	29	11,642	-57.3		269	64.1
175	28	12,503	-57.2		266	64.1
150	27	13,489	-58.1			
125	24	14,621	-59.6			
100	17	16,000	-61.3			
80	13	17,379	-61.7			
60	8	19,179	-62.4			
50	6	20,304	-64.1			
40						
30						
20						

BURRWOOD, LA.
(1020 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	17.2	85	55	1.0
1,000	31	174	16.8	76	208	.8
950	31	612	14.6	64	230	5.2
900	31	1,066	12.8	55	246	6.8
850	31	1,544	10.2	54	254	8.2
800	31	2,046	7.5	54	253	7.8
750	31	2,582	5.7	49	250	11.7
700	31	3,139	3.6	33	248	14.2
650	31	3,741	.4	32	252	15.2
600	31	4,374	-3.6		246	17.3
550	31	5,056	-8.0		248	21.6
500	31	5,788	-13.3		248	23.5
450	31	6,592	-19.4		253	25.8
400	31	7,445	-25.9		256	28.6
350	30	8,399	-33.0		257	33.0
300	30	9,465	-41.1		259	35.9
250	30	10,678	-50.5		266	36.9
200	27	12,113	-58.9		272	38.3
175	27	12,946	-61.2		270	41.4
150	27	13,898	-63.4		254	39.4
125	25	15,007	-66.3			
100	23	16,344	-69.7			
80	21	17,672	-70.1			
60	18	19,398	-65.9			
50	16	20,512	-61.4			
40	16	21,904	-59.1			
30	12	23,723	-56.7			
20	8	26,296	-54.9			

CARIBOU, ME.
(991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	191	-9.4	78	284	3.3
1,000	31	122				
950	31	524	-9.3	73	262	8.2
900	31	937	-9.6	71	281	11.7
850	31	1,378	-10.0	67	284	16.7
800	31	1,845	-10.6	67	287	22.3
750	31	2,345	-12.2	63	283	26.0
700	31	2,865	-14.0	55	279	29.7
650	30	3,432	-16.7	55	276	35.7
600	30	4,022	-19.6	53	276	41.4
550	30	4,671	-23.0	50	273	44.9
500	30	5,355	-27.3	50	274	51.1
450	30	6,117	-32.0	54	275	57.3
400	29	6,924	-37.7		273	64.9
350	28	7,827	-44.0		270	71.1
300	27	8,843	-50.5		271	76.7
250	27	10,016	-55.1		266	81.2
200	26	11,444	-57.1		267	78.7
175	25	12,283	-57.2		268	72.3
150	24	13,264	-57.5		268	72.1
125	24	14,411	-58.9		268	73.2
100	23	15,797	-60.5		267	68.4
80	22	17,193	-62.2		263	62.4
60	16	18,969	-62.4		260	62.0
50	12	20,072	-63.5			
40	7	21,480	-63.1			
30						
20						

CHARLESTON, S. C.
(1019 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	13	11.5	86	208	4.9
1,000	31	172	15.8	67	224	8.7
950	31	612	14.3	57	245	13.4
900	31	1,063	11.8	57	250	14.8
850	31	1,539	9.6	51	257	14.0
800	31	2,041	7.8	41	260	15.7
750	31	2,578	5.4	37	261	20.4
700	31	3,132	2.6	34	258	22.5
650	31	3,733	-.6	31	263	24.1
600	31	4,364	-4.3		265	26.4
550	31	5,046	-8.6		263	31.7
500	31	5,777	-13.4		264	29.7
450	30	6,580	-19.0		265	32.2
400	30	7,440	-25.7	36	271	33.2
350	30	8,394	-33.0	36	273	38.3
300	30	9,461	-41.0		277	37.9
250	30	10,677	-49.6		279	40.0
200	30	12,110	-57.5		288	43.9
175	29	12,959	-58.8		290	43.3
150	29	13,921	-61.0			
125	29	15,044	-64.6			
100	28	16,394	-67.8			
80	27	17,727	-68.5			
60	25	19,462	-65.5			
50	24	20,576	-63.2			
40	21	21,956	-60.8			
30	19	23,751	-58.2			
20	11	26,313	-56.8			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20–Continued

DECEMBER 1956

Standard pressure surface (mb)	COLD BAY, ALASKA (1003 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	29	- 2.3	86	14	3.3
1,000	31	47			33	6.6
950	31	460	- 3.5	75	7	7.0
900	31	880	- 4.8	69	359	7.2
850	31	1,328	- 6.0	62	6	7.2
800	31	1,802	- 7.2	48	344	7.0
750	31	2,310	- 9.2	38	335	4.7
700	31	2,834	-12.1	38	289	2.5
650	31	3,404	-15.7	39	251	5.2
600	31	3,996	-19.2	42	235	6.2
550	31	4,643	-23.4	44	230	9.7
500	31	5,328	-28.3	41	221	11.7
450	31	6,083	-33.9	42	230	16.7
400	31	6,891	-39.4		225	19.8
350	31	7,791	-45.8		223	24.1
300	31	8,800	-52.6		213	28.7
250	31	9,965	-55.8		215	27.8
200	31	11,391	-52.4		231	36.7
175	31	12,256	-51.0		225	32.1
150	31	13,258	-50.6		225	36.9
125	31	14,445	-50.5		229	39.0
100	31	15,896	-50.8		234	41.8
80	31	17,345	-51.5		237	48.2
60	31	19,208	-52.4		244	57.5
50	30	20,385	-53.5			
40	28	21,823	-54.5			
30	18	23,649	-56.5			
20	6	26,169	-59.4			

Standard pressure surface (mb)	COLUMBIA, MO. (989 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	238	2.0	77	265	1.4
1,000	31	147				
950	31	569	3.2	66	266	8.4
900	31	1,002	3.8	59	274	14.2
850	31	1,465	3.4	55	278	15.7
800	30	1,956	1.8	52	279	17.9
750	30	2,478	- .6	49	280	21.4
700	30	3,023	- 3.4	43	280	24.5
650	30	3,606	- 6.7	43	275	27.4
600	30	4,226	-10.2	37	273	33.0
550	30	4,890	-14.4		273	35.4
500	30	5,607	-19.1		275	40.2
450	30	6,387	-24.7		273	41.8
400	30	7,229	-30.9		274	42.5
350	30	8,162	-38.0		273	49.1
300	30	9,206	-45.3		267	52.8
250	30	10,402	-52.3		263	60.6
200	30	11,826	-57.0		265	63.3
175	29	12,664	-57.4		264	61.2
150	29	13,637	-58.2		267	59.4
125	28	14,774	-60.8		269	52.4
100	27	16,152	-62.8		271	44.5
80	25	17,522	-63.2		272	34.4
60	25	19,291	-62.8		279	29.1
50	24	20,411	-62.3		273	26.8
40	22	21,788	-61.8		280	26.6
30	10	23,614	-60.3			
20						

Standard pressure surface (mb)	DAYTON, OHIO (981 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	30	297	4.4	79	227	4.1
1,000	30	137				
950	30	560	3.9	78	232	11.3
900	30	995	3.3	72	248	22.5
850	30	1,458	2.0	63	257	26.6
800	30	1,945	.2	55	260	27.6
750	30	2,466	- 1.8	50	261	29.5
700	30	3,006	- 4.7	49	263	31.9
650	30	3,591	- 7.5	45	264	36.5
600	30	4,205	-10.9	38	264	42.3
550	29	4,865	-15.0	39	265	44.3
500	29	5,578	-19.5		264	49.9
450	29	6,357	-24.8		265	53.8
400	29	7,198	-30.6		263	61.2
350	29	8,131	-37.7		258	63.3
300	29	9,174	-45.1		260	70.1
250	29	10,369	-52.2		263	78.1
200	28	11,785	-57.4		261	79.8
175	28	12,625	-58.4		265	78.9
150	27	13,585	-58.2		264	64.5
125	25	14,718	-59.9		268	58.7
100	24	16,094	-62.8		265	49.7
80	21	17,451	-62.8		267	43.9
60	17	19,226	-62.8		272	39.6
50	15	20,344	-62.7		273	38.3
40	9	21,711	-63.4			
30	7	23,473	-62.6			
20						

Standard pressure surface (mb)	DENVER, COLO. (838 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,608	- 1.2	65	195	3.5
1,000	31	164				
950	31	587				
900	31	1,029				
850	31	1,493				
800	31	1,985	3.8	38	275	6.6
750	31	2,511	.9	39	308	7.4
700	31	3,057	- 2.7	39	304	11.1
650	31	3,642	- 6.9	42	315	13.4
600	31	4,259	-10.9	43	320	16.5
550	31	4,923	-15.2	38	322	20.8
500	31	5,635	-20.2		312	22.5
450	31	6,415	-25.8		310	24.1
400	31	7,249	-31.9		314	24.3
350	31	8,178	-39.0		313	25.4
300	31	9,215	-46.8		313	24.9
250	30	10,399	-53.9		295	29.3
200	30	11,812	-57.8		287	36.7
175	30	12,652	-57.5		283	38.1
150	29	13,623	-58.7		288	37.1
125	27	14,753	-60.4		282	36.1
100	25	16,135	-61.1		287	31.9
80	25	17,512	-62.7		291	27.0
60	24	19,284	-61.5		291	22.7
50	21	20,407	-62.2		307	21.8
40	15	21,775	-61.6		313	23.3
30	9	23,571	-58.3			
20	7	26,129	-58.2			

Standard pressure surface (mb)	DODGE CITY, KANS. (926 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	792	2.0	47	340	1.7
1,000	31	163				
950	31	585				
900	31	1,026	5.8	39	341	4.3
850	31	1,493	5.2	36	314	7.0
800	31	1,987	3.9	34	305	9.5
750	31	2,515	1.3	34	294	10.3
700	31	3,060	- 2.0	31	290	11.3
650	31	3,649	- 5.5	30	285	14.8
600	31	4,269	- 9.4		282	18.1
550	31	4,936	-13.8		279	21.0
500	31	5,652	-18.7		273	25.3
450	31	6,436	-24.1		267	29.3
400	31	7,278	-30.6		266	29.7
350	31	8,211	-37.8		274	28.4
300	31	9,256	-45.2		270	31.5
250	31	10,451	-52.7		266	33.6
200	31	11,872	-57.8		260	33.6
175	30	12,714	-57.4		268	38.5
150	30	13,685	-58.4		266	36.9
125	30	14,824	-61.0		269	29.5
100	30	16,201	-63.3		270	29.7
80	30	17,566	-63.9		281	24.5
60	30	19,332	-62.8		290	14.2
50	27	20,457	-62.6		280	13.6
40	26	21,835	-62.1		289	16.7
30	19	23,620	-60.7			
20						

Standard pressure surface (mb)	EL PASO, TEX. (885 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,195	7.4	47	341	2.5
1,000	31	173				
950	31	613				
900	31	1,061				
850	31	1,530	9.0	34	318	5.6
800	31	2,029	6.5	33	277	6.6
750	31	2,561	3.6	34	275	7.0
700	31	3,113	.6	32	272	8.4
650	31	3,710	- 2.7	29	269	10.7
600	31	4,334	- 6.7		265	13.4
550	31	5,011	-10.9		272	14.8
500	31	5,733	-16.2		273	13.6
450	30	6,527	-21.9		275	17.9
400	30	7,375	-28.3		278	18.6
350	30	8,317	-35.6		283	21.8
300	30	9,371	-43.4		287	21.0
250	30	10,576	-50.9		296	27.4
200	29	12,005	-57.0			
175	29	12,846	-58.3			
150	28	13,807	-60.6			
125	26	14,931	-63.3			
100	23	16,288	-66.4			
80	21	17,633	-67.0			
60	18	19,375	-64.0			
50	17	20,493	-62.3			
40	16	21,874	-61.1			
30	15	23,668	-59.2			
20	5	26,273	-56.5			
15						

Standard pressure surface (mb)	ELY, NEV. (813 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,908	- 3.2	54	217	1.7
1,000	31	224				
950	31	649				
900	31	1,087				
850	31	1,549				
800	31	2,037	2.2	47	347	2.9
750	31	2,561	.5	43	330	6.6
700	31	3,108	- 2.4	43	331	10.9
650	31	3,696	- 5.7	47	330	14.2
600	31	4,315	- 9.5	45	334	19.2
550	31	4,985	-14.0	39	338	21.8
500	31	5,698	-18.3	32	327	17.5
450	30	6,473	-23.9		330	19.6
400	30	7,327	-30.0		330	19.8
350	30	8,263	-37.4		343	20.2
300	30	9,309	-45.7		346	16.7
250	29	10,494	-53.7		336	17.5
200	28	11,919	-57.9		321	16.5
175	28	12,760	-57.5		316	20.4
150	28	13,733	-58.0		322	21.2
125	28	14,876	-60.2		320	22.7
100	28	16,259	-62.2		324	18.6
80	27	17,634	-62.7		321	16.7
60	25	19,408	-62.3		342	14.6
50	25	20,536	-61.6		344	18.8
40	24	21,926	-60.6		7	20.8
30	17	23,724	-59.3			
20						
15						

Standard pressure surface (mb)	FAIRBANKS, ALASKA (1001 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	135	-33.3	67	24	0.4
1,000	31	139			255	.4
950	31	519	-21.2	53	90	2.3
900	31	912	-17.8	52	97	4.1
850	31	1,340	-16.8	51	78	4.5
800	31	1,795	-17.1	47	56	3.7
750	31	2,285	-18.4	46	13	2.9
700	31	2,790	-20.3	43	331	6.0
650	31	3,346	-23.4	40	319	7.2
600	31	3,917	-26.8		316	9.7
550	31	4,545	-30.6		304	10.1
500	31	5,210	-34.9		298	12.8
450	31	5,950	-39.8		296	19.4
400	31	6,733	-45.1		272	18.3
350	31	7,613	-50.7		273	21.6
300	31	8,605	-55.4		262	25.6
250	31	9,760	-56.7		258	27.2
200	30	11,184	-54.1		262	34.0
175	29	12,046	-53.5		279	31.3
150	28	13,030	-53.8		278	33.0
125	27	14,186	-54.2		272	33.0
100	24	15,606	-55.1		278	38.9
80	23	17,034	-56.5		285	49.1
60	21	18,837	-58.2			
50	18	19,934	-60.0			
40	16	21,305	-61.8			
30	10	23,255	-60.9			
20						
15						

Standard pressure surface (mb)	FLINT, MICH (986 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	234	- 0.2	76	234	4.1
1,000	31	118				
950	31	532	- .9	79	244	8.9
900	31	960	- 1.8	79	262	16.7
850	31	1,414	- 2.4	71	270	22.3
800	31	1,894	- 4.1	65	272	24.9
750	31	2,407	- 5.9	60	273	27.4
700	31	2,939	- 8.2	55	270	30.3
650	31	3,516	-11.1	50	267	35.2
600	31	4,122	-14.7	49	268	42.2
550	31	4,775	-19.0	48	271	44.3
500	31	5,479	-23.6	47	270	45.5
450	31	6,248	-28.5	44	268	53.6
400	31	7,075	-33.9	44	269	60.0
350	31	7,997	-40.6		272	66.2
300	31	9,030	-47.4		270	71.9
250	31	10,217	-53.5		274	74.2
200	29	11,639	-56.5		274	64.5
175	27	12,471	-56.0		274	63.1
150	27	13,449	-56.3		282	55.4
125	27	14,602	-57.9		281	54.0
100	23	15,998	-60.0		287	42.5
80	23	17,386	-61.0		288	39.4
60	19	19,169	-62.3		289	36.1
50	16	20,297	-61.7		287	37.3
40	14	21,689	-62.2			
30	11	23,498	-62.6			
20	6	26,001	-62.8			
15	6	27,776	-61.9			

Standard pressure surface (mb)	FORT WORTH, TEX. (999 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	178	9.8	65	302	3.5
1,000	31	165			342	9.3
950	31	600	11.0	54	255	7.0
900	31	1,044	10.6	51	253	11.8
850	31	1,520	9.4	43	261	13.4
800	31	2,020	7.0	40	267	13.6
750	31	2,555	4.2	41	267	15.7
700	31	3,106	1.4	36	265	19.0
650	31	3,704	- 2.0	29	261	23.1
600	30	4,331	- 5.8	31	261	27.4
550	30	5,010	-10.4		261	29.5
500	30	5,734	-15.4		260	31.7
450	30	6,528	-21.5		258	35.2
400	30	7,376	-28.0		253	40.8
350	29	8,323	-35.3		254	44.9
300	29	9,376	-43.4		251	49.3
250	29	10,577	-52.2		251	56.5
200	28	12,003	-58.7		255	56.5
175	27	12,843	-60.4		254	54.0
150	27	13,798	-61.8		253	50.9
125	25	14,920	-65.0		258	45.8
100	24	16,275	-66.8		261	36.9
80	20	17,617	-67.3		267	28.4
60	19	19,357	-64.6		277	18.6
50	18	20,473	-62.0		269	17.7
40	17	21,849	-61.4		272	21.2
30	15	23,641	-59.5		265	25.6
20	11	26,176	-58.0			
15	5	27,964	-58.1			

Standard pressure surface (mb)	GLASGOW, MONT. (933 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	695	- 6.3	75	1	0.2
1,000	31	148				
950	31	555				
900	31	982	- 2.3	58	289	9.1
850	31	1,436	- 2.5	54	299	17.7
800	31	1,916	- 3.6	51	298	23.1
750	31	2,430	- 5.2	54	297	23.7
700	31	2,964	- 7.7	56	297	27.4
650	31	3,539	-11.0	56	293	29.3
600	31	4,148	-14.6	54	298	32.1
550	31	4,804	-18.6	49	296	36.5
500	31	5,505	-23.3	47	288	31.3
450	31	6,276	-28.8	45	288	35.5
400	31	7,100	-34.9	45	278	37.9
350	31	8,018	-41.6		280	30.7
300	31	9,046	-48.8			
250	30	10,234	-55.5			
200	28	11,627	-58.3			
175	26	12,474	-56.9			
150	25	13,450	-55.5			
125	25	14,610	-56.2			
100	23	16,012	-57.6			
80	23	17,419	-58.7			
60	19	19,225	-60.0			
50	17	20,370	-61.0			
40	14	21,767	-61.4			
30	10	23,547	-61.6			
20						

Standard pressure surface (mb)	GRAND JUNCTION, COLO. (857 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,474	- 3.8	63	118	2.9
1,000	31	236				
950	31	653				
900	31	1,085				
850	31	1,540			103	2.9
800	31	2,023	- 1.0	48	109	.2
750	31	2,543	- 2.5	47	269	1.0
700	31	3,082	- 4.5	44	295	5.8
650	31	3,668	- 7.3	41	309	10.5
600	31	4,282	-10.4	39	321	13.6
550	31	4,949	-14.3	39	321	16.9
500	31	5,662	-19.2	38	317	19.0
450	31	6,447	-24.8		326	18.5
400	31	7,283	-31.2		321	19.6
350	31	8,213	-38.7		323	17.3
300	31	9,252	-46.6		349	23.9
250	31	10,438	-54.6		352	28.7
200	31	11,848	-58.0		4	20.4
175	31	12,688	-57.7		335	21.2
150	30	13,660	-58.3			
125	30	14,799	-60.6			
100	28	16,173	-62.4			
80	26	17,543	-62.8			
60	23	19,313	-62.6			
50	21	20,438	-62.5			
40	19	21,813	-61.8			
30	11	23,580	-60.7			
20						

Standard pressure surface (mb)	GREAT FALLS, MONT. (886 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,123	- 1.4	55	244	14.6
1,000	31	146				
950	31	565				
900	31	997				
850	31	1,456	- .1	47	253	24.1
800	31	1,940	- 1.3	48	274	22.5
750	31	2,459	- 3.9	51	283	25.6
700	31	2,994	- 6.2	54	294	29.3
650	31	3,575	- 9.8	55	297	31.7
600	31	4,183	-13.7	52	297	33.8
550	31	4,842	-18.3	48	300	34.2
500	31	5,544	-23.1	45	301	37.9
450	31	6,316	-28.5	42	301	40.4
400	31	7,140	-34.5	40	299	41.0
350	31	8,059	-41.3		295	44.1
300	31	9,089	-48.3		292	45.3
250	30	10,261	-54.9		297	48.4
200	30	11,673	-58.5		301	47.4
175	29	12,502	-57.7		299	47.6
150	29	13,476	-56.8		295	50.1
125	29	14,630	-57.5		296	46.8
100	29	16,034	-58.7		296	44.1
80	29	17,434	-59.2		295	42.0
60	27	19,234	-60.1		302	41.0
50	25	20,368	-60.6		298	36.9
40	23	21,757	-61.9		309	38.3
30	17	23,540	-62.8		301	42.5
20	7	26,055	-63.8			

Standard pressure surface (mb)	GREEN BAY, WIS. (988 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	210	- 3.6	82	292	5.4
1,000	31	112				
950	31	523	- 3.8	74	293	8.2
900	31	945	- 4.5	69	292	10.9
850	31	1,395	- 4.7	61	289	14.6
800	31	1,871	- 5.7	56	285	17.7
750	31	2,380	- 7.7	51	284	21.0
700	31	2,909	-10.0	47	283	22.5
650	31	3,485	-12.9	45	279	24.1
600	31	4,083	-16.4	45	278	28.0
550	31	4,736	-20.2	42	270	28.4
500	30	5,431	-24.9	42	265	28.0
450	30	6,199	-30.1	40	260	26.8
400	30	7,017	-35.8	41	259	29.3
350	30	7,932	-41.9		265	28.9
300	30	8,960	-48.4		268	22.7
250	30	10,144	-53.5		269	31.1
200	30	11,572	-54.7			
175	30	12,426	-54.4			
150	30	13,411	-55.4			
125	30	14,569	-56.8			
100	30	15,975	-59.1			
80	27	17,367	-60.1			
60	24	19,165	-61.5			
50	22	20,300	-62.3			
40	20	21,675	-62.5			
30	13	23,455	-62.5			
20						

Standard pressure surface (mb)	GREENSBORO, N. C. (987 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	273	7.1	79	239	3.5
1,000	31	164				
950	31	593	11.0	59	239	14.2
900	31	1,041	9.0	60	248	17.7
850	31	1,513	6.4	58	257	19.8
800	31	2,008	4.2	52	266	22.0
750	31	2,540	2.0	48	267	23.9
700	31	3,086	- .6	43	267	26.6
650	31	3,682	- 3.8	41	267	29.1
600	31	4,303	- 7.2	35	265	31.5
550	31	4,980	-11.2	34	262	36.3
500	31	5,701	-16.1	36	265	38.9
450	31	6,496	-21.5	37	269	42.5
400	31	7,345	-27.7	38	270	44.1
350	31	8,290	-34.8		264	42.0
300	31	9,347	-42.7			
250	31	10,554	-50.9			
200	31	11,979	-58.1			
175	31	12,817	-58.7			
150	31	13,780	-60.5			
125	31	14,910	-62.7			
100	29	16,266	-65.1			
80	28	17,619	-65.8			
60	26	19,366	-64.5			
50	26	20,484	-63.1			
40	26	21,861	-61.8			
30	23	23,647	-60.1			
20	12	26,190	-58.3			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	HATTERAS, N. C. (1019 MB.)						HILO, T. H. (1012 MB.)						INTERNAT. FALLS, MINN. (970 MB.)						JACKSON, MISS. (1008 MB.)						JACKSONVILLE, FLA. (1021 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	3	13.3	81	259	6.8	31	9	24.2	74	82	3.5	31	360	-11.6	70	318	4.3	31	101	11.3	80	212	1.6	31	6	13.8	88	230	1.6
1,000	31	164	14.5	68	249	10.5	31	115	23.2	74	83	4.1	31	125					31	168	13.6	66	202	4.1	31	185	16.6	70	210	3.9
950	31	600	12.3	59	250	15.5	31	564	19.6	79	101	5.2	31	521	-11.6	71	302	6.4	31	607	12.9	61	229	12.0	31	620	14.7	64	230	7.6
900	31	1,048	9.9	53	257	17.7	31	1,025	16.2	82	131	4.3	31	934	-10.7	72	315	8.9	31	1,053	11.3	56	249	14.6	31	1,076	12.1	62	243	9.3
850	31	1,520	7.6	43	256	19.2	31	1,510	13.4	79	154	4.7	31	1,374	-10.3	66	312	11.8	31	1,529	9.3	51	263	16.3	31	1,553	9.8	58	254	9.7
800	31	2,018	5.7	37	258	20.6	31	2,019	11.7	62	145	4.3	31	1,841	- 9.9	62	311	16.9	31	2,029	7.0	49	267	18.8	31	2,055	8.7	40	253	11.7
750	31	2,547	3.3	34	260	24.3	31	2,571	10.2	43	98	4.3	31	2,344	-10.9	57	310	20.6	31	2,564	4.6	44	267	21.2	31	2,590	6.4	35	256	14.4
700	31	3,099	.5	31	260	28.2	31	3,130	7.6		77	4.5	31	2,866	-12.4	53	306	25.1	31	3,117	2.1	37	263	23.3	31	3,150	3.8		255	17.5
650	31	3,693	- 2.8	30	260	32.6	31	3,741	4.2		37	3.1	31	3,438	-15.1	51	300	30.7	31	3,715	- 1.1		260	26.2	30	3,748	.3		257	20.0
600	31	4,319	- 6.7		261	38.3	31	4,383	.6		1	3.9	30	4,037	-18.1	52	299	35.5	31	4,345	- 4.7		260	30.3	30	4,384	- 3.6		259	22.7
550	31	4,991	-10.8		263	40.6	31	5,081	- 3.4		322	5.6	30	4,683	-22.2	52	299	39.6	31	5,026	- 9.0		259	34.4	30	5,062	- 8.0		258	25.8
500	31	5,719	-15.3		262	45.5	31	5,823	- 8.2		322	8.5	30	5,376	-26.6	51	300	43.9	31	5,755	-13.7		256	35.9	30	5,799	-13.1		258	29.7
450	31	6,511	-20.7		261	48.6	31	6,644	-13.6		326	12.8	28	6,139	-31.6	50	301	47.8	31	6,558	-19.4		256	40.6	30	6,596	-19.0		261	33.0
400	31	7,366	-27.1		261	51.9	31	7,519	-19.9		321	13.6	28	6,953	-37.2	51	301	54.0	31	7,412	-26.0		254	42.9	29	7,462	-25.3		261	35.7
350	31	8,313	-34.3		263	56.9	31	8,495	-27.2		313	23.3	28	7,861	-43.6		299	60.8	31	8,363	-33.4		256	45.3	29	8,417	-32.8		258	40.4
300	31	9,373	-42.0		264	60.0	31	9,588	-34.7		325	35.2	27	8,885	-49.8		302	65.1	30	9,426	-41.6		257	44.9	29	9,483	-40.9		257	47.8
250	31	10,582	-50.4		262	69.7	31	10,837	-43.1		315	39.8	26	10,057	-55.1		304	64.9	29	10,629	-50.6		258	52.1	29	10,697	-50.2		259	55.0
200	31	12,012	-57.5		269	64.3	31	12,309	-53.2		315	36.9	22	11,454	-56.6		294	59.6	28	12,051	-57.9		260	58.7	29	12,124	-58.4		259	57.5
175	30	12,849	-58.9		268	67.2	31	13,157	-58.9		306	40.8	14	12,301	-54.3		285	57.3	28	12,889	-59.4		259	59.6	29	12,959	-60.2		260	58.9
150	29	13,812	-60.0		265	67.2	31	14,108	-65.5		311	35.5	12	13,282	-55.3		283	62.7	27	13,848	-61.0		261	53.6	29	13,913	-62.8		261	51.7
125	28	14,945	-63.1		265	61.6	30	15,200	-71.8		308	25.6	12	14,443	-56.2		281	62.4	27	14,973	-63.8		261	47.8	29	15,024	-66.8		261	48.6
100	26	16,306	-66.2		266	56.1	19	16,491	-77.0				9	15,855	-58.1				27	16,331	-66.9		263	40.0	26	16,369	-70.1		261	41.2
80	22	17,643	-66.8		263	45.6	10	17,766	-75.4				8	17,263	-58.9				25	17,674	-67.9		266	30.3	24	17,687	-70.9		263	30.3
60	22	19,392	-64.1		266	30.5	7	19,459	-68.5				5	19,017	-61.0				20	19,404	-64.7		263	21.0	22	19,407	-66.4		261	16.7
50	19	20,505	-63.1		268	30.7	6	20,564	-64.3				5	20,147	-61.8				20	20,521	-62.5		268	22.0	22	20,519	-63.0		267	14.8
40	17	21,891	-61.4		271	33.0	6	21,949	-58.4				5	21,527	-61.7				18	21,902	-61.2		267	25.3	22	21,900	-60.0		269	20.2
30	12	23,692	-58.8		270	37.7													15	23,683	-59.5		263	32.4	18	23,717	-57.5		263	31.3
20	5	26,248	-57.3																8	26,238	-56.8				7	26,300	-56.5			

Standard pressure surface (mb.)	KING SALMON, ALASKA (1006 MB.)						KOTZEBUE, ALASKA (1020 MB.)						LAKE CHARLES, LA. (1019 MB.)						LANDER, WYO. (829 MB.)						LAS VEGAS, NEV. (944 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	15	-15.3	74	3	8.9	31	5	-25.9	73	92	4.5	31	5	14.5	87	191	0.8	31	1,696	- 4.3	64	261	1.9	31	660	8.2	21	271	5.6
1,000	31	62			353	12.2	31	153	-21.2	62	55	4.1	31	168	15.8	76	211	3.7	31	183					31	178				
950	31	458	- 9.6	66	15	14.8	31	544	-14.7	56	25	5.6	31	605	14.5	63	252	7.2	31	601					31	608				
900	31	874	- 8.3	63	23	11.1	31	946	-14.9	51	7	5.4	31	1,059	12.9	57	263	9.5	31	1,036					31	1,058	11.3	20	330	4.3
850	31	1,317	- 8.5	55	25	8.4	31	1,377	-15.7	48	357	7.6	31	1,538	10.6	54	273	9.7	31	1,494					31	1,533	8.8	22	350	7.4
800	31	1,786	- 9.5	48	4	5.4	31	1,833	-16.8	45	354	8.9	31	2,041	8.3	49	278	12.4	31	1,979	.8	42	308	2.1	31	2,031	5.5		352	8.7
750	31	2,288	-11.8	44	334	6.2	31	2,321	-18.4	39	343	11.1	31	2,577	5.8	46	265	11.8	31	2,500	- .8	36	301	9.5	31	2,561	2.7		356	9.9
700	31	2,808	-15.0	42	324	7.8	31	2,828	-20.4	37	334	10.7	31	3,133	2.9	38	271	15.5	31	3,044	- 3.9	37	305	16.5	31	3,111	.0		3	10.5
650	31	3,371	-18.2	41	312	9.1	31	3,377	-23.5		329	11.1	31	3,733	- .1	32	272	17.5	31	3,626	- 7.4	37	308	20.2	31	3,703	- 3.4		345	11.5
600	31	3,959	-21.7	41	305	11.3	31	3,954	-27.1		318	13.2	31	4,367	- 3.7		270	22.0	31	4,243	-11.3	35	310	22.9	31	4,329	- 7.3		345	14.2
550	31	4,595	-25.8	40	298	11.5	31	4,577	-31.1		310	13.4	31	5,045	- 8.2		268	21.4	31	4,904	-15.6	34	310	26.4	29	5,002	-12.1		346	17.3
500	31	5,278	-30.5	40	290	12.8	31	5,244	-35.8		308	16.7	31	5,781	-13.4		261	23.5	31	5,617	-20.5	32	303	28.4	28	5,726	-17.5		342	17.7
450	31	6,027	-35.8		282	15.2	30	5,978	-40.6		312	19.8	31	6,576	-19.2		267	22.7	31	6,392	-26.2		301	27.6	28	6,512	-23.2		337	19.0
400	31	6,827	-41.8		276	18.8	30	6,764	-45.7		305	18.5	30	7,439	-25.8		269	30.3	31	7,228	-32.7		302	22.3	28	7,357	-29.8		339	20.2
350	31	7,717	-48.3		272	20.8	29	7,644	-51.0		304	16.7	30	8,392	-32.9		271	34.0	31	8,153	-39.9		303	21.2	28	8,294	-37.2		336	19.8
300	31	8,716	-54.2		270	27.4	28	8,635	-56.1		296	21.8	30	9,458	-41.1		279	38.3	31	9,187	-47.7		304	23.9	28	9,340	-45.5		334	20.0
250	31	9,877	-56.3		263	28.6	28	9,783	-58.0		294	17.1	30	10,672	-50.3		274	40.2	31	10,369	-54.9		302	35.2	28	10,531	-54.0		326	19.8
200	31	11,302	-53.2		258	30.7	27	11,191	-56.0		266	20.4	29	12,092	-58.4		272	43.3	31	11,778	-58.1				28	11,946	-58.3		306	27.6
175	31	12,162	-52.5		254	32.1	27	12,040	-55.0		266	24.9	29	12,927	-60.3				31	12,619	-57.9				27	12,782	-58.1		294	26.2
150	31	13,158	-52.0		255	35.2	27	13,024	-54.7		263	22.3	28	13,883	-62.5				31	13,593	-57.1				25	13,749	-58.9		296	23.5
125	31	14,339	-51.9		256	35.5	24	14,177	-54.7		264	33.8	27	14,999	-65.5				31	14,741	-58.8				22	14,884	-61.4		291	22.9
100	31	15,782	-52.7		258	38.3	22	15,623	-55.1		270	37.3	25	16,352	-68.3				31	16,137	-60.3				22	16,256	-64.4		293	20.4
80	27	17,246	-53.2		259	39.6	17	17,073	-56.5		270	32.2	24	17,685	-69.1				29	17,533	-60.7				21	17,620	-64.8		313	16.3
60	23	19,102	-54.0		260	41.0	13	18,933	-57.1				21	19,412	-65.7				26	19,324	-61.5				19	19,381	-63.6		337	12.4
50	20	20,301	-54.4		260	46.0	12	20,128	-57.1				21	20,528	-62.6				25	20,453	-61.6				18	20,503	-63.0		358	11.1
40	17	21,777	-54.4		266	45.3	9	21,558	-58.2				20	21,909	-61.1				17	21,846	-62.3				17	21,878	-62.0		339	10.3
30	12	23,750	-54.3				5	23,444	-59.6				18	23,702	-58.8				12	23,605	-61.0				13	23,668	-60.3		339	11.3
20													7	26,285	-57.2										6	26,204	-59.0			

Standard pressure surface (mb.)	LITTLE ROCK, ARK. (1009 MB.)						McGRATH, ALASKA (1004 MB.)						MAZATLAN, MEXICO (1012 MB.)						MEDFORD, OREG. (977 MB.)						MIAMI, FLA. (1021 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	79	9.2	72	241	1.6	31	103	-30.3	59	312	1.7	31	14	22.7	73			31	401	1.7	93	164	0.2	31	4	20.1	76	62	4.5
1,000	31	152	10.0	68	237	2.9	31	130			358	3.1	31	116	22.0	70			31	214					31	180	19.9	70	78	7.4
950	31	586	9.7	65	248	10.7	31	511	-20.5	63	42	9.5	31	570	22.7	42			31	635	4.2	75	199	.6	31	619	16.8	73	96	8.0
900	31	1,027	8.8	61	252	16.7	31	908	-15.7	61	55	13.6	31	1,031	20.5	37			31	1,073	6.4	58	180	2.3	31	1,080	13.8	71	104	5.8
850	31	1,500	7.7	57	264	19.6	31	1,341	-13.9	54	48	13.4	31	1,522	17.5	34			31	1,542	5.9	51	239	5.4	31	1,561	12.0	56	110	3.1
800	31	1,997	5.5	53	269	20.4	31	1,802	-13.5	46	34	11.1	31	2,037	13.9	38			31	2,036	3.5	49	274	8.4	31	2,067	10.5	38	156	2.5
750	31	2,532	3.1	47	270	22.3	31	2,294	-15.1	42	20	10.5	31	2,582	10.0	37			31	2,565	.7	44	287	12.6	31	2,608	8.8		184	3.1
700	31	3,080	.4	40	277	23.1	31	2,810	-17.7	40	10	9.7	31	3,147	6.4	39			31	3,108	- 2.2	38	289	16.9	31	3,171	5.8		212	3.1
650	31	3,675	- 3.0	35	275	26.0	31	3,364	-20.8	38	357	9.5	31	3,758	2.4				31	3,699	- 5.8	34	295	19.4	31	3,777	2.4		241	5.1
600	31	4,299	- 6.8		275	28.4	31	3,948	-24.5	36	332	8.7	31	4,393	- 1.7				31	4,315	- 9.9	34	295	20.8	31	4,416	- 1.2		244	9.3
550	31	4,976	-11.2		274	26.8	31	4,578	-28.6		305	9.5	31	5,085	- 5.9				31	4,985	-14.2	35	296	20.6	31	5,101	- 5.5		248	7.6
500	31	5,698	-16.2		261	30.5	31	5,252	-33.2		292	11.5	30	5,821	-10.6				30	5,692	-19.2		293	19.8	30	5,848	-10.6		261	9.3
450	31	6,493	-21.7		258	34.2	31	5,993	-37.9		294	15.3	30	6,637	-16.1				30	6,477	-24.4		300	20.4	30	6,656	-16.4		257	9.9
400	31	7,339	-27.8		267	34.2	31	6,786	-43.4		280	16.5	30	7,501	-22.3				30	7,316	-30.6	37	296	17.7	30	7,526	-22.9		261	13.4
350	31	8,285	-34.9		263	35.9	31	7,672	-49.2		270	24.9	30	8,469	-29.6				30	8,250	-37.4		284	17.5	30	8,489	-30.3		269	13.8
300	31	9,342	-42.8		256	43.1	31	8,667	-54.7		258	27.0	30	9,549	-37.9				29	9,293	-45.3		265	8.0	30	9,563	-39.2		265	18.6
250	31	10,549	-51.0				31	9,823	-56.2		258	31.3	28	10,781	-47.5				29	10,484	-53.4				30	10,784	-48.9		279	19.4
200	31	11,977	-57.4				31	11,246	-53.7		260	32.2	22	12,219	-58.0				29	11,896	-58.5				30	12,216	-57.6		273	28.4
175	31	12,818	-58.6				31	12,104	-53.0		254	33.0	16	13,040	-62.8				29	12,734	-58.3				28	13,052	-60.7		266	31.3
150	31	13,782	-60.3				31	13,097	-52.5		265	38.9	12	13,981	-64.6				29	13,702	-58.0				28	14,002	-63.9		265	30.9
125	30	14,913	-61.9				31	14,272	-52.6		260	38.3	7	15,050	-66.6				29	14,843	-60.0				28	15,105	-68.4		266	23.7
100	28	16,279	-64.8				31	15,707	-53.7		261	40.4							27	16,222	-61.6				25	16,427	-72.9		266	16.3
80	27	17,637	-65.1				30	17,143	-54.5		267	40.6							25	17,594	-60.7				25	17,729	-73.4		269	5.8
60	25	19,391	-63.5				28	18,992	-55.7										21	19,378	-60.5				25	19,432	-67.3		86	1.9
50	24	20,512	-62.6				22	20,254	-55.2										19	20,514	-61.1				23	20,549	-61.5		64	5.4
40	23	21,892	-61.4				17	21,665	-57.1										18	21,903	-60.6				22	21,952	-57.0		324	2.9
30	20	23,693	-59.3				6	23,548	-57.7										17	23,694	-60.7				20	23,789	-55.2		265	8.7
20	9	26,248	-58.6																						15	26,393	-52.8			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

DECEMBER 1956

MIDLAND, TEX. (920 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	871	8.4	48	221	1.9
1,000--	31	164				
950----	31	595				
900----	31	1,048	10.9	37	242	4.5
850----	31	1,523	9.4	36	255	9.1
800----	31	2,024	7.1	34	267	10.9
750----	31	2,556	4.4	33	267	14.4
700----	31	3,109	1.3	30	264	16.9
650----	31	3,705	- 2.0	28	264	18.1
600----	31	4,333	- 5.9		263	18.8
550----	30	5,008	-10.4		262	21.6
500----	30	5,734	-15.3		262	25.3
450----	30	6,529	-21.0		261	27.4
400----	30	7,380	-27.5		263	31.7
350----	30	8,325	-34.9		260	32.2
300----	30	9,382	-42.7		282	31.7
250----	30	10,588	-50.8		279	36.7
200----	30	12,019	-56.5		273	38.3
175----	29	12,857	-58.0		283	40.2
150----	28	13,821	-60.0		279	40.4
125----	27	14,950	-63.0		288	35.7
100----	26	16,313	-65.8			
80-----	23	17,659	-66.1			
60-----	21	19,409	-63.4			
50-----	19	20,530	-62.0			
40-----	16	21,910	-59.4			
30-----	15	23,711	-58.6			
20-----	7	26,243	-56.0			

MONTGOMERY, ALA. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	11.9	84	186	1.6
1,000--	31	173	14.6	67	206	4.1
950----	31	608	12.8	64	232	10.9
900----	31	1,059	10.9	59	247	12.8
850----	31	1,534	8.9	53	259	14.2
800----	31	2,035	6.7	51	258	16.3
750----	31	2,567	4.6	42	262	18.6
700----	31	3,123	2.5	40	259	22.9
650----	31	3,723	.8	38	256	25.6
600----	31	4,353	- 4.6	34	258	29.5
550----	31	5,034	- 8.7		258	33.0
500----	30	5,767	-13.7		258	35.5
450----	29	6,568	-19.2		256	40.2
400----	29	7,427	-25.8		259	43.3
350----	29	8,380	-33.2		257	47.6
300----	29	9,443	-41.5		259	49.9
250----	29	10,654	-50.7		260	56.5
200----	28	12,073	-58.5		258	63.1
175----	27	12,907	-59.6		258	61.2
150----	27	13,865	-61.9		259	62.0
125----	27	14,984	-64.6		259	56.1
100----	27	16,336	-67.7		261	44.3
80-----	24	17,670	-68.9		267	37.1
60-----	23	19,399	-65.1		265	26.4
50-----	23	20,515	-62.5		269	22.1
40-----	22	21,893	-60.9		270	28.7
30-----	21	23,687	-58.8		269	39.8
20-----	11	26,262	-56.6			

NANTUCKET, MASS. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	4.2	83	325	3.5
1,000--	31	129	4.5	77	305	7.0
950----	31	547	2.5	73	281	10.5
900----	31	983	1.7	65	275	14.0
850----	31	1,443	.2	60	268	19.8
800----	31	1,927	- 1.4	58	269	26.6
750----	31	2,446	- 3.4	58	267	31.1
700----	31	2,984	- 5.9	57	267	35.9
650----	31	3,568	- 8.3	53	266	39.2
600----	31	4,179	-11.7	49	274	39.0
550----	31	4,844	-15.8	42	267	40.8
500----	31	5,553	-20.2	42	264	45.3
450----	31	6,334	-25.3	40		
400----	31	7,170	-31.5	40		
350----	31	8,101	-38.2			
300----	31	9,143	-45.6			
250----	31	10,337	-52.4			
200----	31	11,759	-57.6			
175----	31	12,599	-58.3			
150----	30	13,580	-59.1			
125----	26	14,712	-61.0			
100----	25	16,090	-62.9			
80-----	22	17,458	-63.6			
60-----	20	19,223	-63.6			
50-----	18	20,337	-63.4			
40-----	15	21,717	-62.7			
30-----	10	23,514	-62.1			
20-----	5	26,030	-61.7			

NASHVILLE, TENN. (998 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	9.6	82	220	3.7
1,000--	31	157				
950----	31	586	9.3	68	237	15.0
900----	31	1,033	7.9	66	246	17.5
850----	31	1,503	5.9	58	256	19.4
800----	31	1,997	3.8	57	264	20.8
750----	31	2,525	1.2	55	263	21.2
700----	31	3,071	- 1.6	52	264	23.5
650----	31	3,661	- 4.5	41	263	26.4
600----	30	4,284	- 8.2		262	28.9
550----	30	4,957	-12.1	35	263	30.3
500----	30	5,677	-16.9	34	258	33.6
450----	29	6,474	-22.3		261	36.5
400----	29	7,320	-28.3		258	39.6
350----	29	8,264	-35.2		268	39.8
300----	29	9,320	-42.9		264	40.8
250----	29	10,526	-51.2			
200----	26	11,969	-58.1			
175----	24	12,805	-59.0			
150----	23	13,764	-60.3			
125----	23	14,892	-63.1			
100----	20	16,268	-65.9			
80-----	18	17,610	-65.7			
60-----	17	19,357	-64.6			
50-----	16	20,469	-63.1			
40-----	12	21,852	-61.6			
30-----	10	23,636	-60.2			
20-----						

N. Y. INT. AP IDLEWILD (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	4.2	76	310	3.1
1,000--	31	141	4.4	74	312	3.9
950----	31	561	2.6	75	283	7.4
900----	31	995	2.3	71	272	12.4
850----	31	1,456	1.1	68	267	19.2
800----	31	1,943	- .6	65	271	24.7
750----	31	2,464	- 2.7	63	270	29.3
700----	31	3,001	- 5.2	60	268	33.0
650----	31	3,584	- 8.1	58	270	38.3
600----	31	4,198	-11.1	51	268	42.3
550----	31	4,863	-15.1	48	269	44.1
500----	31	5,575	-19.8	49	268	50.1
450----	30	6,350	-25.2	45	268	56.5
400----	30	7,191	-31.2	46	266	61.2
350----	28	8,107	-38.5		269	65.7
300----	28	9,149	-45.8		269	74.6
250----	27	10,339	-52.6		268	79.8
200----	27	11,760	-58.1		272	78.9
175----	27	12,600	-57.9		269	70.1
150----	26	13,587	-58.6		270	70.1
125----	25	14,733	-61.1		270	63.7
100----	22	16,091	-63.3		272	55.0
80-----	19	17,458	-64.1		268	53.2
60-----	15	19,238	-63.2		266	49.7
50-----	15	20,358	-63.1		268	37.5
40-----	14	21,733	-62.0		269	38.7
30-----	12	23,510	-62.5			
20-----	8	26,026	-61.1			

NOME, ALASKA (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	-19.2	69	61	3.5
1,000--	31	145	-14.4	59	74	2.9
950----	31	538	-12.1	56	42	4.3
900----	31	949	-12.6	55	29	5.1
850----	31	1,384	-13.4	50	19	7.8
800----	31	1,844	-14.6	43	12	10.5
750----	31	2,336	-16.5	37	2	9.5
700----	31	2,847	-19.0	35	351	8.9
650----	31	3,401	-21.8	33	341	9.5
600----	31	3,980	-25.4		338	11.1
550----	31	4,610	-29.1		316	9.9
500----	31	5,281	-33.6		303	10.5
450----	31	6,019	-38.7		294	12.2
400----	31	6,811	-44.1		284	14.4
350----	31	7,693	-49.9		277	20.0
300----	31	8,687	-55.3		282	18.6
250----	31	9,840	-57.6		274	20.6
200----	31	11,254	-55.2		260	24.3
175----	31	12,107	-54.0		249	25.6
150----	31	13,097	-53.2		252	31.5
125----	31	14,271	-53.3		251	35.5
100----	31	15,705	-54.0		255	39.6
80-----	31	17,134	-54.8		258	43.1
60-----	30	18,976	-56.0		267	49.0
50-----	28	20,109	-57.4		262	49.0
40-----	27	21,497	-58.7			
30-----	19	23,351	-59.8			
20-----						
15-----						

NORFOLK, VA. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	10.0	77	226	4.9
1,000--	31	158	11.7	68	233	11.1
950----	31	590	10.4	61	255	19.0
900----	31	1,036	8.6	58	261	19.8
850----	31	1,507	5.8	58	265	20.6
800----	31	2,001	3.3	54	262	22.1
750----	31	2,530	1.3	45	260	25.3
700----	31	3,075	- 1.7	46	260	29.1
650----	30	3,666	- 5.0	42	259	34.8
600----	29	4,286	- 8.6		262	38.5
550----	29	4,956	-12.8		261	42.2
500----	29	5,675	-17.6	38	261	48.2
450----	28	6,459	-23.1	36	261	53.6
400----	28	7,305	-29.2	40	260	57.5
350----	28	8,244	-36.4	46	261	64.3
300----	27	9,295	-44.3		263	66.2
250----	26	10,484	-52.2		265	74.4
200----	26	11,906	-58.1		266	76.7
175----	26	12,745	-58.9		264	73.4
150----	25	13,700	-60.5		261	71.1
125----	24	14,824	-62.9		263	64.5
100----	23	16,182	-65.4		265	59.2
80-----	20	17,533	-65.0		263	48.2
60-----	16	19,297	-64.2		262	35.7
50-----	14	20,419	-62.8		262	32.8
40-----	14	21,799	-61.3		269	34.4
30-----	7	23,597	-59.7			
20-----						
15-----						

NORTH PLATTE, NEBR. (918 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	- 2.3	72	316	1.6
1,000--	31	153				
950----	31	572				
900----	31	1,005	3.1	56	311	5.1
850----	31	1,469	2.9	44	313	11.5
800----	31	1,958	1.3	44	310	16.5
750----	31	2,481	- .8	41	308	19.2
700----	31	3,024	- 3.8	41	309	20.6
650----	31	3,608	- 7.2	43	303	22.0
600----	31	4,224	-10.9	44	300	22.5
550----	31	4,888	-14.9	40	301	22.1
500----	31	5,602	-19.8	38	298	26.2
450----	31	6,385	-25.1	37	293	27.0
400----	31	7,220	-31.4	34	300	26.8
350----	30	8,150	-38.5		300	26.8
300----	30	9,191	-46.3		305	27.0
250----	30	10,380	-53.5		296	23.1
200----	30	11,796	-57.7		293	33.6
175----	30	12,639	-56.9		290	42.3
150----	30	13,614	-57.3		284	40.4
125----	30	14,764	-58.2		285	36.7
100----	28	16,158	-60.1		284	33.4
80-----	27	17,547	-60.9			
60-----	26	19,336	-60.4			
50-----	26	20,468	-61.4			
40-----	24	21,848	-61.7			
30-----	17	23,637	-60.6			
20-----	5	26,130	-58.7			
15-----						

OAKLAND, CALIF. (1022 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	9.6	70	355	1.7
1,000--	31	188	12.3	54	354	4.1
950----	31	619	11.9	43	355	8.2
900----	31	1,070	11.8	35	351	10.3
850----	31	1,547	10.0	31	349	10.7
800----	31	2,049	7.6	31	343	11.1
750----	31	2,585	4.4		343	12.8
700----	31	3,135	.8	28	337	13.6
650----	31	3,731	- 3.0		334	15.7
600----	31	4,356	- 7.4	30	330	17.3
550----	31	5,027	-11.8		327	18.6
500----	31	5,751	-16.7		327	18.6
450----	31	6,540	-22.5		324	19.2
400----	31	7,388	-29.0		319	20.8
350----	31	8,329	-36.6		319	25.3
300----	31	9,377	-45.3		318	26.0
250----	31	10,569	-54.1		317	27.6
200----	31	11,978	-59.4		312	30.3
175----	30	12,817	-59.8		306	31.5
150----	30	13,778	-60.7		308	33.0
125----	29	14,913	-62.4		312	28.0
100----	27	16,281	-64.7		311	22.1
80-----	24	17,648	-64.6		324	18.8
60-----	22	19,416	-63.8		357	14.6
50-----	21	20,540	-63.1		8	16.9
40-----	21	21,915	-62.5		21	17.5
30-----	20	23,699	-60.3		11	14.6
20-----	18	26,235	-58.1		338	14.8
15-----	11	28,033	-57.6			

OKLAHOMA CITY, OKLA. (972 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	391	4.8	74	237	1.6
1,000--	31	155				
950----	31	581	8.3	54	256	4.3
900----	31	1,025	9.3	48	257	8.4
850----	31	1,498	8.4	42	282	11.5
800----	31	1,997	6.1	37	285	14.4
750----	31	2,530	3.2	34	277	15.2
700----	31	3,078	.1	32	271	17.9
650----	31	3,672	- 3.3		265	21.4
600----	31	4,296	- 6.7		268	24.1
550----	31	4,972	-10.9		273	24.5
500----	31	5,694	-16.4		267	26.8
450----	31	6,486	-22.2		263	31.1
400----	31	7,332	-28.5		260	35.2
350----	31	8,274	-35.6		269	34.0
300----	31	9,327	-43.6		265	36.1
250----	31	10,528	-52.1		268	37.3
200----	31	11,953	-57.2		277	40.0
175----	30	12,801	-57.6			
150----	29	13,772	-59.3			
125----	29	14,907	-61.5			
100----	28	16,282	-64.4			
80-----	25	17,646	-64.9			
60-----	22	19,402	-63.4			
50-----	21	20,529	-62.2			
40-----	19	21,904	-61.1			
30-----	15	23,684	-59.9			
20-----						
15-----						

OMAHA, NEBR. (968 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	403	- 1.0	72	314	3.5
1,000--	31	143				
950----	31	560	.6	64	313	6.4
900----	31	991	1.5	52	308	12.2
850----	31	1,450	1.1	47	314	15.0
800----	31	1,937	- .2	43	311	17.1
750----	31	2,455	- 2.3	41	307	19.6
700----	31	2,996	- 5.1	41	300	21.8
650----	31	3,580	- 7.9	37	296	26.0
600----	31	4,193	-11.6	38	294	30.3
550----	31	4,856	-15.5	36	297	31.7
500----	31	5,567	-20.2	38	291	32.4
450----	31	6,348	-25.8	38	290	34.2
400----	31	7,182	-31.8	36	288	38.9
350----	31	8,111	-39.1		283	40.0
300----	31	9,148	-47.1		281	39.8
250----	30	10,331	-54.6		280	46.4
200----	30	11,743	-57.6		274	48.2
175----	30	12,585	-57.7		275	49.0
150----	29	13,557	-58.0		280	47.6
125----	29	14,700	-59.8		278	42.9
100----	27	16,089	-61.7		280	38.1
80-----	27	17,468	-62.0		280	34.4
60-----	26	19,246	-62.2		288	27.6
50-----	23	20,363	-62.8		282	23.5
40-----	21	21,738	-63.4		283	29.5
30-----	11	23,538	-61.7			

PEORIA, ILL. (992 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	201	0.6	82	269	3.9
1,000--	31	137				
950----	31	556	.4	76	271	9.1
900----	31	985	1.1	69	279	15.0
850----	31	1,444	.8	60	280	17.9
800----	31	1,930	- 1.2	60	278	21.8
750----	31	2,450	- 3.1	54	276	24.5
700----	31	2,986	- 5.7	50	277	28.6
650----	31	3,570	- 8.6	48	272	31.7
600----	31	4,181	-12.3	46	271	36.3
550----	31	4,843	-16.4	43	272	40.8
500----	31	5,552	-21.0	37	270	44.5
450----	30	6,327	-26.5	38	268	44.7
400----	30	7,157	-32.4		265	48.2
350----	30	8,083	-39.3		273	53.6
300----	30	9,121	-46.2		259	59.4
250----	30	10,312	-52.9		255	69.5
200----	30	11,734	-57.3		254	64.5
175----	29	12,580	-57.2		255	64.3
150----	28	13,562	-57.9		263	63.3
125----	28	14,703	-60.3		265	51.9
100----	26	16,088	-61.9		260	44.1
80-----	24	17,460	-62.8		265	38.3
60-----	22	19,233	-61.8		267	32.2
50-----	21	20,359	-62.5		270	28.6
40-----	18	21,744	-62.8		275	27.6
30-----	11	23,515	-62.3			

PHOENIX, ARIZ. (979 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	341	13.1	37	15	1.4
1,000--	31	157				
950----	31	596	16.2	23	29	2.9
900----	31	1,050	13.4	24	22	2.9
850----	31	1,528	10.1	27	29	2.3
800----	31	2,028	6.6	31	36	3.3
750----	31	2,562	3.5	33	28	2.7
700----	31	3,112	.3	31	335	3.3
650----	31	3,709	- 2.9		328	5.8
600----	31	4,332	- 6.6		319	7.0
550----	31	5,009	-11.0		316	11.8
500----	31	5,732	-16.1		317	14.8
450----	31	6,523	-21.9		319	15.3
400----	31	7,372	-28.5		324	17.5
350----	31	8,314	-35.7		324	17.7
300----	31	9,367	-43.7		324	19.4
250----	31	10,570	-51.4		288	23.1
200----	31	12,000	-56.2		291	22.3
175----	31	12,846	-57.2		294	23.7
150----	31	13,818	-58.6		291	27.2
125----	31	14,953	-61.9		293	25.3
100----	31	16,321	-65.5		300	17.3
80-----	31	17,673	-66.0		308	14.6
60-----	30	19,426	-63.7		335	10.5
50-----	25	20,544	-63.2		341	11.3
40-----	23	21,917	-62.2		8	9.3
30-----	20	23,699	-60.4			

PITTSBURGH, PA. (974 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	353	3.4	80	235	3.9
1,000--	30	138				
950----	30	561	3.5	77	233	8.2
900----	30	994	2.0	75	247	20.0
850----	30	1,454	.4	71	254	25.3
800----	30	1,939	- 1.3	68	257	29.3
750----	30	2,457	- 3.1	62	261	30.7
700----	30	2,996	- 5.9	59	261	34.8
650----	30	3,578	- 9.1	60	262	39.0
600----	30	4,188	-12.4	54	266	44.7
550----	30	4,850	-16.4	52	265	51.1
500----	30	5,558	-20.9	48	263	53.0
450----	30	6,335	-26.1	46	263	56.5
400----	30	7,170	-32.0		260	66.0
350----	29	8,108	-38.7		258	68.2
300----	29	9,148	-46.0		258	73.8
250----	29	10,339	-53.2		255	77.1
200----	27	11,760	-59.0		260	78.7
175----	24	12,622	-59.9		256	83.1
150----	21	13,573	-60.0		255	71.1
125----	18	14,689	-61.4		258	65.7
100----	10	16,071	-63.3			
80-----	5	17,371	-60.9			
60-----						
50-----						
40-----						
30-----						

PORTLAND, ME. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	20	- 2.8	77	326	4.7
1,000--	31	129	- 2.2	69	305	5.1
950----	31	541	- 2.3	67	277	7.0
900----	31	965	- 3.5	68	270	12.2
850----	31	1,416	- 4.3	66	280	14.0
800----	31	1,894	- 4.7	55	274	20.8
750----	31	2,407	- 6.3	50	269	26.8
700----	31	2,938	- 8.6	51	270	32.2
650----	31	3,516	-11.3	56	270	39.0
600----	30	4,132	-14.2	52	266	42.7
550----	30	4,791	-17.8	46	265	46.8
500----	30	5,495	-22.5	44	266	51.5
450----	30	6,269	-27.6	43	267	59.4
400----	30	7,098	-33.3	42	266	61,6
350----	30	8,022	-40.1		268	70.1
300----	30	9,058	-47.0		270	75.0
250----	30	10,247	-53.3		268	83.9
200----	29	11,662	-56.8		270	77.3
175----	28	12,497	-56.6		269	79.6
150----	28	13,473	-56.9		268	73.8
125----	28	14,622	-58.9		269	66.2
100----	28	16,013	-61.1		266	60.4
80-----	28	17,393	-62.1		269	55.6
60-----	27	19,166	-62.4		266	50.9
50-----	25	20,286	-63.1		270	46.8
40-----	20	21,646	-62.6		269	49.0
30-----	11	23,458	-62.8		269	38.9

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

	RAPID CITY, S. DAK. (904 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	966	- 2.1	67	341	4.3
1,000	31	149				
950	31	564				
900	31	998			327	6.4
850	31	1,459	.9	47	313	15.7
800	31	1,944	- .9	49	314	21.4
750	31	2,463	- 3.0	49	309	25.1
700	31	3,001	- 5.8	49	306	26.2
650	31	3,585	- 9.1	49	307	28.6
600	31	4,193	-13.0	48	304	29.9
550	31	4,855	-17.1	46	301	31.3
500	30	5,557	-21.8	46	299	32.6
450	30	6,338	-27.3	44	298	33.6
400	30	7,161	-33.7	44	299	34.4
350	30	8,083	-41.2		301	38.3
300	30	9,110	-49.3		297	38.3
250	26	10,293	-56.6		303	41.6
200	24	11,692	-59.1		293	44.7
175	21	12,539	-58.2		293	41.0
150	18	13,525	-57.5		283	37.7
125	11	14,699	-59.4		284	33.4
100						
80						
60						
50						
40						
30						

	ST. CLOUD, MINN. (977 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	316	- 6.5	77	295	2.9
1,000	31	127				
950	31	534	- 5.3	71	305	6.8
900	31	955	- 5.2	66	304	12.6
850	31	1,404	- 4.5	60	295	15.2
800	31	1,882	- 4.6	53	288	19.2
750	31	2,394	- 6.3	50	287	21.6
700	31	2,925	- 8.9	46	290	20.0
650	31	3,499	-12.0	42	293	23.9
600	31	4,104	-15.3	38	294	27.0
550	31	4,761	-19.1	39	289	28.4
500	31	5,460	-23.6	39	285	28.4
450	31	6,227	-28.7		282	26.6
400	31	7,054	-34.8	41	268	24.5
350	31	7,973	-41.6		269	22.1
300	31	9,000	-49.1		268	27.4
250	30	10,179	-55.7		265	25.1
200	30	11,592	-56.6			
175	30	12,441	-55.3			
150	30	13,422	-56.0			
125	30	14,578	-57.2			
100	30	15,983	-59.0			
80	30	17,379	-60.0			
60	29	19,176	-61.5			
50	23	20,286	-62.8			
40	19	21,669	-62.1			
30	9	23,470	-62.0			

	ST. PAUL IS., ALASKA (1010 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	- 4.3	80	49	10.5
1,000	31	85			38	9.1
950	31	488	- 7.2	79	48	12.8
900	31	907	- 8.3	72	48	10.7
850	31	1,350	- 8.6	57	31	11.7
800	31	1,819	- 9.7	48	21	10.1
750	31	2,318	-11.7	38	8	5.8
700	31	2,841	-14.4		346	4.5
650	31	3,403	-17.6		302	6.2
600	31	3,993	-21.0	36	271	4.7
550	31	4,632	-25.2	39	253	6.0
500	31	5,315	-30.0	39	238	8.2
450	31	6,062	-35.3		234	11.5
400	30	6,858	-41.3		225	15.2
350	30	7,753	-47.4		217	22.0
300	30	8,756	-53.8		218	28.4
250	28	9,928	-57.0		218	30.5
200	26	11,334	-54.5		221	28.7
175	24	12,207	-52.7		227	32.8
150	22	13,221	-51.0		232	30.1
125	16	14,383	-50.0		224	33.8
100	13	15,887	-49.6			
80	13	17,347	-50.0			
60	9	19,265	-50.0			
50	8	20,420	-50.5			
40						
30						

	SALEM, OREG. (1016 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	61	4.6	91	192	5.1
1,000	31	187	5.2	84	196	5.8
950	31	612	7.1	69	205	10.7
900	31	1,052	6.0	66	228	11.8
850	31	1,518	3.8	62	248	14.4
800	31	2,008	1.2	59	258	17.9
750	31	2,528	- 1.5	52	264	19.8
700	31	3,072	- 4.3	44	271	21.8
650	31	3,655	- 8.1	40	275	23.3
600	31	4,269	-11.6	40	275	26.2
550	31	4,932	-16.0	41	278	28.9
500	31	5,640	-20.4	42	278	33.0
450	31	6,418	-25.9	42	279	35.0
400	31	7,252	-32.4	43	276	37.3
350	31	8,179	-39.3		280	41.4
300	31	9,217	-46.5		286	45.8
250	31	10,406	-54.0		292	46.4
200	31	11,817	-58.8		296	44.1
175	30	12,667	-58.0		292	42.2
150	29	13,633	-58.2		289	36.1
125	29	14,776	-59.4		289	33.0
100	27	16,166	-61.8		291	32.2
80	23	17,555	-60.6		305	25.4
60	21	19,351	-60.4		317	26.2
50	18	20,497	-59.9		332	26.0
40	15	21,884	-60.7		340	26.8
30	11	23,688	-60.7			

	SALT LAKE CITY, UTAH (878 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,288	- 1.5	79	184	1.7
1,000	31	232				
950	31	650				
900	31	1,083				
850	31	1,545	.1	67	210	1.2
800	31	2,030	- .7	56	252	3.3
750	31	2,552	- 2.8	53	294	8.2
700	31	3,089	- 5.1	52	307	14.2
650	31	3,675	- 8.0	51	313	17.1
600	31	4,287	-11.8	54	309	20.8
550	31	4,954	-15.9	50	309	22.1
500	31	5,660	-20.3	43	310	24.1
450	31	6,443	-25.5	37	308	23.9
400	31	7,277	-31.8		308	27.6
350	31	8,207	-38.8		306	27.6
300	31	9,248	-46.5		303	31.5
250	31	10,436	-54.3		307	30.3
200	31	11,847	-58.7		308	32.1
175	31	12,685	-58.1		304	33.0
150	31	13,659	-57.7		299	29.9
125	30	14,801	-59.9		296	28.6
100	29	16,186	-61.4		301	26.0
80	25	17,577	-61.6		309	21.4
60	21	19,364	-60.9		318	17.9
50	18	20,514	-61.7		328	17.9
40	14	21,903	-61.4		333	20.2
30	11	23,693	-60.5			

	SAN ANTONIO, TEX. (992 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	243	13.3	58	4	0.6
1,000	31	169				
950	31	608	14.4	52	115	2.3
900	31	1,060	12.9	52	206	4.1
850	31	1,538	11.1	49	229	6.2
800	31	2,042	9.1	39	245	9.3
750	31	2,581	6.6	35	246	13.2
700	31	3,138	3.6	34	255	15.2
650	31	3,739	- .1	33	255	17.3
600	31	4,371	- 4.2		255	19.8
550	31	5,049	- 8.7		252	23.5
500	31	5,783	-13.6		257	27.2
450	31	6,582	-19.6		260	29.3
400	31	7,437	-26.0		259	34.6
350	31	8,388	-33.0		262	36.5
300	31	9,452	-41.0		260	43.7
250	31	10,665	-49.9		258	50.5
200	30	12,099	-58.2		264	48.8
175	30	12,933	-60.1			
150	29	13,890	-62.4			
125	26	15,008	-65.5			
100	24	16,354	-68.4			
80	23	17,685	-69.2			
60	19	19,410	-65.9			
50	18	20,527	-63.1			
40	14	21,914	-60.2			
30	11	23,712	-58.6			
20						
15						

	SAN DIEGO, CALIF. (1004 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	124	12.5	60	37	1.9
1,000	31	156	14.3	51	31	2.5
950	31	594	15.2		23	3.3
900	31	1,047	13.1		19	3.1
850	31	1,525	10.5		16	4.1
800	31	2,027	7.7		13	6.0
750	31	2,565	5.0		7	8.0
700	31	3,117	2.2		355	9.1
650	31	3,718	- 1.5		350	11.5
600	31	4,344	- 5.7		347	11.8
550	31	5,023	-10.7		334	13.6
500	31	5,747	-15.9		330	15.2
450	31	6,541	-21.6		324	15.3
400	30	7,389	-28.0		321	17.9
350	29	8,332	-35.6		319	20.4
300	29	9,385	-43.7		311	24.7
250	29	10,587	-51.6		300	31.3
200	29	12,013	-57.6		293	33.8
175	28	12,853	-58.5		288	31.3
150	28	13,817	-60.2		285	30.1
125	28	14,945	-63.1		286	28.9
100	27	16,305	-66.3		293	21.4
80	26	17,652	-66.5		307	13.8
60	24	19,401	-64.7		333	10.7
50	24	20,519	-62.8		349	8.4
40	22	21,893	-62.3		330	8.4
30	20	23,682	-59.9		335	10.7
20	14	26,225	-57.4			
15						

	SAN JUAN, P. R. (1016 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	6	22.9	84	101	6.0
1,000	31	151	23.3	77	97	12.4
950	31	600	20.3	81	83	19.2
900	31	1,063	17.1	82	84	19.6
850	31	1,549	14.2	78	84	19.2
800	31	2,059	11.7	71	81	15.5
750	31	2,600	9.0	63	84	15.7
700	31	3,166	6.9	47	81	13.8
650	31	3,779	4.2		82	11.8
600	31	4,418	.6		74	9.1
550	31	5,111	- 3.8		67	7.2
500	30	5,858	- 8.6		64	5.8
450	30	6,675	-14.4		35	4.3
400	30	7,547	-20.9		306	5.6
350	29	8,517	-27.9		284	16.9
300	29	9,606	-35.6		281	28.9
250	28	10,849	-44.7		271	44.3
200	28	12,304	-55.5		274	44.3
175	28	13,143	-61.2		274	37.5
150	27	14,084	-66.5		277	30.7
125	22	15,172	-72.6		280	18.6
100	18	16,457	-78.0		295	9.1
80	17	17,731	-77.0		72	3.7
60	17	19,418	-66.8		77	8.0
50	17	20,531	-62.5		97	10.7
40	16	21,927	-57.1		84	11.3
30	14	23,755	-54.3		107	7.0
20	6	26,407	-47.1			
15						

	SANTA MARIA, CALIF. (1012 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	74	10.8	60	70	2.1
1,000	31	173	14.0	51	40	4.1
950	31	615	15.6	31	6	9.1
900	31	1,064	13.5	29	12	10.7
850	31	1,543	11.1	27	6	10.9
800	31	2,046	8.3		3	11.7
750	31	2,586	5.5		357	13.4
700	31	3,136	2.1		344	11.8
650	31	3,734	- 1.8		333	11.5
600	31	4,362	- 6.0		325	11.5
550	31	5,040	-10.9		326	12.6
500	31	5,762	-15.9		321	14.2
450	31	6,556	-21.4		329	13.4
400	31	7,405	-28.2		326	13.4
350	31	8,348	-35.8		323	15.7
300	30	9,398	-44.1		319	18.3
250	30	10,596	-52.8		303	22.1
200	28	12,018	-58.2		301	27.2
175	27	12,859	-58.6		290	21.2
150	24	13,825	-58.7		287	21.8
125	23	14,964	-61.8		291	17.3
100	23	16,333	-64.8		300	14.4
80	22	17,688	-65.4		310	9.9
60	21	19,445	-63.7		345	10.9
50	20	20,568	-62.5		25	11.7
40	19	21,946	-61.8		22	18.6
30	18	23,735	-60.3		21	17.3
20	6	26,339	-57.5			
15						

	SANTA MONICA, CALIF. (1015 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	38	14.7	58	352	3.3
1,000	31	163	16.1	49	344	3.9
950	31	602	16.6	27	350	5.4
900	31	1,057	14.2	25	7	3.7
850	31	1,537	11.6	24	23	5.2
800	31	2,041	8.6	24	24	7.4
750	31	2,575	5.5	25	14	9.3
700	31	3,132	1.8		4	10.9
650	31	3,728	- 2.0		352	12.2
600	31	4,356	- 6.3		344	13.6
550	31	5,032	-11.0		333	14.2
500	31	5,756	-16.3		329	15.2
450	31	6,546	-22.4		322	15.3
400	31	7,393	-29.0		327	18.8
350	31	8,331	-36.8		317	20.2
300	31	9,377	-45.0		317	21.6
250	29	10,573	-53.4		315	30.3
200	27	11,985	-58.4		301	30.5
175	27	12,822	-59.1		299	31.7
150	27	13,783	-60.6		296	26.6
125	26	14,911	-63.0		296	24.5
100	25	16,271	-66.1		302	17.5
80	25	17,620	-66.1		314	13.0
60	23	19,367	-63.8		349	10.9
50	22	20,483	-62.8		358	9.5
40	21	21,860	-60.9		352	8.7
30	19	23,648	-59.5		316	9.3
20	16	26,192	-57.3			
15	5	27,944	-58.2			

	S. STE. MARIE, MICH. (986 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	221	- 5.8	87	103	1.7
1,000	31	108				
950	31	514	- 6.6	73	217	2.5
900	31	931	- 7.5	76	254	9.1
850	31	1,375	- 8.7	74	270	14.4
800	31	1,844	- 9.5	66	272	19.2
750	31	2,345	-11.0	61	273	22.5
700	31	2,869	-12.8	59	274	26.6
650	31	3,437	-15.1	56	272	29.3
600	31	4,033	-18.4	55	269	33.2
550	31	4,680	-22.2	52	268	37.5
500	30	5,379	-26.5	49	269	38.9
450	29	6,133	-31.8	47	267	40.8
400	29	6,947	-37.4	50	269	41.6
350	28	7,857	-43.7		268	45.1
300	28	8,878	-50.0		272	50.1
250	27	10,046	-54.0		274	55.4
200	27	11,474	-54.4		273	60.6
175	24	12,325	-55.0		271	61.4
150	24	13,305	-56.6		273	54.4
125	23	14,456	-57.5		274	54.8
100	21	15,876	-59.4		272	55.0
80	18	17,275	-60.4		275	51.5
60	14	19,071	-62.0		280	46.2
50	14	20,195	-63.0		277	47.8
40	11	21,571	-63.9		281	45.8
30	8	23,341	-64.3			
20						
15						

	SEATTLE, WASH. (1006 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	124	4.7	89	196	7.6
1,000	31	173			193	7.2
950	31	595	5.0	73	214	18.3
900	31	1,032	3.1	70	229	19.4
850	31	1,493	1.6	66	239	20.4
800	31	1,980	- .8	61	254	20.2
750	31	2,500	- 3.5	55	264	22.5
700	31	3,035	- 6.6	45	272	26.2
650	31	3,617	-10.0	43	275	30.9
600	30	4,224	-13.7	43	279	34.4
550	30	4,885	-17.9	43	281	36.1
500	30	5,585	-22.7	44	282	41.6
450	30	6,358	-27.9	46	284	46.0
400	30	7,186	-33.9	50	282	49.5
350	30	8,107	-40.7		284	54.0
300	30	9,139	-47.9		289	59.2
250	30	10,321	-54.6		289	58.9
200	29	11,733	-58.6		293	58.5
175	27	12,567	-57.1		292	54.2
150	24	13,534	-57.2		289	48.4
125	19	14,694	-58.6		287	47.4
100	15	16,072	-59.6		288	40.4
80	15	17,463	-60.2		289	38.5
60	8	19,267	-58.3			
50	7	20,416	-59.0			
40						
30						
20						
15						

	SHREVEPORT, LA. (1010 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	76	11.5	73	220	2.9
1,000	31	159	12.7	67	224	3.7
950	31	596	11.7	62	237	11.7
900	31	1,042	10.9	57	253	13.8
850	31	1,518	9.0	52	260	16.3
800	31	2,018	6.8	48	261	19.2
750	31	2,551	4.2	44	264	21.4
700	31	3,104	1.4	40	266	24.1
650	30	3,702	- 1.8	31	268	25.1
600	30	4,328	- 5.7		265	26.8
550	30	5,004	-10.2		262	29.9
500	30	5,731	-14.9		264	34.0
450	30	6,527	-20.7		262	38.9
400	30	7,379	-27.0		257	42.9
350	30	8,326	-34.5		259	47.8
300	30	9,384	-42.8		255	51.5
250	30	10,587	-51.6		256	58.7
200	29	12,013	-58.7		254	63.1
175	28	12,854	-59.8		254	60.8
150	27	13,812	-61.7		258	55.6
125	24	14,925	-64.7		260	49.0
100	21	16,272	-67.8		264	40.6
80	21	17,610	-68.1		263	31.3
60	20	19,341	-65.7		270	21.4
50	18	20,458	-63.5		266	20.4
40	18	21,833	-61.5		267	23.1
30	16	23,624	-60.0		266	30.9
20	6	26,144	-58.5			
15	5	27,935	-57.9			

	SPOKANE, WASH. (935 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	722	- 0.6	89	214	5.2
1,000	31	181				
950	31	592				
900	31	1,027	- .1	77	216	13.4
850	31	1,485	.0	70	237	18.6
800	31	1,969	- 1.5	64	255	20.0
750	31	2,486	- 3.9	61	271	20.8
700	31	3,023	- 7.1	57	283	23.5
650	31	3,603	-10.3	51	286	27.6
600	31	4,210	-14.1	50	290	32.4
550	31	4,865	-18.6	50	291	34.4
500	30	5,561	-23.5	48	286	36.7
450	30	6,329	-28.8	50	296	39.6
400	30	7,156	-34.8	52	297	42.5
350	30	8,074	-41.3		302	40.6
300	30	9,102	-48.3		311	48.8
250	29	10,285	-55.4		312	45.6
200	29	11,690	-58.3		310	43.9
175	27	12,528	-56.9		303	39.8
150	26	13,509	-56.9		297	36.9
125	25	14,661	-58.5		298	39.4
100	24	16,065	-59.0		302	34.8
80	20	17,466	-59.1		301	28.9
60	17	19,269	-59.9		315	31.7
50	16	20,397	-59.6		314	27.0
40	10	21,785	-59.7		317	25.6
30	[illegible]	23,567	-62.5			
20	5	26,124	-63.0			
15						

	SWAN ISLAND, W. I. (1015 MB.)					
Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	10	25.5	78	56	9.1
1,000	31	145	24.4	78	52	14.0
950	31	592	20.9	82	65	16.3
900	31	1,060	17.9	77	71	15.7
850	31	1,548	14.8	74	77	13.8
800	31	2,059	12.0	67	76	12.8
750	31	2,599	9.6	59	77	12.4
700	31	3,168	7.0	51	82	13.4
650	31	3,783	4.1	39	85	11.7
600	30	4,421	.6	36	81	9.7
550	30	5,114	- 3.1		75	7.0
500	28	5,864	- 7.6		73	4.5
450	27	6,684	-13.2		70	1.0
400	26	7,562	-20.0		277	1.2
350	25	8,536	-27.8		257	6.6
300	25	9,623	-36.5		248	12.6
250	25	10,858	-46.6		230	22.1
200	23	12,305	-56.3		219	34.6
175	23	13,144	-60.8		227	37.3
150	23	14,090	-65.5		230	33.0
125	20	15,192	-70.9		235	26.0
100	17	16,486	-76.7		225	10.3
80	10	17,786	-76.1			
60	7	19,473	-65.9			
50	7	20,593	-61.5			
40	7	21,990	-56.9			
30	6	23,833	-52.4			
20						
15						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

Standard pressure surface (mb.)	TAMPA, FLA. (1021 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	7	17.2	80	40	1.9
1,000	31	186	18.3	71	67	2.9
950	31	628	15.7	71	143	2.3
900	31	1,082	13.0	68	214	2.7
850	31	1,560	10.8	60	240	4.7
800	31	2,064	9.6	41	247	5.8
750	31	2,606	7.6		247	8.9
700	31	3,164	4.9		231	9.1
650	31	3,770	1.6		241	9.3
600	31	4,404	-2.5		251	11.3
550	30	5,090	-7.0		253	15.5
500	30	5,824	-12.3		253	19.0
450	30	6,632	-18.0		255	25.4
400	29	7,493	-24.2		259	28.6
350	29	8,453	-31.7		260	26.6
300	29	9,524	-40.4		265	25.1
250	29	10,741	-49.9		265	27.4
200	26	12,181	-58.0		264	32.1
175	25	13,015	-61.1		260	35.0
150	25	13,966	-63.8		259	35.9
125	24	15,072	-67.9		261	31.7
100	24	16,397	-72.1		263	24.5
80	24	17,707	-72.6		269	14.4
60	24	19,416	-66.7		263	8.5
50	22	20,530	-61.3		273	9.3
40	22	21,926	-58.1		280	11.8
30	18	23,764	-56.0		264	19.0
20	7	26,345	-52.9			

Standard pressure surface (mb.)	TATOOSH ISLAND, WASH. (1015 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	31	6.2	89	163	6.6
1,000	31	154	6.1	82	190	8.2
950	31	574	3.9	81	227	10.7
900	31	1,010	1.8	79	240	15.2
850	31	1,470	.3	74	250	19.2
800	31	1,955	-1.2	64	260	24.1
750	31	2,469	-3.8	59	264	26.4
700	31	3,008	-6.9	53	267	30.5
650	31	3,585	-10.3	52	271	34.2
600	31	4,195	-13.7	52	272	36.5
550	31	4,850	-17.8	54	272	42.2
500	31	5,557	-22.4	53	274	42.3
450	29	6,326	-28.1	52	273	47.6
400	28	7,155	-33.7	51	276	46.8
350	28	8,078	-39.9		283	52.6
300	28	9,115	-46.6		277	49.3
250	28	10,305	-53.5		277	43.7
200	28	11,720	-58.1		279	45.3
175	28	12,562	-56.6		280	44.7
150	28	13,541	-55.9		279	43.1
125	26	14,700	-56.9		281	34.0
100	25	16,108	-57.7		292	34.4
80	25	17,513	-58.5		294	33.6
60	25	19,323	-58.2		307	29.1
50	25	20,468	-58.9		313	25.6
40	21	21,860	-59.5		310	33.4
30	16	23,633	-60.1		328	26.6
20	5	26,062	-62.7			

Standard pressure surface (mb.)	TOPEKA, KANS. (986 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	270	1.6	76	309	2.1
1,000	31	154				
950	31	574	2.9	60	308	5.8
900	31	1,007	3.0	53	305	10.1
850	31	1,470	3.0	44	302	11.8
800	31	1,960	1.7	35	297	13.8
750	31	2,484	-.8	38	292	16.3
700	31	3,026	-3.6	37	294	20.4
650	31	3,611	-6.8	34	295	23.3
600	31	4,229	-10.3		291	28.4
550	31	4,899	-14.3		292	30.1
500	30	5,612	-18.7		285	32.8
450	30	6,397	-24.4		281	35.5
400	30	7,236	-30.9		283	37.3
350	29	8,168	-38.0		281	40.2
300	29	9,210	-45.9		278	43.9
250	29	10,399	-53.7		275	46.8
200	29	11,813	-57.7		270	51.9
175	29	12,652	-58.2		269	52.6
150	29	13,620	-59.0		273	55.6
125	28	14,757	-60.8		273	49.3
100	27	16,133	-62.9		279	39.8
80	26	17,501	-62.7		284	31.5
60	25	19,276	-63.0		288	24.1
50	22	20,392	-62.9		291	26.6
40	16	21,759	-62.1		287	24.1
30	8	23,539	-60.5			
20						

Standard pressure surface (mb.)	TUCSON, ARIZ. (929 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	781	12.1	35	138	1.6
1,000	31	152				
950	31	592				
900	31	1,045	13.5	28	13	1.4
850	31	1,524	10.4	32	107	1.4
800	31	2,025	7.2	33	169	1.6
750	31	2,556	4.0	35	199	1.4
700	31	3,110	.8	31	320	1.7
650	31	3,705	-2.6		318	4.5
600	31	4,332	-6.5		309	8.4
550	31	5,006	-10.9		297	11.8
500	31	5,732	-15.8		298	13.8
450	31	6,521	-21.7		292	17.3
400	31	7,375	-28.3		288	20.8
350	31	8,317	-35.6		283	24.5
300	31	9,372	-43.0		276	32.4
250	31	10,579	-50.5		271	40.2
200	31	12,011	-56.3		269	45.3
175	31	12,856	-57.3		270	41.8
150	31	13,826	-59.5		269	35.5
125	31	14,957	-63.0		269	31.1
100	30	16,315	-66.1		278	25.6
80	30	17,663	-66.5		285	18.3
60	29	19,416	-63.9		300	8.4
50	29	20,534	-63.0		298	8.4
40	27	21,913	-60.8		291	10.1
30	18	23,708	-59.7		296	10.1
20	7	26,249	-57.6			

Standard pressure surface (mb.)	WASHINGTON, D. C. (1007 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	88	6.5	75	276	1.7
1,000	31	149			221	1.6
950	31	575	7.2	62	257	12.6
900	31	1,016	5.8	61	259	19.8
850	31	1,482	3.6	60	263	22.0
800	31	1,972	1.4	59	270	24.9
750	31	2,495	1.0	56	267	28.2
700	31	3,038	-3.2	48	268	31.7
650	31	3,626	-6.6	48	267	35.0
600	31	4,242	-10.3	43	269	39.4
550	31	4,909	-14.0	43	272	42.9
500	31	5,625	-18.6	43	269	46.2
450	31	6,409	-24.0	43	270	51.5
400	31	7,252	-29.9	46	267	52.3
350	31	8,189	-37.0	47	271	54.4
300	31	9,237	-44.6		270	59.8
250	31	10,434	-52.5		268	62.0
200	31	11,853	-58.5		272	67.0
175	31	12,690	-59.2		272	63.9
150	31	13,654	-59.5			
125	30	14,785	-61.8			
100	28	16,156	-64.2			
80	28	17,519	-64.5			
60	27	19,277	-63.4			
50	26	20,393	-63.3			
40	25	21,767	-62.2			
30	19	23,534	-61.7			
20						

Standard pressure surface (mb.)	WINNEMUCCA, NEV. (876 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	1,310	-1.9	65	231	1.6
1,000	31	231				
950	31	653				
900	31	1,090				
850	31	1,550	3.7	44	233	2.5
800	31	2,041	2.4	38	262	6.8
750	31	2,569	-.1	36	290	9.1
700	31	3,110	-3.1	38	308	12.6
650	31	3,701	-6.6	34	315	15.7
600	31	4,313	-10.1	34	311	19.0
550	31	4,981	-14.4		313	22.3
500	31	5,694	-18.9		307	27.4
450	30	6,493	-23.9		315	27.4
400	30	7,330	-30.3		316	29.7
350	30	8,264	-37.8		321	31.1
300	30	9,308	-46.2		326	32.8
250	28	10,505	-54.6		329	29.3
200	27	11,915	-59.6		321	31.3
175	27	12,751	-59.3		314	27.6
150	27	13,717	-59.3		310	25.3
125	27	14,855	-60.8		314	25.3
100	27	16,236	-62.5		315	21.2
80	27	17,610	-63.2		318	22.5
60	27	19,383	-61.6		333	20.0
50	26	20,514	-62.1		343	18.3
40	25	21,901	-61.6		338	17.9
30	15	23,676	-61.1		344	17.9

Standard pressure surface (mb.)	YAKUTAT, ALASKA (1003 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	12	-3.2	87	104	7.2
1,000	31	38			99	5.6
950	31	454	-2.2	72	106	9.1
900	31	875	-4.4	70	127	6.6
850	31	1,323	-6.6	68	159	3.1
800	31	1,795	-9.3	69	162	2.9
750	31	2,297	-12.1	65	252	2.5
700	31	2,815	-15.4	58	278	6.4
650	31	3,379	-18.7	50	270	10.3
600	31	3,964	-22.3	48	264	14.8
550	31	4,605	-26.3	45	267	20.4
500	31	5,281	-30.6	40	266	25.4
450	31	6,031	-35.7	41	268	28.0
400	31	6,832	-41.2		268	31.7
350	31	7,727	-46.9		260	37.1
300	31	8,737	-51.3		264	45.3
250	31	9,913	-53.6		270	49.7
200	31	11,353	-51.8		279	49.9
175	31	12,219	-51.3		280	46.4
150	29	13,226	-52.4		285	54.2
125	28	14,406	-52.7		284	55.9
100	27	15,849	-53.5			
80	25	17,284	-53.7			
60	23	19,135	-55.8			
50	21	20,300	-56.7			
40	16	21,709	-58.2			
30	12	23,496	-60.0			

Standard pressure surface (mb.)	YUMA, ARIZ. (1006 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	105	15.7	25	5	3.1
1,000	31	153	16.5	21	7	4.3
950	31	591	15.7	20	357	8.4
900	31	1,045	12.9	23	8	7.4
850	31	1,522	9.8	26	32	5.1
800	31	2,022	7.1	28	20	6.6
750	31	2,554	4.3	27	1	5.4
700	31	3,108	1.3		357	8.0
650	31	3,701	-2.3		335	7.4
600	31	4,331	-6.2		332	8.7
550	30	5,004	-11.0		330	10.5
500	30	5,730	-16.3		327	13.2
450	29	6,513	-22.0		320	14.6
400	26	7,371	-28.5		314	16.7
350	22	8,310	-36.0		295	18.6
300	21	9,356	-44.1		299	17.5
250	16	10,571	-51.6		281	29.3
200	16	12,001	-56.4		283	27.6
175	16	12,847	-57.1		281	31.9
150	12	13,807	-58.3		287	26.2
125	12	14,944	-62.0		282	20.4
100	7	16,291	-65.1			
80	5	17,640	-65.3			
60						
50						
40						
30						

Standard pressure surface (mb.)	* DENVER, COLO. (835 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	14	1,661	21.4		167	4.3
1,000	14	60				
950	14	524				
900	14	1,006				
850	14	1,506				
800	14	2,032	20.9		169	7.4
750	14	2,594	17.2		179	7.4
700	14	3,171	12.7		203	7.0
650	14	3,792	7.8		234	6.8
600	14	4,443	2.6		251	7.2
550	14	5,140	-2.9		259	12.2
500	14	5,889	-8.7		252	15.7
450	14	6,707	-14.6		252	22.3
400	14	7,580	-20.3		253	27.6
350	14	8,553	-27.9		255	34.0
300	14	9,640	-36.1		247	37.1
250	14	10,876	-46.3		251	41.2
200	14	12,323	-56.1		250	42.9
175	14	13,166	-59.0		242	37.5
150	14	14,123	-62.9		257	30.1
125	14	15,238	-65.7		243	22.0
100	13	16,589	-65.4		236	9.7
80	13	17,957	-61.8		118	1.2
60	12	19,755	-57.4		91	9.7
50	12	20,910	-55.7		91	10.5
40	11	22,339	-53.8		90	18.8
30	11	24,196	-51.0		90	22.0
20	9	26,857	-48.3			
15	9	28,766	-45.5			
10	6	31,500	-43.3			

Standard pressure surface (mb.)	* OGDEN, UTAH (854 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	7	1,450	25.4			
1,000	7	34				
950	7	497				
900	7	981				
850	7	1,487	25.5			
800	7	2,016	21.7			
750	7	2,577	16.8			
700	7	3,153	11.6			
650	7	3,776	5.9			
600	7	4,415	.1			
550	7	5,109	-5.8			
500	7	5,843	-11.9			
450	7	6,650	-17.8			
400	7	7,510	-24.4			
350	7	8,467	-32.0			
300	7	9,537	-40.3			
250	7	10,756	-48.6			
200	7	12,199	-54.9			
175	7	13,049	-55.4			
150	7	14,030	-56.8			
125	7	15,180	-58.7			
100	6	16,576	-59.6			
80	6	17,972	-58.6			
60	6	19,796	-55.6			
50	6	20,963	-53.3			
40	5	22,413	-51.1			
30	5	24,296	-48.5			
20						
15						
10						

Standard pressure surface (mb.)	* RANTOUL, ILL. (988 MB.)					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	227	21.5	79	190	1.7
1,000	31	123				
950	31	580	22.4	71	228	6.0
900	31	1,041	19.8	67	257	7.6
850	31	1,532	16.7	66	275	9.7
800	31	2,046	14.1	55	285	11.8
750	31	2,597	10.9	53	294	15.0
700	31	3,160	7.2	53	296	16.7
650	31	3,772	3.3	52	296	19.4
600	31	4,410	-.7	53	299	20.8
550	31	5,103	-4.5	49	297	25.1
500	31	5,845	-8.8	44	296	24.5
450	31	6,661	-14.2	43	291	26.8
400	31	7,536	-20.2		286	31.7
350	31	8,510	-27.4		285	34.8
300	31	9,599	-35.8		280	38.3
250	31	10,839	-45.1		279	42.7
200	31	12,293	-55.0		275	44.7
175	31	13,136	-59.3		279	43.7
150	31	14,092	-62.9		279	37.7
125	31	15,206	-64.9		283	28.9
100	30	16,564	-63.9		279	16.7
80	30	17,939	-61.0		302	7.8
60	30	19,742	-57.0		38	3.1
50	30	20,901	-54.8		77	7.8
40	30	22,334	-52.6		81	13.0
30	30	24,203	-50.1		89	18.6
20	26	26,859	-47.3		94	22.1
15	13	28,736	-45.7		98	22.3
10	8	31,437	-44.9			

* Air Force Data for August 1956..

Note: All observations scheduled at 0300, G.C T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor-pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Table 30 Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. DECEMBER 1956

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
TABLE MOUNTAIN, CALIF.									
	Air mass								
	5.0	4.0	3.0	2.0	*0.75	2.0	3.0	4.0	5.0
Dec.									
1	----	----	----	1.51	----	----	----	----	----
2	----	----	----	1.55	----	----	----	----	----
3	1.14	1.23	1.34	1.47	----	----	----	----	----
8	----	----	----	1.58	----	----	----	----	----
9	----	----	----	1.60	----	----	----	----	----
14	----	----	----	1.50	----	----	----	----	----
19	----	----	----	1.50	----	----	----	----	----
20	----	----	----	1.57	----	----	----	----	----
24	----	----	----	1.55	----	----	----	----	----
26	----	----	----	1.57	----	----	----	----	----
28	----	----	----	1.56	----	----	----	----	----
Averages	1.14	1.23	1.34	1.54	----	----	----	----	----
MADISON, WIS.									
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0
Dec.									
13	----	----	----	----	M1.15	----	M1.18	M1.04	M0.94
Averages	----	----	----	----	1.15	----	1.18	1.04	.94

Date	Sun's zenith distance								
	A. M.				0.0°	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
BLUE HILL, MASS.									
	Air mass								
	4.86	3.89	2.92	1.94	Noon	1.94	2.92	3.89	4.86
Dec.									
1	----	----	----	----	----	----	----	0.79	0.67
10	----	----	----	----	1.13	----	----	----	----
11	----	0.99	----	----	----	----	----	----	----
17	0.80	.88	1.00	----	----	----	----	----	----
18	----	----	----	----	----	----	----	1.05	1.00
19	.96	1.09	1.23	----	1.30	----	1.20	1.10	----
25	.75	----	----	----	----	----	----	----	----
26	.97	1.08	1.19	----	1.23	----	1.11	.97	.86
30	----	1.09	1.19	----	1.31	----	1.22	1.08	.97
Averages	.87	1.03	1.15	----	1.24	----	1.18	1.00	.88
WASHINGTON, D. C. (WBCO)									
	Air mass								
	4.96	3.97	2.98	1.99	Noon	1.99	2.98	3.97	4.96
Dec.									
10	SK0.93	SK1.00	----	----	----	----	----	----	----
18	----	----	----	----	M1.05	----	----	S1.06	S0.97
31	----	----	----	----	----	----	S1.14	S1.02	S .90
Averages	.93	1.00	----	----	1.05	----	1.14	1.04	.94
ALBUQUERQUE, N. MEX.									
	Air mass								
	5.0	4.0	3.0	2.0	Noon	2.0	3.0	4.0	5.0

Recorder Inoperative During December, 1956

* Extrapolated
M Moderate haze, indeterminable
SK Slight smoke
S Slight haze, indeterminable

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed in Table 30 appears in Monthly Weather Review, Volume 75 No. 3, March 1947, p. 47.

Table 31

SOLAR RADIATION DATA

DECEMBER 1956

Daily totals and average daily totals by weeks of solar and sky radiation, plus the radiation reflected from the ground, as received on a vertical surface facing south at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-----------	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys-------	19	367	283	198	34	330	6	177	416	126	252	9	10	28	275	159	272	263	529	240	20	18	15	194
Date-----------	24	25	26	27	28	29	30	31	Avg.															
Langleys-------	11	226	528	148	195	20	614	94	230															

Daily totals and average daily totals by weeks of diffuse (sky) radiation as received on a horizontal surface at Blue Hill, Mass. during the month

								Avg								Avg								Avg
Date-----------	3	4	5	6	7	8	9		10	11	12	13	14	15	16		17	18	19	20	21	22	23	
Langleys-------	36	62	83	77	60	83	11	59	71	85	83	23	15	40	72	56	64	66	38	79	44	46	27	52
Date-----------	24	25	26	27	28	29	30	31	Avg.															
Langleys-------	27	64	39	88	104	50	48	63	60															

Note: Langley is the unit used to denote one gram calorie per square centimeter.

NET RADIATION

Table 32.--Net radiation in langleys per day (midnight to midnight) at Raleigh, N. C., during the month

DECEMBER 1956

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	52	85	26	72	50	72	44	68	58	24	*-8	54	70	*10	*28	90	14	-32	47	17	12	*5	*12	*23	32	86	1	47	*14	4	88	38

* Estimated values owing to occurrence of rain during period. While rain is falling, radiation is assumed to be zero

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of alfalfa. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the North Carolina State College at Raleigh. The instrument with which they were measured has not been checked by the Weather Bureau.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys. - Continued DECEMBER 1956

1956	Little Rock, Ark.	Los Angeles, Calif. (urban)	Los Angeles, Calif.	Madison, Wis.	Matanuska, Alaska	Medford, Ore.	Miami, Fla.	Midland, Tex.	Nashville, Tenn.	Newport, R. I.	New York, N. Y.	Oak Ridge, Tenn.	Oklahoma City, Okla.	Ottawa, Ontario	Phoenix, Ariz.	Portland, Me.	Prosser 4 NE, Wash.	Rapid City, S. Dak.	Riverside, Calif.	St. Cloud, Minn.	San Antonio, Tex.	Santa Maria, Calif.	S. Ste. Marie, Mich.	Sayville, N. Y.	Schenectady, N. Y.	Seabrook, N. J.	Seattle, Wash. (U. of W.)	Seattle-Tacoma, Wash.	Spokane, Wash.	State College, Pa.	Tampa, Fla.	Toronto, Ontario	Tucson, Ariz.	Upton, N. Y.	Wake Island Pacific Area	Washington, D. C. (Silver Hill Obs.)	Winnipeg, Manitoba
Dec. 3------	236	233	204	174	52	49	426	243	258	81	150	140	311	85	320	31	70	207	293	90	360	216	63	80	45	167	7	16	64	226	306	44	356	282	486	170	89
Dec. 4------	135	209	171	144	12	144	416	278	205	209	211	225	268	195	322	173	154	44	231	133	184	196	50	150	141	237	87	82	140	211	370	146	338	258	306	240	29
Dec. 5------	182	68	123	66	28	97	363	180	131	161	153	194	346	100	309	169	105	114	75	29	191	117	25	118	99	134	50	64	54	163	357	67	261	225	511	134	74
Dec. 6------	97	224	---	0	15	85	241	234	97	101	117	146	80	35	241	60	117	(127)	238	83	150	229	24	(72)	71	176	155	153	133	106	338	18	---	88	481	191	139
Dec. 7------	51	319	305	3	21	103	407	178	68	113	131	164	95	79	88	46	176	180	274	156	136	307	94	158	27	---	137	133	86	62	347	31	185	219	489	166	144
Dec. 8------	38	(310)	297	43	20	48	297	76	141	167	149	169	141	100	333	138	131	218	336	119	227	323	82	163	119	151	14	17	53	42	366	59	276	158	492	161	122
Dec. 9------	145	(325)	317	134	13	60	382	74	26	17	10	24	348	146	266	35	35	209	330	153	245	327	91	13	299	17	12	8	33	37	379	143	280	26	410	28	132
Average-------	126	(241)	236	81	23	84	362	180	132	122	132	152	227	106	268	93	113	(157)	254	109	213	245	61	(108)	114	147	66	67	80	121	352	72	283	179	454	156	104
Dec. 10------	225	303	293	49	31	10	359	202	248	221	196	219	141	164	307	138	76	107	340	47	355	301	83	133	124	231	9	25	141	186	227	125	302	291	438	253	45
Dec. 11------	64	241	242	123	---	23	380	304	59	128	59	101	194	51	284	118	65	71	291	129	331	(277)	47	65	59	---	13	20	206	54	---	41	316	77	410	83	80
Dec. 12------	45	261	253	21	34	53	251	230	41	112	120	142	---	134	305	101	59	232	313	122	295	292	98	122	122	126	21	32	30	147	326	120	339	9	469	128	113
Dec. 13------	32	268	233	201	33	96	(296)	334	24	46	40	51	96	161	302	49	86	(133)	321	68	366	286	189	40	63	42	---	29	53	62	346	139	334	28	323	84	87
Dec. 14------	54	256	239	72	31	94	293	314	73	15	9	28	185	89	311	56	117	130	314	59	371	296	72	17	15	3	36	68	100	21	297	33	332	133	488	20	124
Dec. 15------	67	280	260	45	6	49	291	335	149	37	24	44	282	(42)	315	73	60	187	344	47	336	(298)	43	27	57	19	29	18	21	31	342	43	326	64	435	25	138
Dec. 16------	212	289	268	31	6	76	244	312	233	135	140	170	299	80	309	167	151	115	332	83	210	297	68	152	53	156	42	114	130	62	253	30	332	238	469	118	99
Average-------	100	271	256	77	24	57	(302)	290	118	99	84	108	200	(103)	305	100	88	(140)	322	79	323	(292)	86	79	70	96	25	44	97	81	298	76	326	120	433	102	98
Dec. 17------	53	300	292	31	30	93	260	298	94	140	97	146	199	20	311	196	46	220	345	174	152	297	91	130	44	38	13	18	33	148	284	27	215	220	450	67	139
Dec. 18------	112	295	288	163	10	67	339	190	221	184	203	210	83	(192)	281	148	91	208	325	48	45	301	102	234	166	185	61	70	117	220	292	191	217	240	234	209	59
Dec. 19------	38	285	271	91	6	20	304	155	89	223	152	212	31	(169)	299	197	162	205	322	155	68	298	61	218	163	197	79	90	133	184	270	130	329	114	487	236	48
Dec. 20------	151	296	289	70	36	20	362	145	51	202	173	198	117	43	305	137	77	212	315	179	346	306	141	213	47	136	19	(33)	25	88	315	111	331	21	439	163	109
Dec. 21------	30	263	231	11	5	114	366	317	108	27	64	42	295	155	305	76	159	215	313	159	186	294	105	63	68	47	121	70	146	33	333	129	336	118	436	113	44
Dec. 22------	12	289	289	36	10	121	378	311	60	44	13	52	117	51	297	75	89	153	337	23	312	301	48	36	20	10	43	29	56	33	354	12	337	30	490	39	62
Dec. 23------	136	295	289	1	2	99	408	333	86	31	31	66	245	29	316	39	49	134	338	102	355	298	31	46	85	11	32	40	41	25	323	27	352	82	396	22	(134)
Average-------	76	289	278	58	14	76	345	250	101	122	105	132	155	(94)	302	124	96	192	328	120	209	299	83	134	85	89	53	(50)	79	104	310	90	303	118	419	121	(85)
Dec. 24------	256	293	284	76	25	87	402	337	36	30	21	41	378	28	317	34	87	157	336	155	380	304	82	29	39	64	134	125	39	93	201	23	363	152	480	76	67
Dec. 25------	262	299	289	38	7	171	339	332	55	133	78	135	---	184	320	130	34	153	328	113	342	307	83	137	58	88	103	128	90	50	337	195	367	179	469	158	98
Dec. 26------	249	302	297	72	---	83	300	326	229	222	146	234	223	135	335	188	34	139	341	161	355	309	41	232	98	---	111	126	59	95	334	101	368	210	447	109	121
Dec. 27------	253	296	295	167	3	46	445	335	234	97	55	87	303	59	325	93	43	148	345	80	383	297	72	89	62	79	64	61	57	57	376	30	367	245	320	154	56
Dec. 28------	212	294	290	53	4	53	417	333	79	149	75	149	285	87	322	99	31	163	343	103	381	307	152	136	109	100	31	42	61	41	276	108	361	211	483	95	97
Dec. 29------	251	299	295	63	5	95	(334)	332	186	56	18	33	294	161	319	17	32	208	345	94	353	283	171	36	41	22	24	51	21	122	387	99	368	212	440	85	80
Dec. 30------	261	246	229	20	8	130	419	336	244	276	235	285	308	208	317	212	31	173	280	147	382	215	92	299	186	215	24	55	25	188	388	180	329	188	487	274	70
Dec. 31------	241	253	248	169	6	44	417	327	242	112	105	149	269	75	256	77	30	163	262	104	384	270	130	125	121	180	73	77	18	183	286	150	245	282	274	220	(140)
Average-------	248	285	278	82	8	89	(384)	332	163	134	92	139	294	117	314	106	40	163	323	120	370	287	103	135	89	107	71	83	46	104	323	111	346	210	425	146	(91)

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DECEMBER 1956

1956	Albuquerque, N.Mex.	Annette, Alaska	Apalachicola, Fla.	Astoria, Oreg.	Atlanta, Ga.	Barrow, Alaska	Bethel, Alaska	Bismarck, N. Dak.	Blue Hill, Mass.	Boise, Idaho	Boston, Mass.	Canton Island Pacific Area	Caribou, Me.	Charleston, S. C.	Cleveland, Ohio	Columbia, Mo.	Davis, Calif.	Dodge City, Kans.	E. Lansing, Mich.
Dec. 3------	312	81	367	28	351	-*-	47	45	40	92	17	585	177	342	221	245	203	309	188
Dec. 4------	323	103	365	54	310	---	8	47	185	51	163	660	137	321	218	135	30	228	193
Dec. 5------	144	105	345	94	318	---	11	80	165	89	163	608	173	317	115	166	143	(218)	64
Dec. 6------	281	50	331	157	292	---	35	125	132	175	100	635	26	308	154	9	196	124	34
Dec. 7------	276	18	353	61	288	---	51	190	65	195	46	682	36	301	32	53	239	286	35
Dec. 8------	245	36	343	22	316	---	41	191	191	206	168	637	57	305	30	19	240	168	29
Dec. 9------	235	6	---	17	92	---	14	97	19	148	8	645	71	296	76	291	225	---	132
Average-------	259	57	351	62	281	---	29	111	114	137	95	636	97	313	121	131	182	(222)	96
Dec. 10------	302	32	349	22	326	---	13	101	204	27	185	536	107	301	220	268	181	299	95
Dec. 11------	356	123	231	65	244	---	36	169	110	49	104	661	51	217	107	182	166	257	140
Dec. 12------	328	16	332	49	116	---	36	144	157	59	151	643	101	263	198	44	195	192	87
Dec. 13------	305	39	264	53	143	---	37	77	29	92	22	680	29	298	47	244	---	292	162
Dec. 14------	314	30	196	81	62	---	13	93	18	166	9	681	99	192	41	62	---	80	91
Dec. 15------	325	49	98	31	56	---	11	117	53	47	23	647	177	123	125	14	131	283	33
Dec. 16------	305	0	345	74	236	---	16	69	149	191	158	640	73	270	32	82	191	255	43
Average-------	319	41	259	54	169	---	23	110	103	90	93	641	91	238	110	128	173	237	93
Dec. 17------	313	0	274	35	301	---	17	188	149	194	137	626	86	281	186	108	121	286	24
Dec. 18------	284	0	106	89	247	---	25	142	135	146	142	649	109	238	156	264	181	274	202
Dec. 19------	316	9	109	112	107	---	33	165	225	191	199	679	79	176	153	39	116	178	126
Dec. 20------	320	70	121	86	75	---	36	164	136	221	106	666	138	205	51	60	35	292	43
Dec. 21------	320	95	262	104	116	---	7	35	50	204	42	662	60	201	34	59	204	293	46
Dec. 22------	289	18	242	26	66	---	33	38	48	164	35	634	150	165	64	73	238	57	25
Dec. 23------	330	8	(268)	43	29	---	32	134	47	104	36	673	57	192	91	21	209	300	41
Average-------	310	28	(197)	71	134	---	26	124	113	175	100	656	97	208	105	89	158	240	73
Dec. 24------	334	0	317	164	214	---	9	61	54	199	19	669	48	148	34	29	219	296	41
Dec. 25------	334	18	377	181	344	---	13	76	141	224	128	644	52	337	102	183	239	292	130
Dec. 26------	330	0	382	89	334	---	11	157	221	230	190	639	140	325	83	230	229	269	81
Dec. 27------	322	0	373	180	336	---	24	41	118	37	95	631	188	328	62	224	231	293	56
Dec. 28------	313	8	370	181	332	---	10	51	152	42	127	579	79	321	70	65	220	230	43
Dec. 29------	323	14	393	135	343	---	15	69	65	53	23	631	53	256	95	83	207	284	100
Dec. 30------	330	5	353	176	333	---	27	171	240	---	225	672	134	334	235	250	122	300	144
Dec. 31------	297	13	372	83	338	---	12	87	75	38	63	586	154	325	80	164	222	198	142
Average-------	323	7	367	149	322	---	15	89	133	118	109	631	106	297	95	153	211	270	92

1956	Edmonton, Alberta	El Paso, Tex.	Ely, Nev.	Fairbanks, Alaska	Ft. Worth, Tex.	Fresno, Calif.	Glasgow, Mont.	Grand Junction,Colo.	Grand Lake, Colo.	Great Falls, Mont.	Greensboro, N. C.	Griffin, Ga.	Hatteras, N. C.	Indianapolis, Ind.	Inyokern, Calif.	Lake Charles, La.	Lander, Wyo.	Las Vegas, Nev.	Lemont, Ill.
Dec. 3------	28	359	---	24	(301)	247	84	254	264	140	244	381	337	156	343	355	226	306	226
Dec. 4------	72	370	81	6	280	129	62	155	196	---	249	350	321	193	346	301	242	297	214
Dec. 5------	(92)	215	180	2	318	(129)	147	158	82	193	228	359	251	38	271	315	122	287	206
Dec. 6------	(88)	356	128	---	145	300	96	174	129	180	235	301	275	140	272	239	181	299	29
Dec. 7------	84	252	187	19	88	298	---	75	58	202	235	341	307	19	351	194	207	210	43
Dec. 8------	39	355	---	16	(33)	293	189	271	239	95	225	341	315	30	365	---	266	322	27
Dec. 9------	44	80	269	8	233	(293)	92	269	300	56	180	129	287	154	360	189	208	318	267
Average-------	(64)	284	169	12	(200)	(241)	111	194	181	144	228	315	299	104	330	266	207	291	145
Dec. 10------	(78)	128	128	6	319	228	65	214	162	158	249	365	301	155	320	354	143	290	223
Dec. 11------	(42)	332	57	4	188	230	---	109	101	55	150	300	126	132	296	104	174	249	175
Dec. 12------	54	303	218	6	312	192	134	191	220	88	83	144	297	154	324	189	240	289	66
Dec. 13------	76	325	189	9	83	229	70	206	233	148	75	206	252	133	321	55	247	285	189
Dec. 14------	34	353	214	11	314	189	125	260	140	104	31	40	288	34	327	64	267	282	88
Dec. 15------	33	344	270	4	335	216	65	249	256	43	44	56	224	40	338	304	188	296	46
Dec. 16------	90	347	193	11	335	55	88	82	166	112	125	303	217	21	321	334	154	296	36
Average-------	(58)	305	181	7	270	191	91	187	183	101	108	202	244	96	321	200	202	284	123
Dec. 17------	40	322	265	6	296	96	158	224	250	113	197	344	259	154	337	207	242	296	47
Dec. 18------	64	167	162	14	37	41	77	280	263	161	132	306	119	147	338	86	228	292	224
Dec. 19------	57	227	280	1	27	68	161	274	230	163	213	119	272	108	330	17	244	299	54
Dec. 20------	30	235	285	5	101	124	130	306	256	138	82	73	159	16	335	111	243	301	50
Dec. 21------	57	343	187	8	236	34	61	247	266	91	79	170	152	37	342	86	190	300	42
Dec. 22------	(52)	249	269	9	267	247	(138)	249	197	166	50	70	193	89	339	61	249	312	57
Dec. 23------	92	(359)	263	4	247	244	86	254	219	171	32	48	---	27	330	80	255	300	29
Average-------	(56)	(272)	244	7	173	122	(116)	262	240	143	112	161	192	83	336	93	236	300	72
Dec. 24------	61	369	260	4	348	233	161	149	246	124	120	203	120	14	338	387	224	295	70
Dec. 25------	47	364	299	8	347	239	133	249	262	169	252	390	327	4	335	378	224	299	90
Dec. 26------	34	365	266	6	340	244	114	252	274	93	230	382	269	95	341	361	201	305	77
Dec. 27------	56	366	271	3	340	239	114	252	202	115	206	387	309	146	343	363	205	304	197
Dec. 28------	68	361	259	3	339	236	94	246	225	169	230	377	312	38	337	366	206	304	139
Dec. 29------	52	367	259	4	(322)	233	150	248	266	145	173	352	124	172	333	376	229	301	193
Dec. 30------	76	369	221	---	343	178	140	251	262	100	194	377	295	226	266	357	212	262	137
Dec. 31------	41	361	250	11	331	223	67	223	268	153	208	391	306	153	332	362	224	282	219
Average-------	54	365	261	6	(339)	228	122	233	251	134	202	357	258	106	328	369	216	294	140

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

* Sun below horizon.

CONDENSED CLIMATOLOGICAL SUMMARY

Table 1

DELAYED DATA

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
May 1956										
Alaska	Beaver Falls	80	19	2 Stations	9	7+	Whittier	38.92	Eklutna Lake	0.00
June 1956										
Alaska	Haines 1S	82	9	Teller	13	1	Ketchikan	11.58	Teller	T
Hawaii	Puunene CAA AP	93	16	Kulani Mauka	34	1	Waikamoi Dam	29.45	21 Stations	.00
July 1956										
Alaska	Talkeetna CAA	90	14	3 Stations	26	19+	Little Port Walter	8.40	Northeast Cape	.20
Hawaii	Upolu Point USCG	99	27	Kulani Mauka	36	19+	Opana Mauka	31.48	Ukumehame	.00
August 1956										
Alaska	Circle Hot Springs	80	18	Barrow WB AP	21	29	Little Port Walter	28.08	Northway WB AP	.59
Hawaii	Puunene CAA	93	1+	Haleakala RS	44	13+	2 Stations	48.00	3 Stations	.00
September 1956										
Alaska	Haines 1S	86	9	Tok	-13	28	Yakutat WB AP	18.21	Tanalian Point	.18
Hawaii	Puunene CAA AP	94	10+	Mauna Loa Slope Obs.	29	1	Kahana	10.53	6 Stations	.00
October 1956										
Alaska	Beaver Falls	61	6	Allakaket	-29	20	Little Port Walter	24.76	2 Stations	.22
Hawaii	Puunene CAA AP	93	13	Mauna Loa Slope Obs.	30	31	Honomanu	32.55	Kaunakakai	.00
November 1956										
Hawaii	2 Stations	90	1+	Mauna Loa Slope Obs.	29	1+	Papaikou Mau	27.11	Puako	.44

See footnotes with current data.

CORRECTIONS

	Month:	May 1956
page 149:	Olympia, Wash.	total heating degree days accumulated through May should be 5780.
	Month:	August 1956
page 299:	Escanaba, Mich.	heating degree days July through August should be 133, September 478, October 900, and November 1793.
	Month:	September 1956
page 339:	Idaho Falls 46W, Idaho	(also page 295, August) elevation, ground, should be 4,933 ft.
page 343:	Bethel, Alaska	heating degree days should be 613.
page 363:	Omaha, Neb.	400 mb. temperature should be -24.5°C.
	Month:	October 1956
page 377:	Sacramento, Calif.	heating degree days July through October should be 153 and 502 for November.
	Month:	November 1956
page 403:	Oklahoma City, Okla.	heating degree days July through November should be 603.

RAWINSONDE DATA

Average monthly values

Table 20

1/ OGDEN, UTAH* (851 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,450	9.7	43	21	1.4
1,000	30	80				
950	30	522				
900	30	981				
850	30	1,454			28	1.6
800	30	1,956	7.0	43	293	1.6
750	30	2,488	2.9	50	268	3.9
700	30	3,037	- 1.5	55	261	5.4
650	30	3,627	- 6.1	58	272	7.2
600	30	4,243	-10.5	58	270	9.5
550	30	4,911	-15.2	56	272	10.9
500	30	5,619	-20.6	51	277	12.8
450	30	6,398	-26.4	49	274	12.6
400	30	7,229	-33.0	48	275	11.8
350	30	8,152	-40.5		276	15.2
300	30	9,184	-48.1		277	17.9
250	30	10,365	-55.4		276	23.9
200	30	11,777	-57.3		282	24.5
175	30	12,623	-56.3		278	28.2
150	30	13,602	-56.1		278	26.0
125	30	14,759	-56.8		277	22.0
100	30	16,170	-57.6		277	17.9
80	29	17,575	-57.7		276	11.1
60	25	19,400	-56.9		293	3.3
50	24	20,558	-56.1		348	2.7
40	24	21,980	-55.3		57	3.1
30	21	23,819	-53.9		66	6.4
20	18	26,443	-51.5		73	2.3
15	11	28,314	-49.7			

2/ HAVANA, CUBA (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	49	25.6	82	21	12.4
1,000	30	142	25.2	80	70	7.4
950	30	593	22.6	77	89	11.3
900	30	1,063	20.1	69	103	10.1
850	30	1,554	16.9	70	104	7.8
800	30	2,069	13.8	65	116	7.0
750	30	2,613	10.6	58	94	9.3
700	30	3,183	7.4	51	116	4.3
650	30	3,796	3.6	47	122	3.3
600	30	4,437	.0	44	150	1.9
550	30	5,127	- 3.9	43	196	2.7
500	30	5,875	- 8.7	47	243	3.1
450	30	6,691	-13.8	48	265	5.6
400	30	7,572	-19.7	52	264	7.4
350	30	8,548	-27.2	52	266	9.9
300	30	9,639	-35.8	52	273	12.2
250	30	10,879	-46.0		266	15.0
200	30	12,324	-58.3		271	22.1
175	29	13,151	-64.5		283	22.9
150	26	14,078	-69.6		282	16.5
125	16	15,144	-71.3		300	10.5
100	11	16,455	-70.9		21	5.1
80	11	17,783	-68.7		79	12.4
60	9	19,525	-62.5			
50	9	20,654	-60.3			
40	9	22,056	-57.1			
30	7	23,890	-52.8			
20						
15						

3/ HAVANA, CUBA (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	49	26.1	81	50	6.6
1,000	30	158	25.9	80	81	8.7
950	30	611	23.7	75	90	14.0
900	30	1,082	21.2	69	92	12.2
850	30	1,575	17.9	69	95	10.7
800	30	2,092	14.7	65	100	10.3
750	30	2,637	11.6	55	107	10.1
700	30	3,210	8.0	51	104	10.1
650	30	3,820	4.2	48	106	8.9
600	30	4,464	.0	47	107	8.4
550	30	5,154	- 4.1	46	123	8.4
500	30	5,902	- 9.0	47	125	7.6
450	30	6,718	-14.3	47	122	6.6
400	30	7,595	-20.2	48	144	5.4
350	30	8,571	-27.4	45	136	5.6
300	30	9,660	-35.9	48	114	3.5
250	30	10,899	-46.0		93	2.9
200	30	12,347	-57.2		63	5.6
175	29	13,180	-62.2		70	8.2
150	28	14,120	-66.3		74	11.1
125	19	15,218	-69.2		94	12.0
100	12	16,539	-71.2		81	17.3
80	12	17,863	-68.0		93	21.0
60	11	19,617	-61.8		89	27.0
50	10	20,752	-60.0			
40	9	22,161	-56.8			
30	8	23,997	-52.7			
20						
15						

4/ CAMAGUEY, CUBA (1001 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	19	122	24.1	91	60	3.1
1,000	19	131	24.1	91	60	3.7
950	19	593	22.8	75	78	14.0
900	19	1,052	21.1	61	89	12.0
850	19	1,544	17.8	62	81	7.8
800	19	2,060	14.4	63	84	7.0
750	19	2,607	11.1	56	87	9.3
700	19	3,176	7.7	53	83	9.5
650	19	3,791	4.2	46	79	8.4
600	19	4,430	.5	40	83	9.5
550	19	5,127	- 3.7		86	8.5
500	19	5,870	- 8.4		95	8.2
450	19	6,690	-13.2		99	6.2
400	19	7,569	-18.9		73	7.0
350	19	8,551	-25.7		75	7.0
300	19	9,649	-34.4		77	8.0
250	19	10,898	-44.5		87	6.6
200	18	12,354	-56.0		77	8.7
175	18	13,192	-62.2		63	10.9
150	16	14,128	-68.2		65	12.6
125	12	15,209	-73.7		65	12.8
100	8	16,533	-74.6			
80	8	17,837	-71.6			
60	8	19,568	-64.0			
50	7	20,697	-60.9			
40	6	22,094	-58.2			
30						
20						
15						

4/ FT. HUACHUCA, ARIZ. (860 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,428	24.6	48	264	4.9
1,000	29	79				
950	29	547				
900	29	1,028				
850	29	1,526	24.1	47	265	4.7
800	29	2,054	20.4	46	278	5.8
750	29	2,610	15.8	53	284	6.6
700	29	3,188	10.9	60	297	5.1
650	29	3,802	6.1	62	302	2.5
600	29	4,454	1.3	63	335	1.4
550	29	5,148	- 3.5	56	251	2.3
500	29	5,896	- 8.2	50	309	3.1
450	27	5,714	-13.4	40	270	2.9
400	26	7,596	-19.2		253	3.3
350	26	8,575	-26.3		264	8.0
300	22	9,662	-34.9		249	12.4
250	17	10,909	-44.4		260	10.9
200	15	12,361	-55.6		266	15.3
175	15	13,200	-61.0		254	16.7
150	6	14,152	-65.7			
125						
100						
80						
60						
50						
40						
30						
20						
15						

4/ HAVANA, CUBA (1011 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	49	26.6	81	48	5.2
1,000	31	147	26.5	78	71	7.2
950	31	600	24.0	74	83	12.2
900	31	1,073	21.4	68	85	10.7
850	31	1,566	18.2	68	86	8.5
800	31	2,084	15.0	62	95	8.9
750	31	2,628	11.8	58	88	9.3
700	31	3,202	8.4	54	87	9.9
650	31	3,811	4.7	52	90	8.4
600	30	4,460	1.2	45	93	7.8
550	30	5,154	- 2.5	43	107	5.6
500	30	5,907	- 7.1	39	107	5.4
450	29	6,726	-12.3	39	112	5.2
400	29	7,613	-18.4	34	106	4.7
350	29	8,593	-25.6	33	102	8.2
300	29	9,691	-34.1		104	7.8
250	29	10,941	-44.1		101	9.7
200	29	12,401	-55.7		99	12.4
175	29	13,239	-61.8		94	16.1
150	28	14,177	-68.0		92	18.3
125	19	15,264	-72.0		97	16.9
100	12	16,577	-72.1		90	16.5
80	8	17,887	-69.4			
60	7	19,618	-63.3			
50	6	20,738	-61.9			
40	6	22,136	-56.8			
30	6	23,974	-53.4			

5/ FT. HUACHUCA, ARIZ. (858 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	1,428	26.1	30	260	3.9
1,000	27	57				
950	27	536				
900	27	1,019				
850	27	1,516	25.6	29	259	5.4
800	27	2,045	22.2	30	24	3.1
750	27	2,604	17.5	34	56	4.5
700	27	3,184	12.5	39	74	4.9
650	27	3,802	7.1	45	94	5.6
600	27	4,453	1.5	52	91	5.6
550	27	5,146	- 4.1	54	96	7.4
500	27	5,893	- 8.9	45	92	8.4
450	27	6,711	-13.9		87	7.0
400	23	7,591	-19.8		28	3.3
350	22	8,570	-26.8		324	8.2
300	20	9,662	-35.2		303	11.1
250	19	10,906	-44.2		316	14.8
200	17	12,368	-54.6		318	22.1
175	16	13,213	-60.1		308	23.1
150	11	14,169	-66.4			
125						
100						
80						
60						
50						
40						
30						

6/ FT. HUACHUCA, ARIZ. (859 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	1,428	19.1	30	256	5.8
1,000	28	97				
950	28	559				
900	28	1,031				
850	28	1,521	19.3	30	253	7.2
800	28	2,039	15.8	32	239	8.9
750	28	2,594	11.7	34	215	9.1
700	28	3,155	7.3	37	204	8.4
650	28	3,767	2.8	38	207	8.0
600	28	4,404	- 1.8	38	226	10.3
550	28	5,092	- 6.0		245	15.5
500	28	5,829	-11.2		251	19.6
450	27	6,636	-17.3		255	23.1
400	25	7,499	-24.2		265	28.4
350	23	8,469	-31.3		268	31.1
300	20	9,551	-39.5		263	37.3
250	18	10,777	-48.2		267	46.2
200	17	12,216	-57.0		268	49.3
175	13	13,054	-60.5		264	67.6
150	7	14,024	-63.7			
125						
100						
80						
60						
50						
40						
30						

6/ MERIDA, MEXICO (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	11	23.8	87		
1,000	29	134	24.1	83		
950	29	590	22.0	79		
900	29	1,051	19.2	77		
850	29	1,541	16.2	73		
800	29	2,054	13.3	69		
750	29	2,599	10.5	60		
700	29	3,167	8.1	50		
650	29	3,780	4.9	48		
600	29	4,424	1.4			
550	29	5,122	- 2.4			
500	29	5,870	- 7.2			
450	29	6,692	-12.6			
400	29	7,571	-18.6			
350	28	8,553	-26.2			
300	28	9,649	-34.8			
250	27	10,894	-44.5			
200	26	12,350	-55.7			
175	25	13,184	-61.6			
150	25	14,126	-67.3			
125	25	15,811	-72.1			
100	21	16,516	-75.7			
80	18	17,816	-72.3			
60	15	19,545	-63.8			
50	13	20,667	-60.5			
40	11	22,075	-56.4			
30	10	23,918	-52.6			

6/ ST. MARTINS, NETH. ANT.** (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	26	3	26.7	81	99	5.8
1,000	26	106	26.1	81	105	8.0
950	26	560	22.9	83	111	11.1
900	26	1,028	20.0	80	114	12.2
850	26	1,520	17.2	75	114	11.8
800	26	2,036	14.5	69	112	9.9
750	26	2,589	11.7	64	114	8.5
700	26	3,154	8.7	57	116	8.5
650	26	3,770	5.3	51	100	8.5
600	26	4,414	2.0	45	100	7.8
550	25	5,109	- 2.2	43	102	6.8
500	25	5,862	- 6.8	43	106	6.4
450	25	6,682	-11.9	41	119	4.7
400	25	7,567	-18.0		138	1.9
350	25	8,549	-25.4		252	.8
300	25	9,648	-34.2		251	1.4
250	23	10,894	-44.4		273	7.8
200	23	12,347	-56.2		284	15.7
175	19	13,186	-62.1		290	16.3
150	14	14,118	-67.9		302	15.0
125	13	15,198	-72.7		299	12.4
100	11	16,502	-74.0			
80	11	17,807	-71.8			
60	10	19,533	-65.3			
50	10	20,655	-61.1			
40	9	22,053	-56.9			
30	8	23,889	-54.2			

6/ ST. PAUL IS., ALASKA (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	4.3	83	277	11.3
1,000	31	69			271	11.3
950	31	484	1.3	83	277	15.2
900	31	917	- 1.6	84	280	21.6
850	31	1,370	- 4.1	79	283	20.6
800	31	1,846	- 6.4	70	287	20.6
750	31	2,353	- 8.9	59	284	24.7
700	31	2,879	-12.0	53	286	24.1
650	31	3,450	-15.2	51	283	27.6
600	31	4,042	-18.9	46	284	28.9
550	31	4,687	-23.1	43	279	25.8
500	31	5,375	-27.8	41	278	28.6
450	31	6,129	-32.7	39	273	30.7
400	31	6,945	-37.8		263	32.1
350	30	7,846	-43.4			
300	30	8,872	-47.4			
250	30	10,068	-50.2			
200	30	11,521	-50.5			
175	30	12,391	-50.3			
150	30	13,395	-50.9			
125	30	14,580	-51.2			
100	28	16,021	-50.9			
80	27	17,469	-50.7			
60	25	19,346	-51.1			
50	22	20,540	-51.2			
40	16	22,015	-51.1			
30	9	23,918	-49.7			
20						

6/ TACUBAYA, MEXICO (775 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	2,306	16.4	50		
1,000	30	76				
950	30	540				
900	30	1,018				
850	30	1,510				
800	30	2,038				
750	30	2,591	14.8	51		
700	30	3,166	10.3	57		
650	30	3,787	5.7	62		
600	30	4,429	1.3	62		
550	30	5,128	- 2.5	51		
500	30	5,876	- 6.5			
450	30	6,699	-11.6			
400	29	7,585	-17.6			
350	28	8,571	-24.7			
300	28	9,673	-33.3			
250	25	10,924	-43.4			
200	23	12,391	-55.0			
175	22	13,230	-61.4			
150	21	14,170	-68.1			
125	16	15,245	-74.2			
100	6	16,539	-77.1			
80	6	17,828	-73.4			
60	6	19,537	-66.0			
50	5	20,660	-61.4			
40						
30						
20						

6/ VERA CRUZ, MEXICO (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	13	27.1	70		
1,000	30	121	26.2	70		
950	30	572	22.4	67		
900	30	1,040	19.3	61		
850	30	1,529	16.2	64		
800	30	2,043	13.3	63		
750	30	2,596	10.5	54		
700	30	3,156	8.0	44		
650	29	3,772	4.8	39		
600	28	4,413	1.4			
550	28	5,114	- 2.5			
500	27	5,860	- 6.9			
450	27	6,691	-11.9			
400	26	7,567	-18.0			
350	25	8,549	-25.1			
300	24	9,647	-33.4			
250	23	10,901	-43.1			
200	21	12,362	-55.2			
175	21	13,201	-61.7			
150	19	14,143	-68.4			
125	17	15,216	-74.5			
100	5	16,479	-77.1			
80						
60						
50						
40						
30						
20						

7/ FT. HUACHUCA, ARIZ. (861 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,428	10.9	31	236	3.5
1,000	29	158				
950	29	600				
900	29	1,060				
850	29	1,536	12.3	26	197	1.6
800	29	2,042	9.5	27	71	1.4
750	29	2,576	6.1	28	268	1.0
700	29	3,135	3.1		303	3.1
650	29	3,736	- .1		292	8.2
600	29	4,368	- 3.8		305	11.5
550	29	5,053	- 8.5		301	17.7
500	29	5,782	-13.8		294	20.0
450	29	6,582	-20.0		290	24.5
400	29	7,436	-26.7		286	26.2
350	26	8,373	-34.6		285	33.4
300	23	9,429	-42.6		287	40.6
250	20	10,636	-50.7		286	52.6
200	18	12,063	-57.9		277	63.5
175	17	12,895	-60.4		280	65.3
150	9	13,830	-60.9			
125						
100						
80						
60						
50						
40						
30						
20						

7/ TACUBAYA, MEXICO* (775 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	2,306	14.8	57		
1,000	30	86				
950	30	548				
900	30	1,024				
850	30	1,512				
800	30	2,038				
750	30	2,587	13.2	55		
700	30	3,161	9.2	57		
650	30	3,778	4.8	67		
600	30	4,420	.4	70		
550	30	5,118	- 3.2	52		
500	30	5,865	- 7.2	37		
450	30	6,688	-12.6			
400	30	7,568	-18.9			
350	30	8,548	-26.0			
300	27	9,643	-34.7			
250	25	10,892	-44.8			
200	24	12,348	-56.7			
175	21	13,185	-63.0			
150	16	14,126	-68.9			
125	13	15,204	-72.2			
100	11	16,499	-76.7			
80	9	17,780	-76.7			
60	9	19,479	-66.1			
50	9	20,597	-61.5			
40	9	21,990	-58.4			
30	9	23,808	-55.3			
20	[illegible]	26,405	-52.6			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average monthly values

Table 20—Continued

DELAYED DATA

Standard pressure surface (mb.)	7/ YUMA, ARIZ. (1005 MB.) Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	105	18.6	18	6	3.3
1,000--	30	150	19.4		1	5.8
950 - -	30	593	18.7		357	8.5
900----	30	1,050	15.6		12	9.5
850----	30	1,532	12.7		28	8.4
800- --	30	2,037	9.7		25	8.9
750---	30	2,572	7.1		21	7.4
700- --	30	3,133	4.0		7	7.2
650- -	30	3,732	.2		358	8.7
600----	30	4,367	- 3.8		341	10.3
550----	30	5,046	- 8.6		330	11.3
500----	30	5,779	-14.0		320	13.8
450---	30	6,576	-19.9		304	18.3
400----	30	7,433	-26.5		312	24.3
350----	30	8,382	-34.2		302	25.4
300----	29	9,438	-42.4		292	29.5
250----	29	10,645	-51.1		288	35.2
200----	29	12,070	-58.1		284	35.9
175----	28	12,904	-60.2		284	35.0
150----	24	13,857	-62.3		284	31.9
125----	23	14,974	-64.2		289	27.0
100----	19	16,334	-65.5		290	22.0
80-----	15	17,684	-64.1		297	15.5
60-- --	13	19,450	-60.6		276	8.5
50-- ---	13	20,589	-58.7		303	8.5
40- ---	12	21,992	-57.7		305	6.8
30-----	11	23,817	-55.9		327	5.2
20-----	7	26,420	-53.0			
15 --	6	28,260	-52.0			

1/	April 1956	6/	October 1956
2/	June 1956	7/	November 1956
3/	July 1956	*	Air Force Data
4/	August 1956	**	Observations began October 2, 1956
5/	September 1956	#	Corrected Data

Also see footnotes with current data.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

1955	Tallahassee, Fla.	Dec.	Tallahassee, Fla.	1956 Jan.	Tallahassee, Fla.	Feb.	Tallahassee, Fla.	Mar.	Prosser 4 NE, Wash.	Tallahassee, Fla.	Apr.	Columbus, Ohio	Prosser 4 NE, Wash.	Tallahassee, Fla.	May	Columbus, Ohio	Prosser 4 NE, Wash.	Tallahassee, Fla.	Jun.	Aklavik, MacKenzie
Nov. 5------	430	3	298	1	354	5	171	4	438	531	1	490	438	546	6	466	402	125	3	601
Nov. 6------	391	4	32	2	345	6	103	5	371	479	2	488	479	581	7	407	557	379	4	(527)
Nov. 7------	196	5	72	3	260	7	460	6	441	379	3	196	516	---	8	746	658	556	5	396
Nov. 8------	262	6	58	4	364	8	441	7	169	---	4	359	533	484	9	297	498	664	6	561
Nov. 9------	---	7	207	5	361	9	128	8	414	518	5	476	600	346	10	61	480	730	7	282
Nov. 10------	96	8	247	6	312	10	134	9	299	584	6	163	514	215	11	595	665	654	8	241
Nov. 11------	392	9	301	7	346	11	440	10	453	154	7	284	548	637	12	522	511	601	9	563
Average-------	294		174		335		268		369	441		351	518	468		442	539	530		(453)
Nov. 12------	301	10	331	8	382	12	---	11	492	168	8	177	608	---	13	513	791	632	10	561
Nov. 13------	352	11	233	9	382	13	---	12	430	195	9	583	601	---	14	331	746	724	11	406
Nov. 14------	374	12	240	10	357	14	450	13	431	---	10	247	523	185	15	570	770	734	12	581
Nov. 15------	---	13	303	11	351	15	255	14	492	---	11	402	328	159	16	---	776	---	13	670
Nov. 16------	---	14	112	12	231	16	268	15	371	---	12	527	557	629	17	396	752	755	14	730
Nov. 17------	178	15	312	13	322	17	134	16	285	355	13	580	563	632	18	655	689	713	15	723
Nov. 18------	267	16	372	14	366	18	306	17	508	606	14	261	567	---	19	711	471	660	16	737
Average-------	294		272		341		283		430	331		397	535	401		529	714	703		630
Nov. 19------	161	17	326	15	360	19	167	18	483	559	15	61	474	---	20	700	692	691	17	590
Nov. 20------	471	18	252	16	162	20	196	19	421	580	16	247	676	---	21	727	806	656	18	522
Nov. 21------	453	19	211	17	370	21	484	20	226	591	17	267	623	---	22	497	753	652	19	397
Nov. 22------	425	20	339	18	323	22	528	21	212	615	18	117	637	---	23	534	416	647	20	115
Nov. 23------	275	21	208	19	289	23	517	22	159	340	19	604	602	---	24	729	665	569	21	479
Nov. 24------	115	22	325	20	197	24	---	23	215	584	20	527	642	---	25	663	785	466	22	598
Nov. 25------	269	23	198	21	366	25	---	24	287	599	21	595	575	634	26	327	287	569	23	359
Average-------	310		266		295		379		286	553		345	604	---		597	629	607		437
Nov. 26------	382	24	253	22	40	26	---	25	237	634	22	240	634	491	27	123	759	501	24	676
Nov. 27------	257	25	130	23	125	27	---	26	436	575	23	438	572	694	28	316	779	516	25	562
Nov. 28------	252	26	144	24	191	28	---	27	573	560	24	389	622	112	29	416	770	675	26	315
Nov. 29------	390	27	193	25	171	29	---	28	393	511	25	316	592	127	30	444	760	559	27	268
Nov. 30------	370	28	219	26	398	Mar. 1	540	29	432	117	26	186	545	---	31	427	750	392	28	564
Dec. 1------	335	29	166	27	381	2	162	30	194	628	27	229	620	503	Jun.1	307	705	579	29	670
Dec. 2------	315	30	216	28	378	3	196	31	499	641	28	260	683	699	2	174	782	757	30	579
		31	358																Jul.1	---
Average------	329		210		240		---		395	524		294	610	438		315	758	569		519
				29	383						29	144	726	576						
				30	259						30	155	739	401						
				31	175						May 1	585	683	498						
				Feb. 1	208						2	123	602	611						
				2	375						3	612	224	339						
				3	276						4	334	406	253						
				4	82						5	603	431	270						
				Avg.	250						Avg.	365	544	421						

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

SOLAR RADIATION DATA

Table 33.--Daily totals and weekly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.-Continued

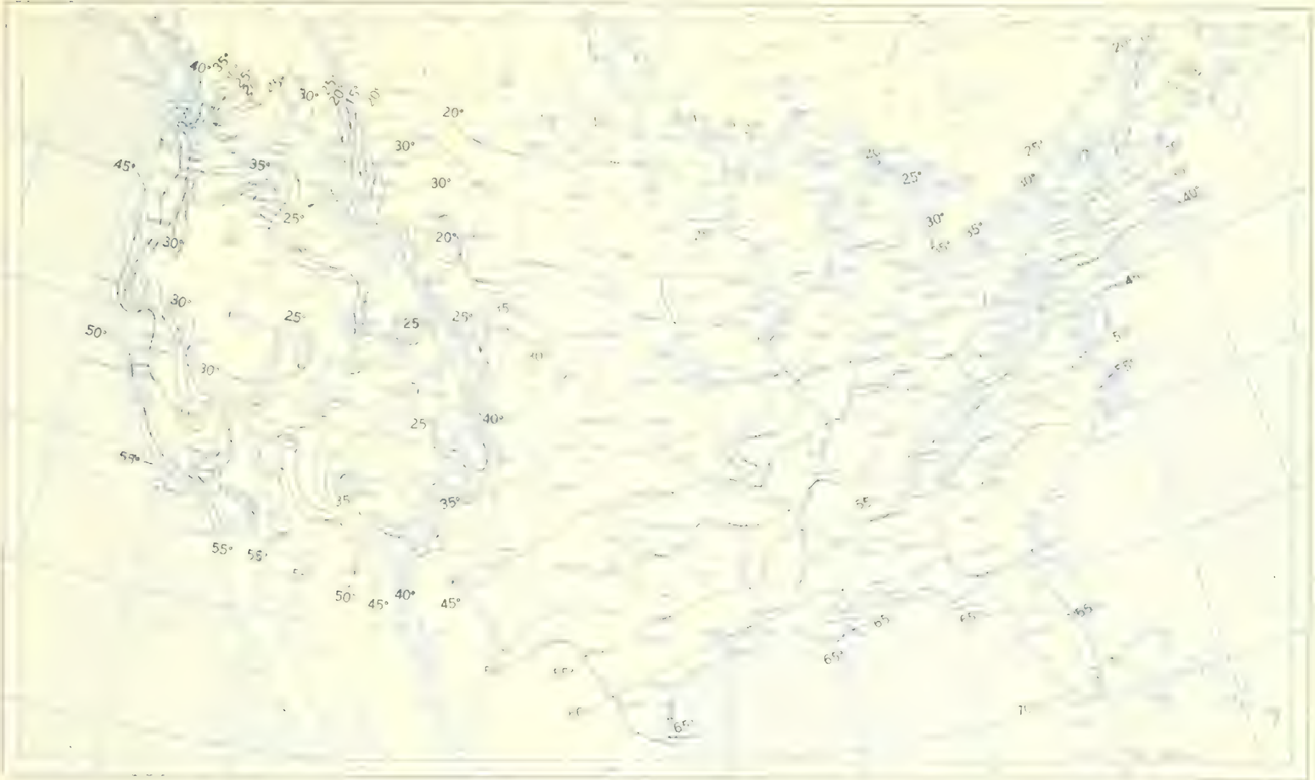
DELAYED DATA

1956	Columbus, Ohio	Ft. Huachuca, Ariz.	Ottawa, Ont.	Prosser 4 NE, Wash.	Tallahassee, Fla.	Toronto, Ont.	Tucson, Ariz.	Winnipeg, Manitoba		Columbus, Ohio	Ft. Huachuca, Ariz.	Ithaca, N. Y.	Prosser 4 NE, Wash.	Tallahassee, Fla.		Columbus, Ohio	Ithaca, N. Y.	Tallahassee, Fla.		Ithaca, N. Y.		Grand Lake, Colo.
Jun. 3------	115	---	(244)	318	747	63	696	628	Jul. 2	403	666	492	600	604	Aug. 6	153	156	---	Sep. 3	600	Nov. 5	---
Jun. 4------	635	640	(341)	627	692	77	780	669	3	442	798	749	803	593	7	159	283	659	4	545	6	113
Jun. 5------	665	721	349	724	737	496	---	688	4	327	794	284	712	488	8	114	641	652	5	520	7	188
Jun. 6------	676	777	760	487	673	646	776	137	5	464	756	58	588	498	9	94	468	661	6	209	8	288
Jun. 7------	618	799	(707)	718	527	626	780	(780)	6	266	674	104	787	515	10	162	439	632	7	369	9	323
Jun. 8------	586	755	309	805	610	246	775	762	7	636	642	462	824	---	11	157	597	541	8	344	10	292
Jun. 9------	686	608	357	725	522	610	627	(738)	8	474	715	666	814	417	12	156	507	512	9	412	11	345
Average-------	569	717	(438)	629	644	395	739	(629)		430	721	402	733	519		142	442	609		428		258
Jun. 10------	682	517	356	535	637	684	649	676	9	286	655	635	768	198	13	83	169	597	10	540	12	355
Jun. 11------	368	623	714	869	346	621	683	479	10	597	597	223	725	---	14	163	574	657	11	94	13	306
Jun. 12------	544	728	634	830	429	611	729	673	11	660	497	625	555	693	15	180	612	645	12	329	14	123
Jun. 13------	537	779	620	684	283	629	---	647	12	455	438	220	749	763	16	148	547	569	13	435	15	344
Jun. 14------	414	794	599	504	258	580	775	791	13	220	412	103	588	712	17	169	559	596	14	180	16	344
Jun. 15------	611	790	680	446	269	449	758	(730)	14	688	636	397	800	730	18	115	227	596	15	198	17	245
Jun. 16------	550	799	709	804	367	199	780	---	15	599	504	458	789	---	19	54	275	569	16	139	18	208
Average-------	529	719	616	667	370	539	729	(666)		501	534	380	711	619		130	423	604		274		275
Jun. 17------	426	734	761	827	---	312	739	(514)	16	300	---	394	779	---	20	79	347	375	17	152	19	177
Jun. 18------	409	799	---	660	---	737	---	432	17	444	633	761	788	544	21	167	565	441	18	322	20	278
Jun. 19------	241	600	(771)	654	---	715	597	507	18	509	714	759	765	523	22	165	576	535	19	382	21	295
Jun. 20------	376	728	(516)	682	---	396	771	698	19	327	735	627	765	682	23	158	408	650	20	325	22	306
Jun. 21------	401	789	599	858	---	504	778	730	20	413	602	154	614	427	24	167	474	665	21	348	23	235
Jun. 22------	468	786	753	721	633	620	779	567	21	608	737	220	743	693	25	159	606	463	22	416	24	267
Jun. 23------	491	---	289	677	295	97	743	521	22	501	749	537	768	553	26	150	518	422	23	309	25	285
Average-------	402	739	(615)	726	---	483	734	(567)		443	695	493	746	570		149	499	507		322		263
Jun. 24------	680	774	662	798	362	243	693	562	23	512	---	497	761	556	27	135	406	468	24	319	26	273
Jun. 25------	733	768	741	797	405	615	758	251	24	605	---	695	766	229	28	167	228	256	25	291	27	245
Jun. 26------	415	617	722	813	448	669	752	(637)	25	594	---	307	767	593	29	116	329	453	26	450	28	268
Jun. 27------	756	649	392	799	335	656	---	431	26	591	---	486	765	671	30	129	413	---	27	511	29	283
Jun. 28------	716	311	243	835	403	224	---	616	27	557	---	538	769	703	31	198	405	---	28	468	30	257
Jun. 29------	720	426	575	834	519	597	---	527	28	265	---	615	736	493	Sep.1	152	477	---	29	451	Dec.1	279
Jun. 30------	626	383	144	820	315	507	---	554	29	352	---	621	759	639	2	351	169	---	30	177	2	272
Jul. 1------	683	---	400	798	536	489	---	463														
Average-------	666	561	485	812	415	500	---	(505)		497	---	537	760	555		178	347	---		381		268
									30	685	---	712	766	446								
									31	510	---	444	725	488								
									Aug.1	115	---	402	502	---								
									2	593	---	721	591	---								
									3	586	---	707	739	---								
									4	386	---	646	653	---								
									5	370	---	230	728	---								
									Avg.	463	---	552	672	---								

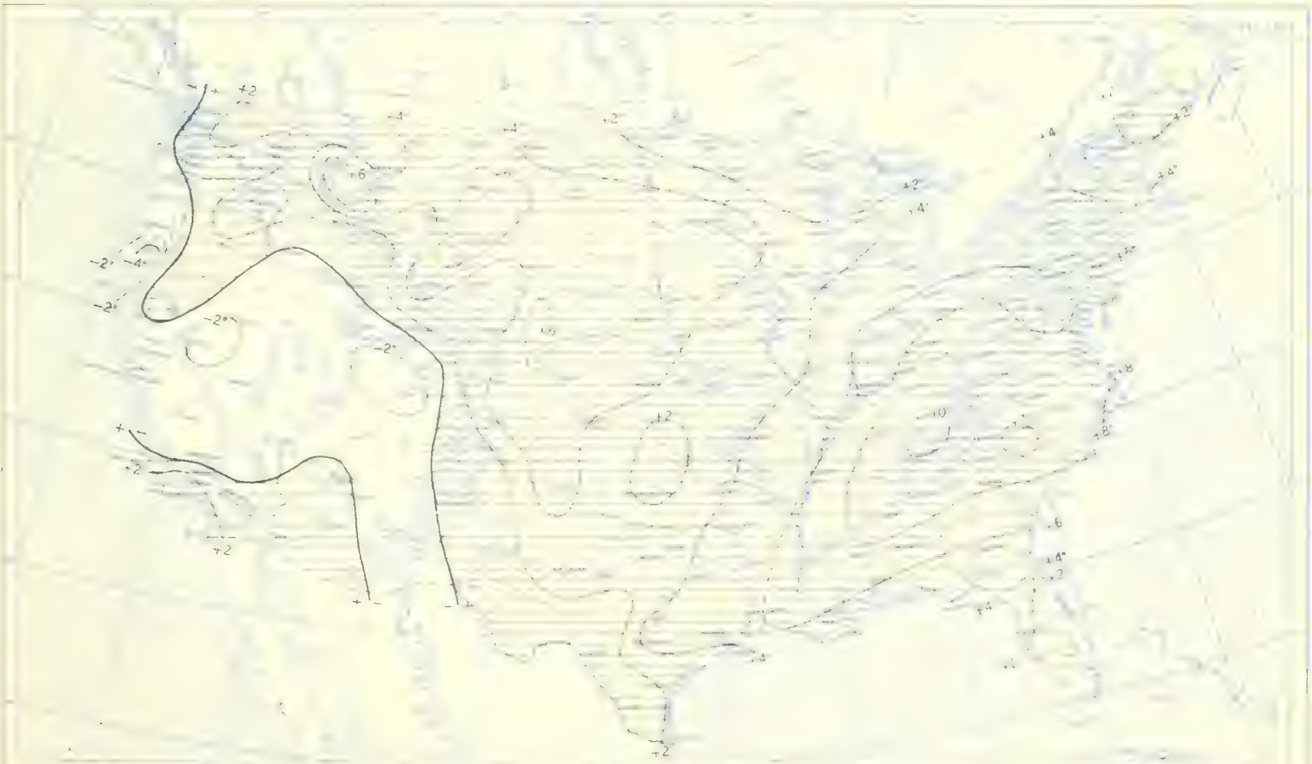
Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values in parentheses are interpolated.

NWRC, Asheville, N. C. --- 3/6/57 --- 1900

Chart I. A. Average Temperature (°F.) at Surface, December 1956.



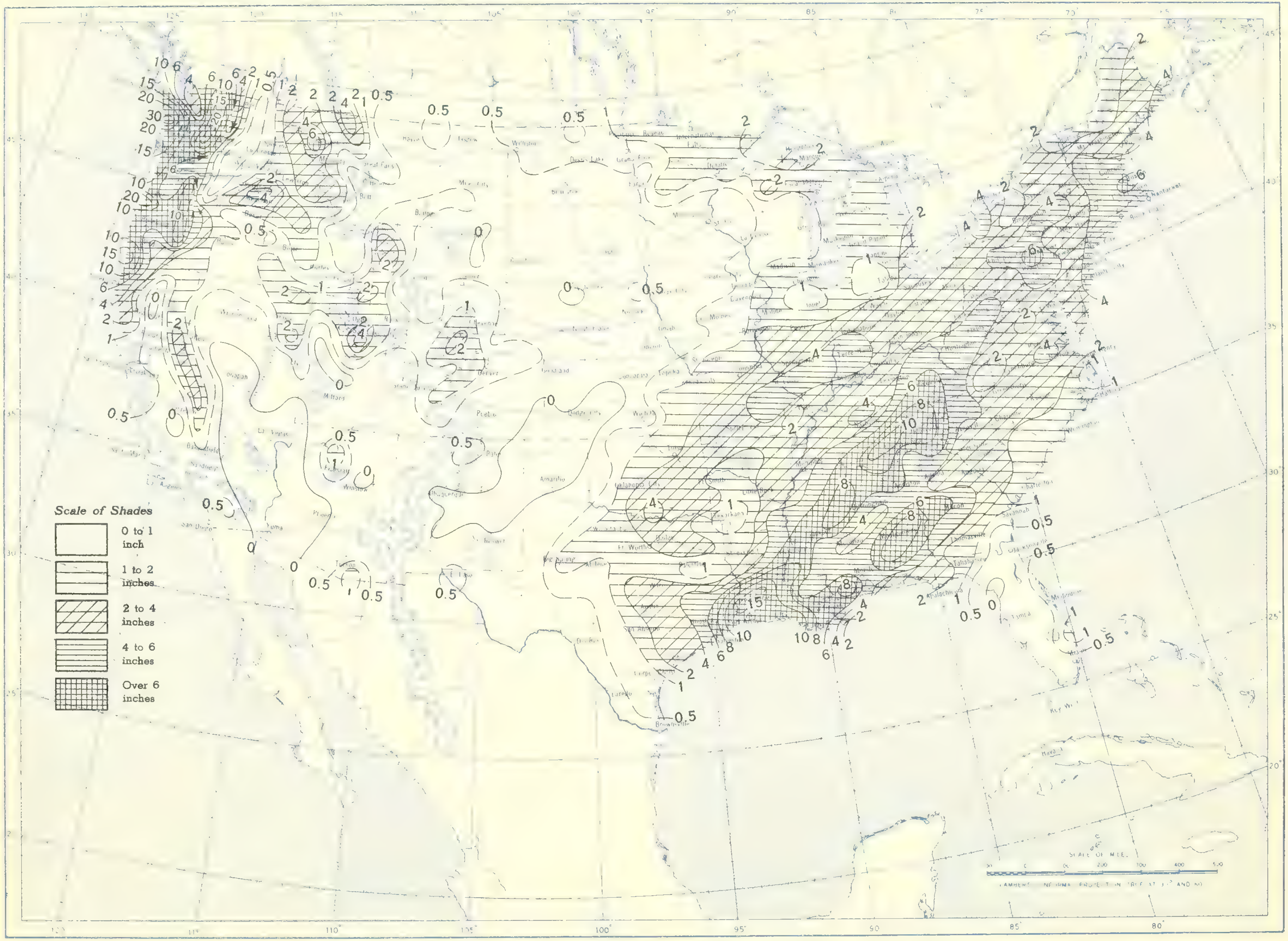
B. Departure of Average Temperature from Normal (°F.), December 1956.



A. Based on reports from 800 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

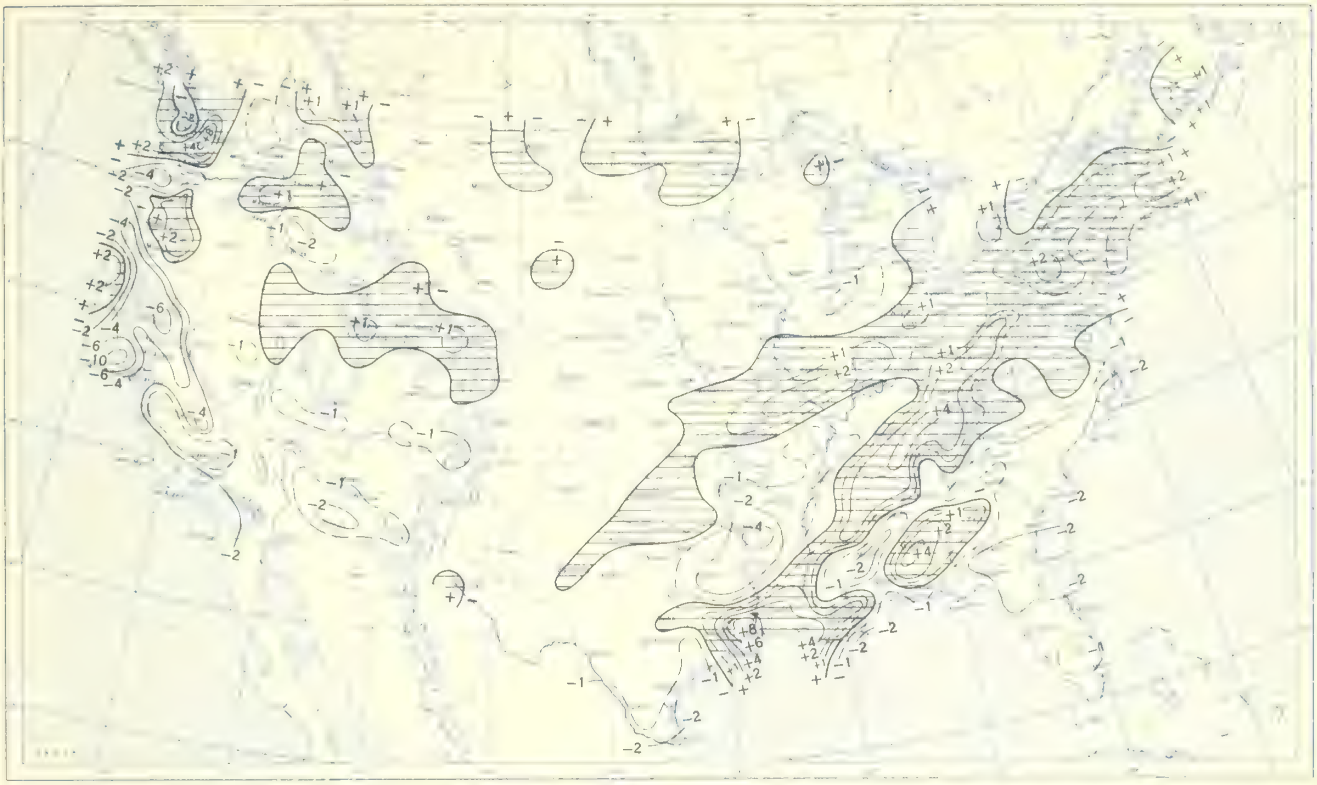
B. Normal average monthly temperatures are computed for Weather Bureau stations having at least 10 years of record.

Chart II. Total Precipitation (Inches), December 1956.

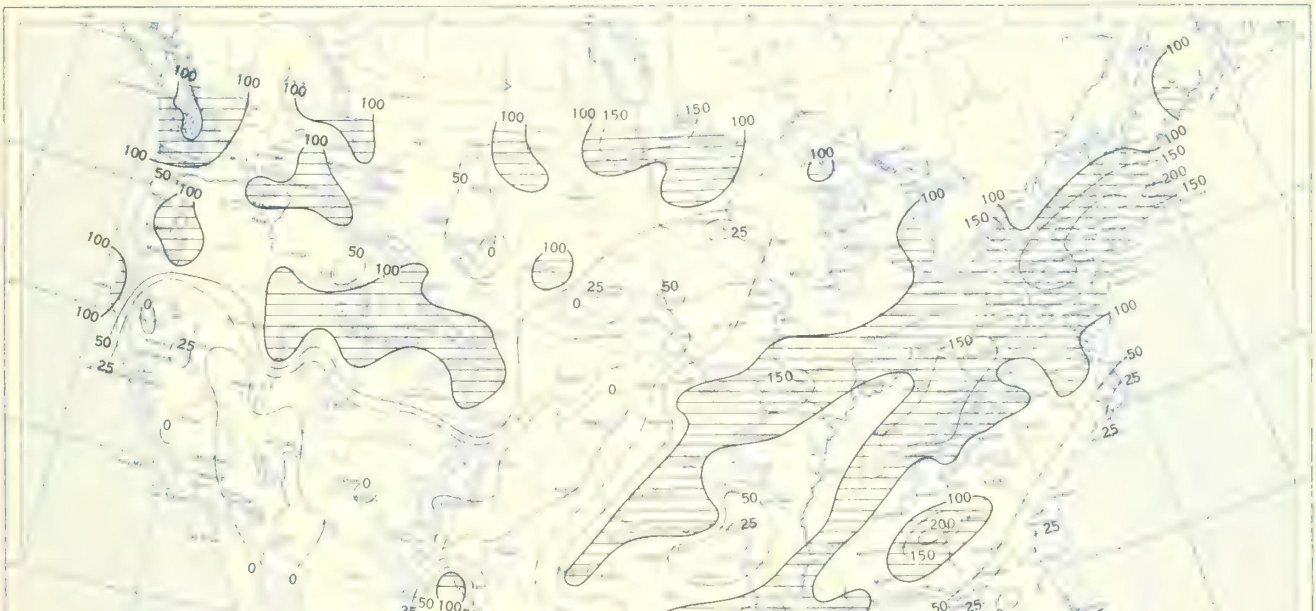


Based on daily precipitation records at 800 Weather Bureau and cooperative stations.

Chart III. A. Departure of Precipitation from Normal (Inches), December 1956.

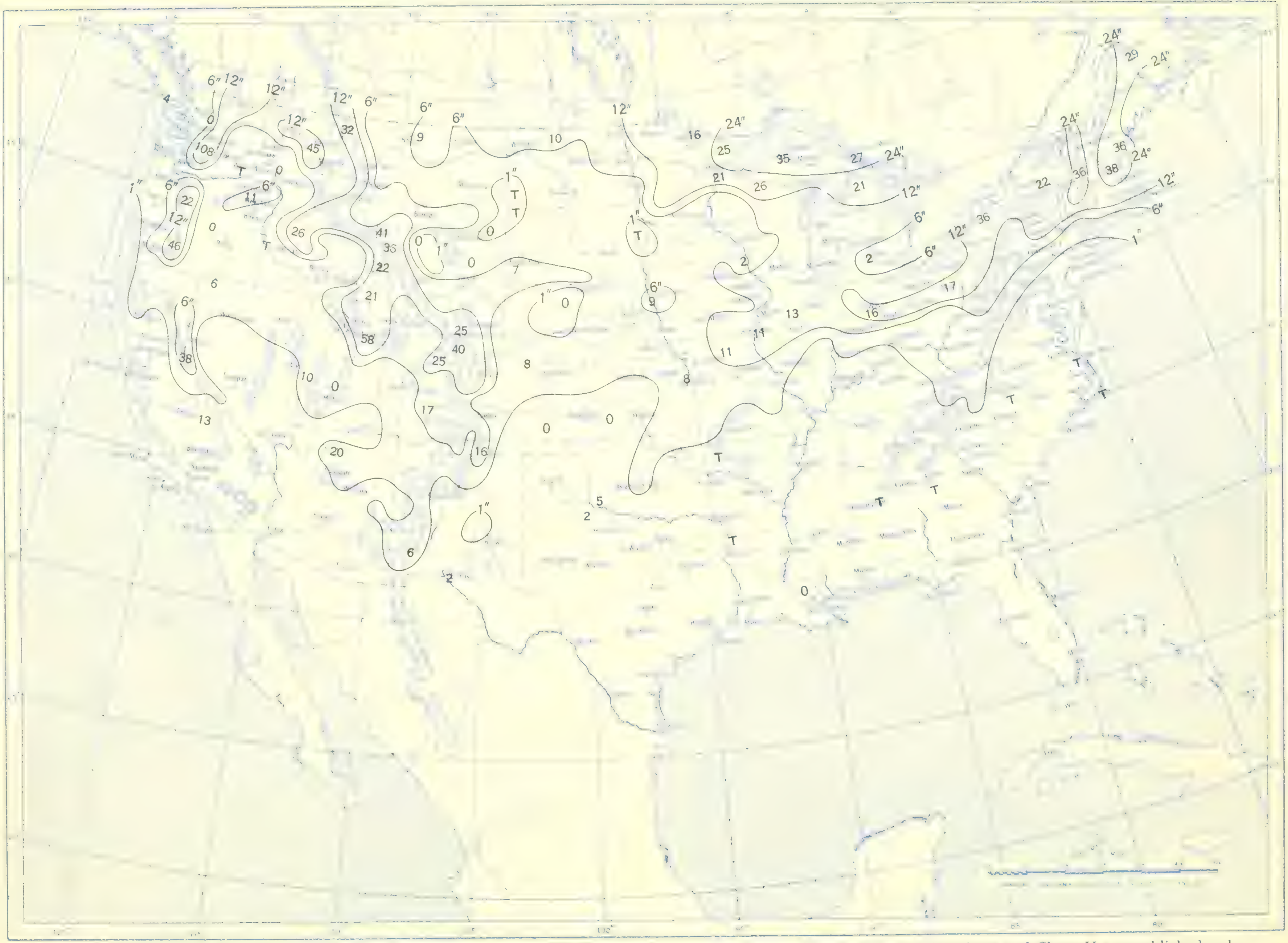


B. Percentage of Normal Precipitation, December 1956.



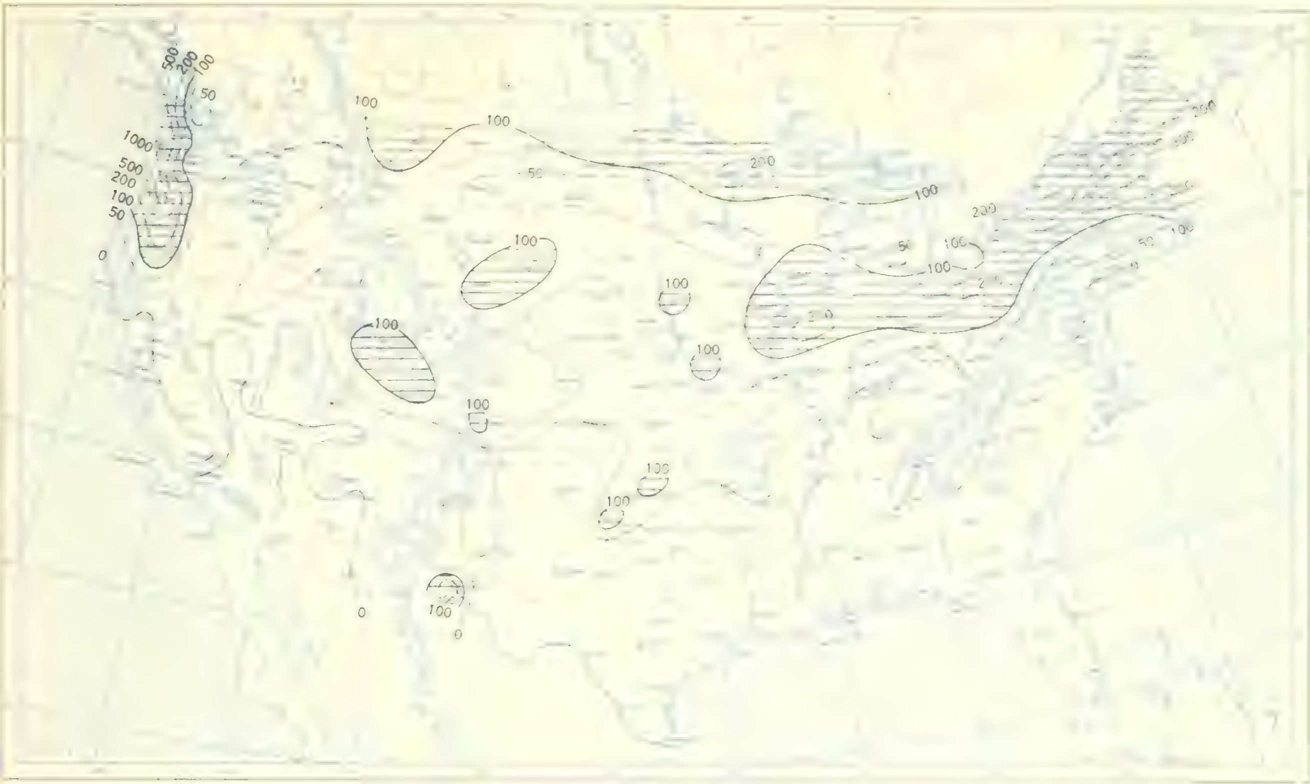
Normal monthly precipitation amounts are computed for stations having at least 10 years of record.

Chart IV. Total Snowfall (Inches), December 1956.

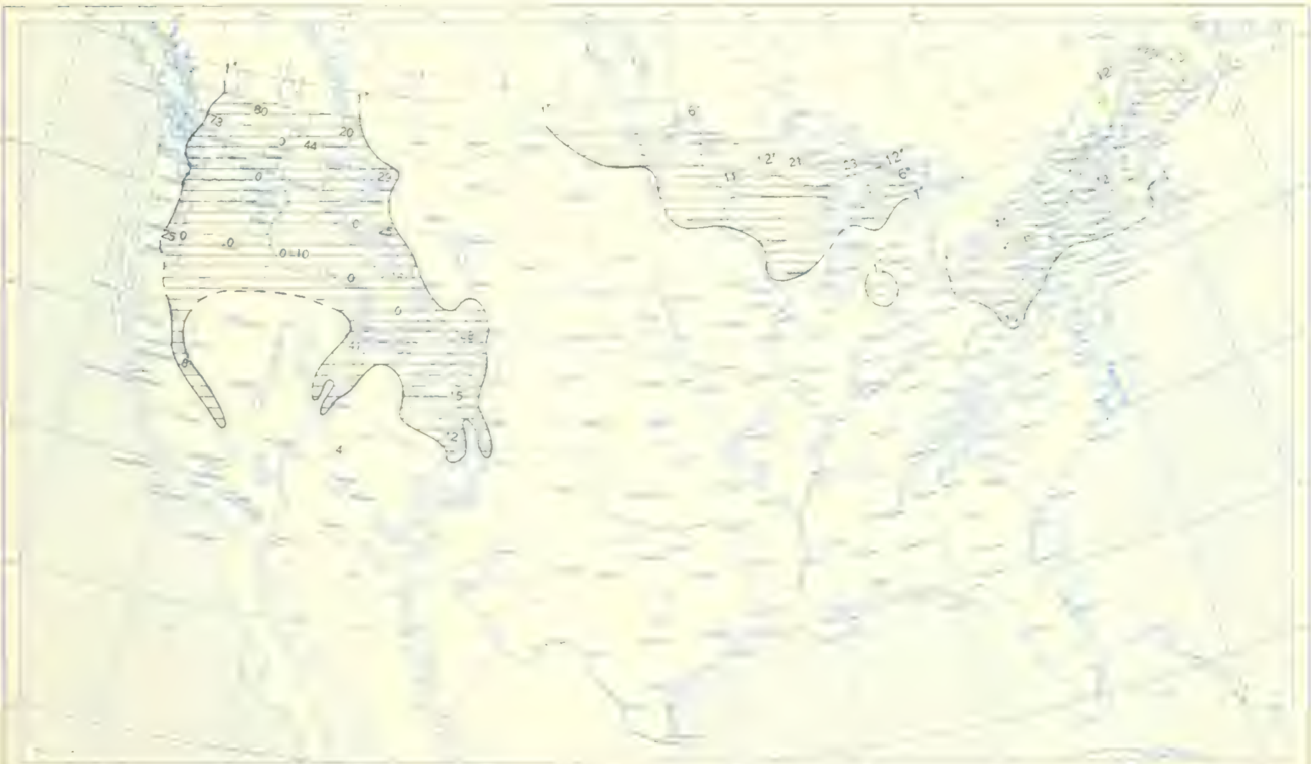


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Normal Snowfall, December 1956.

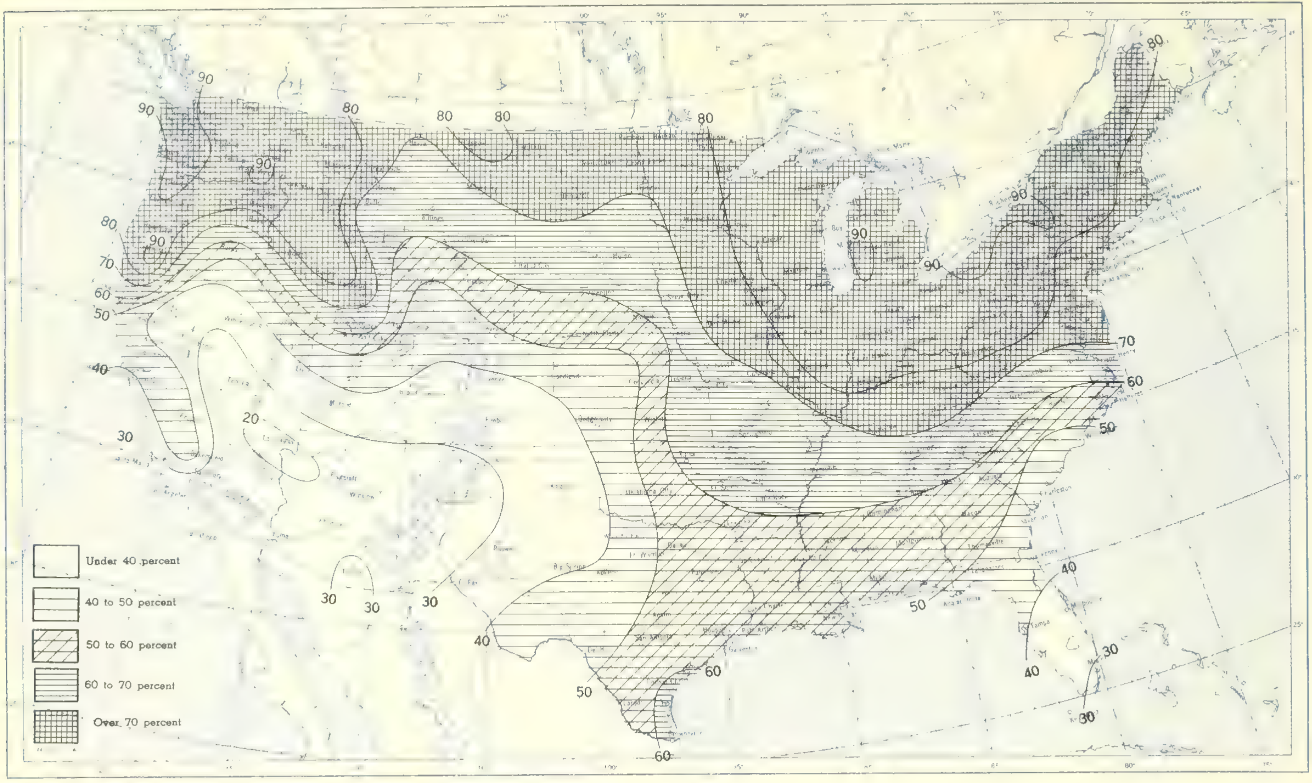


B. Depth of Snow on Ground (Inches). 7:30 a. m. E. S. T., December 31, 1956.

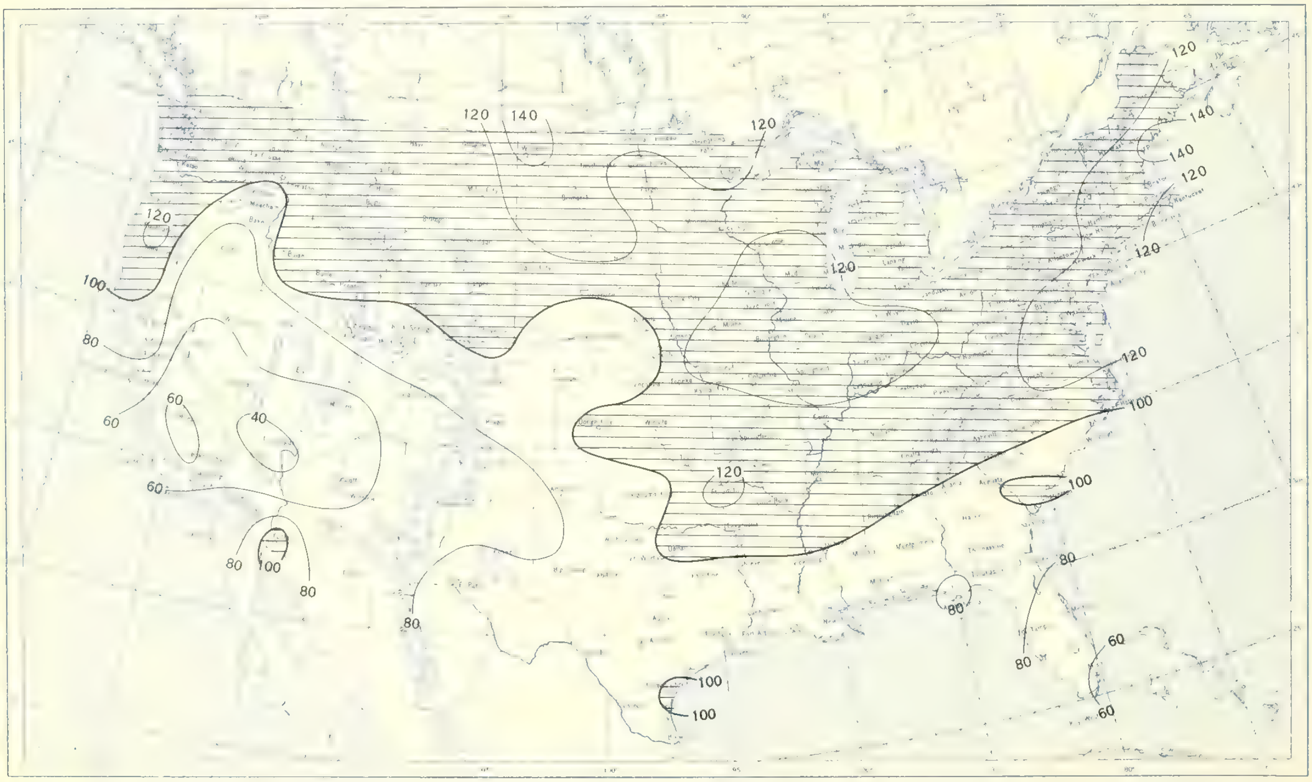


A. Amount of normal monthly snowfall is computed for Weather Bureau stations having at le [illegible]
B. Shows depth currently on ground at 7:30 a. m. E. S. T., of the Tuesday nearest the end of the month. It is based on r[illegible]
from Weather Bureau and cooperative stations. Dashed line shows greatest southern extent of snowcover during month.

Chart VI. A. Percentage of Sky Cover Between Sunrise and Sunset, December 1956.

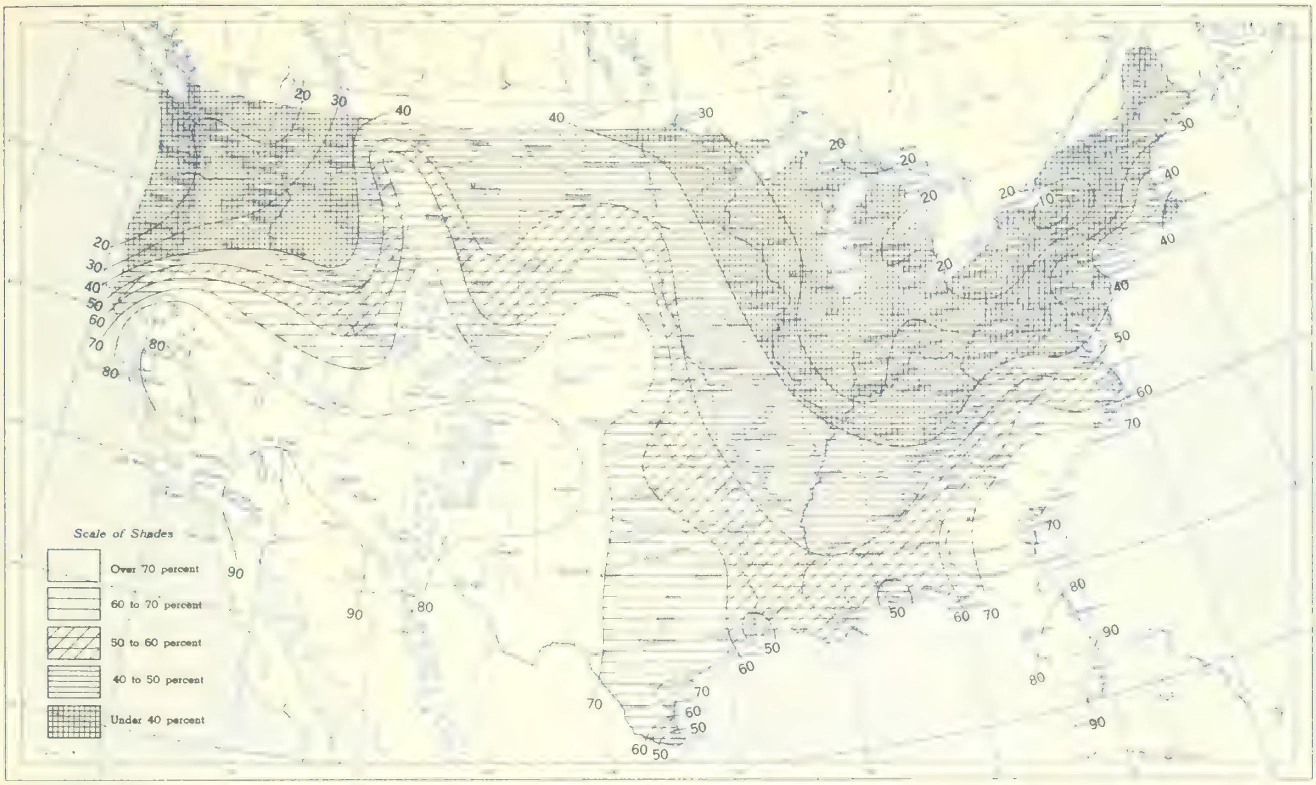


B. Percentage of Normal Sky Cover Between Sunrise and Sunset, December 1956.

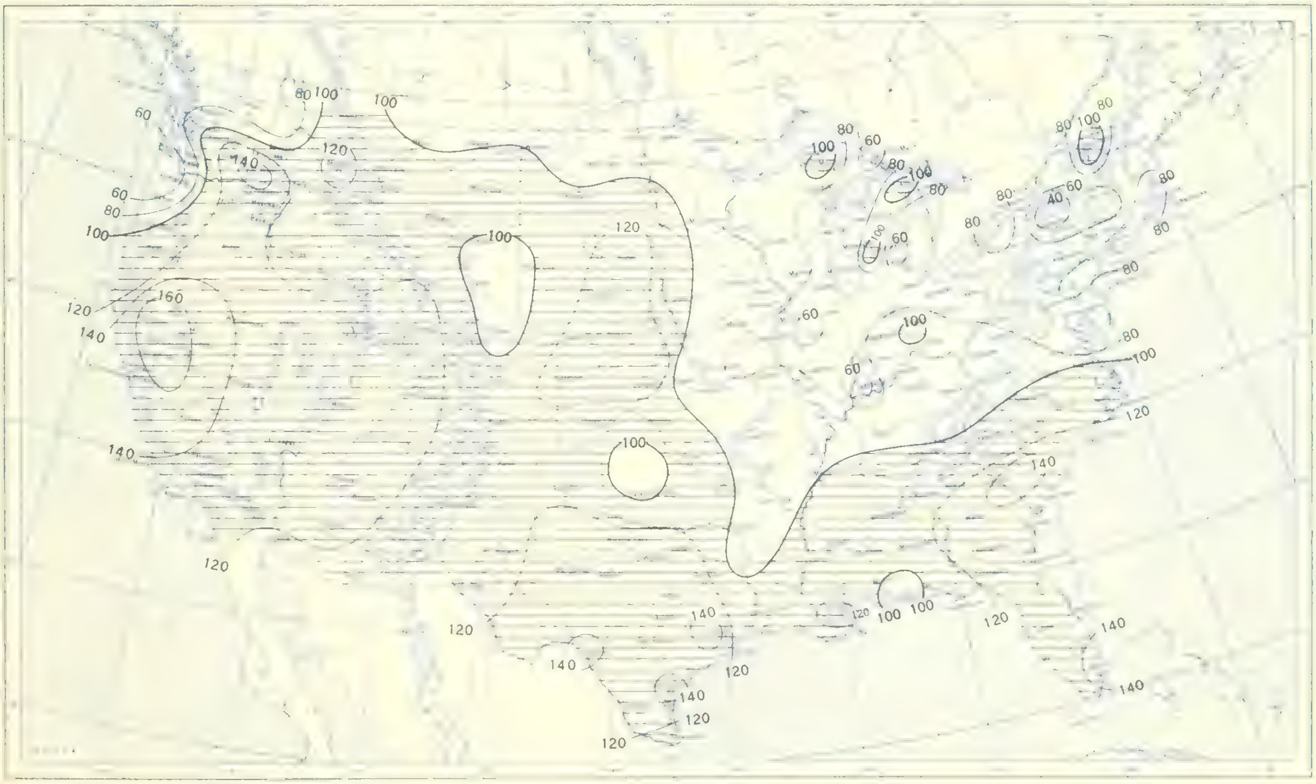


A. In addition to cloudiness, sky cover includes obscuration of the sky by fog, smoke, snow, etc. Chart based on visual observations made hourly at Weather Bureau stations and averaged over the month. B. Computations of normal amount of sky cover are made for stations having at least 10 years of record.

Chart VII. A. Percentage of Possible Sunshine, December 1956.



B. Percentage of Normal Sunshine, December 1956.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Normals are computed for stations having at least 10 years of record.

[illegible] Radiation, Direct + Diffuse, December 1956. Inset: Percentage of Mean [illegible], December 1956. (Mean based on period 1951-55.)

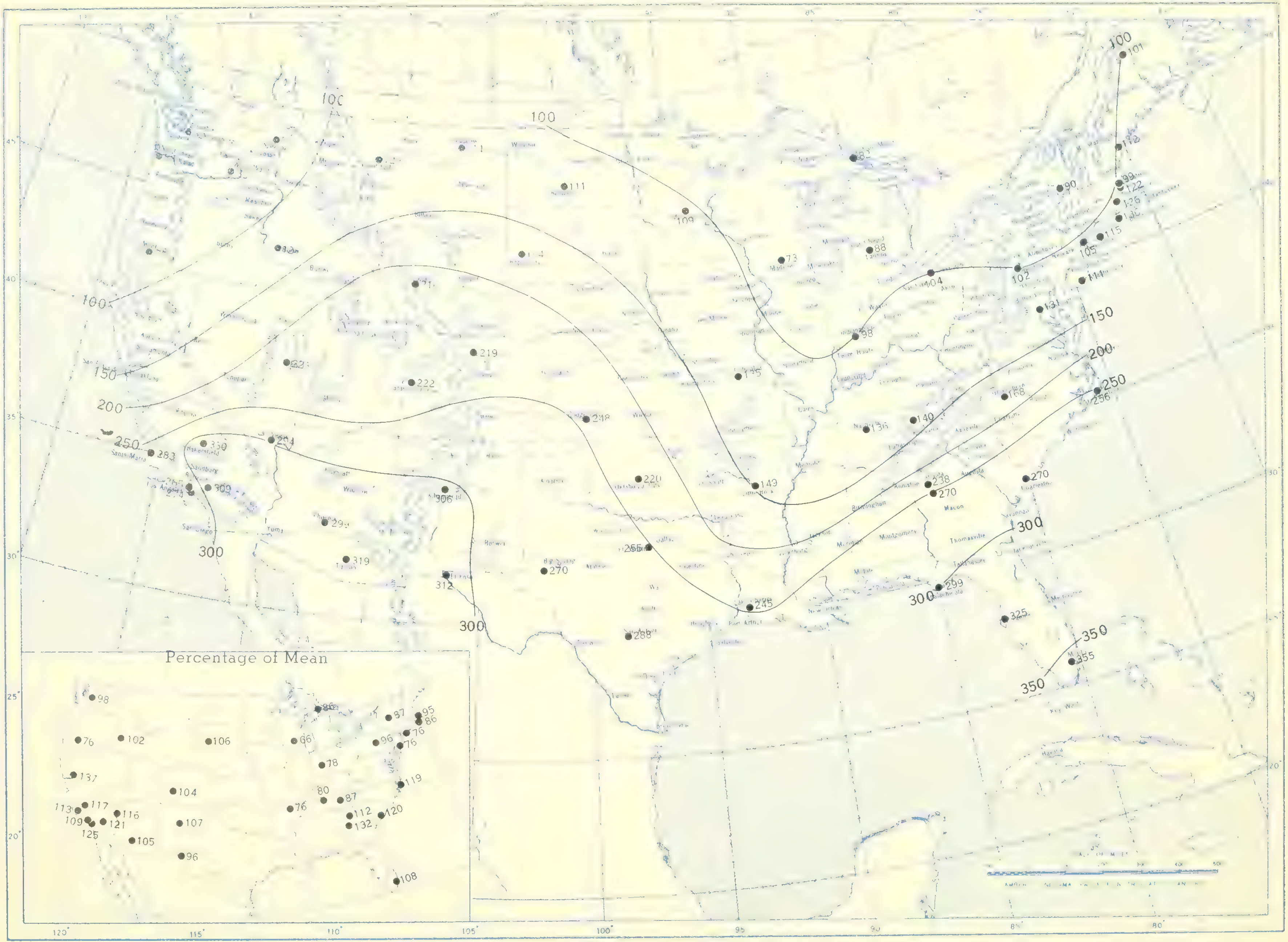
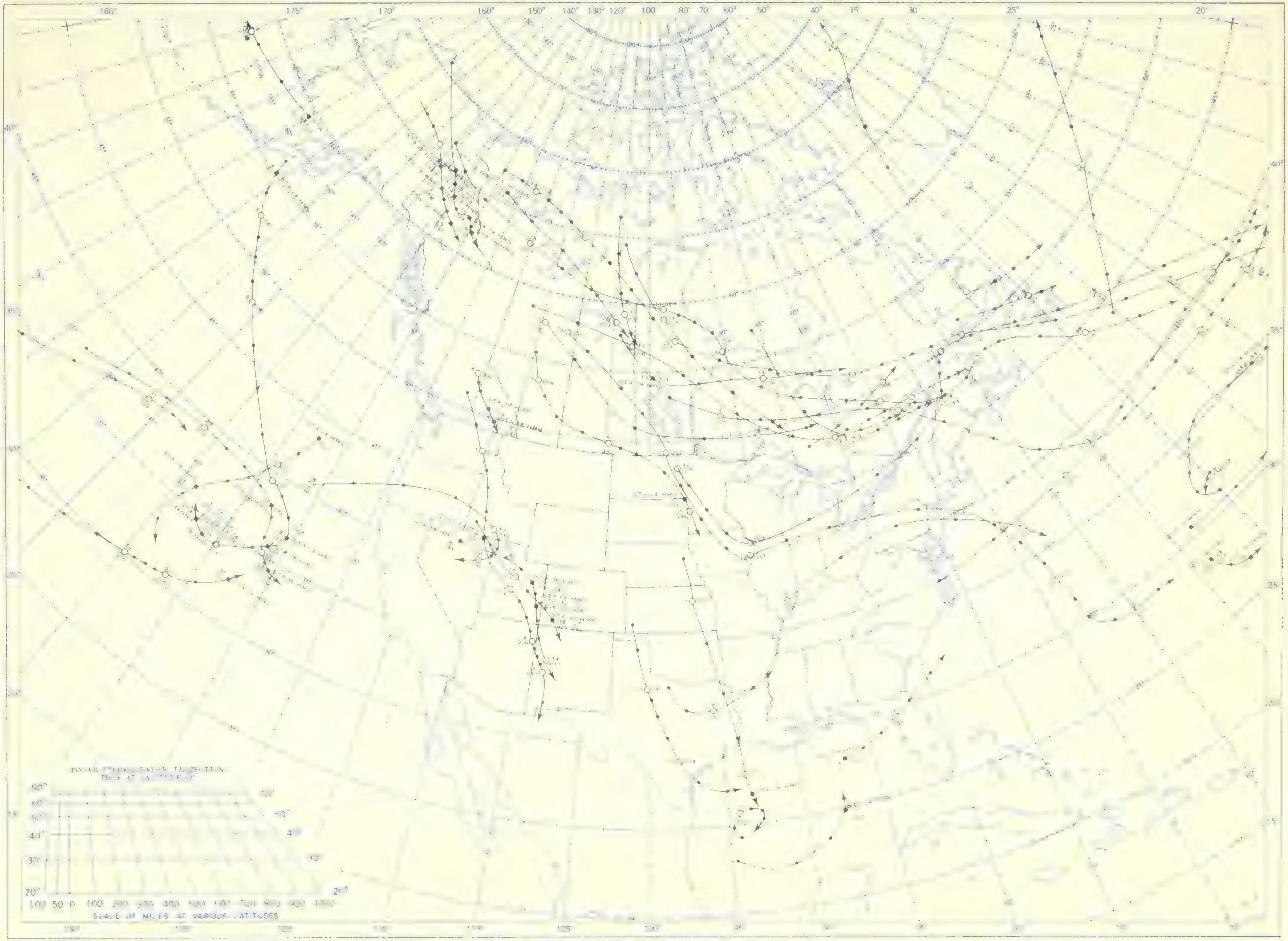


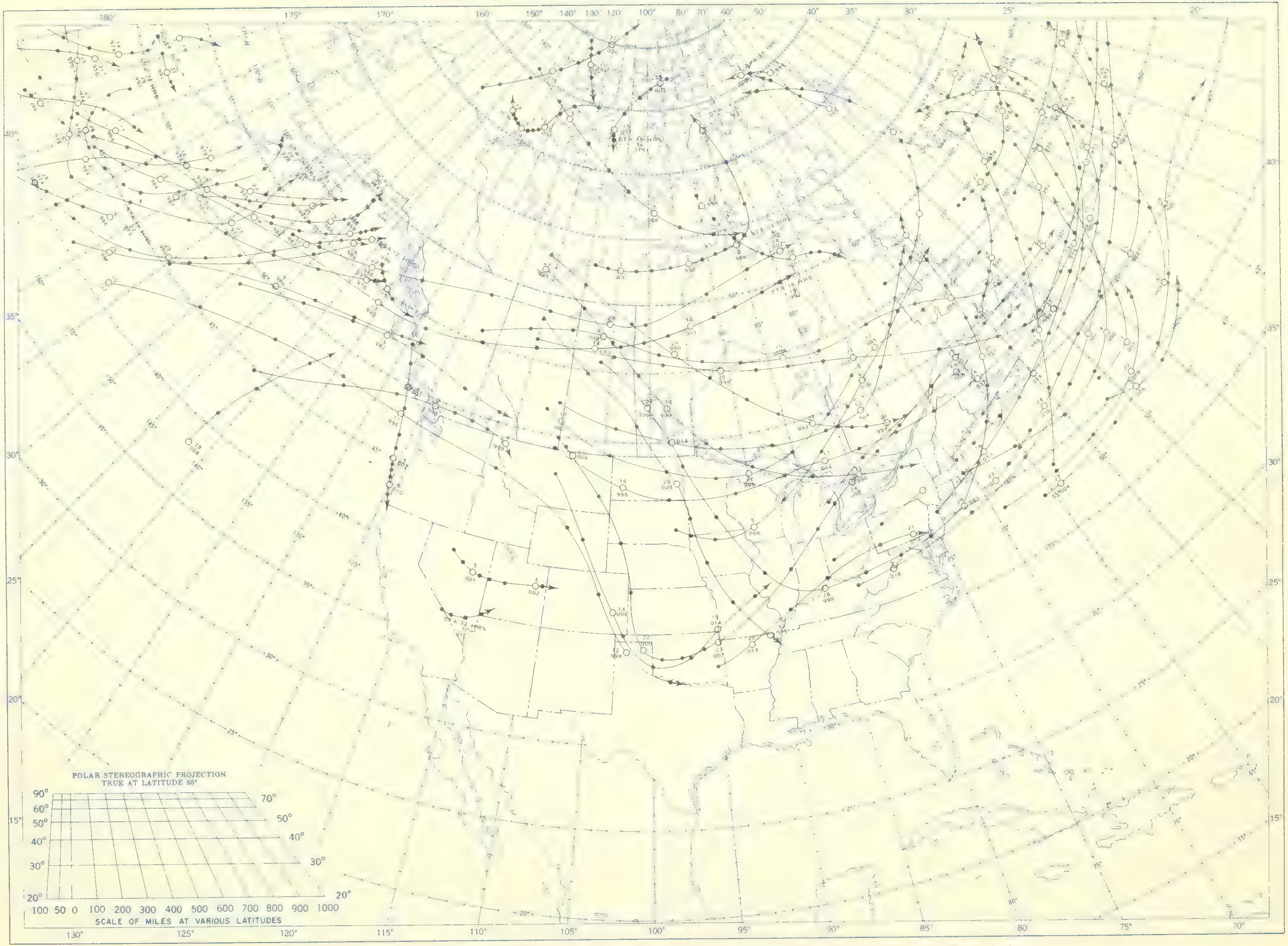
Chart shows mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$). Basic data for isolines are shown on chart. Further estimates are obtained from supplementary data for which limits of accuracy are wider than for those data shown.

Chart IX. Tracks of Centers of Anticyclones at Sea Level, December 1956.



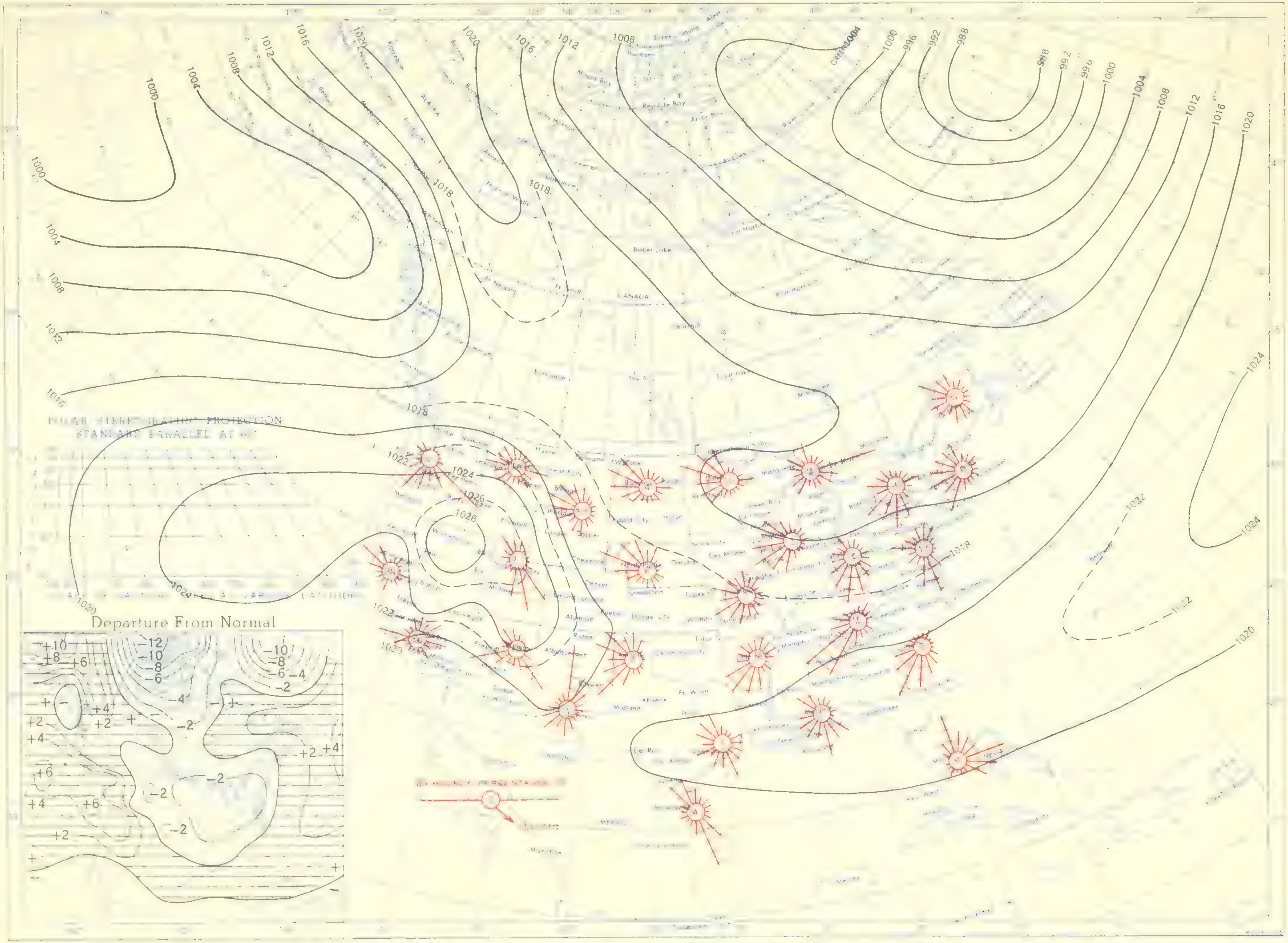
Circle indicates position of center at 7:30 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart X. Tracks of Centers of Cyclones at Sea Level, December 1956.



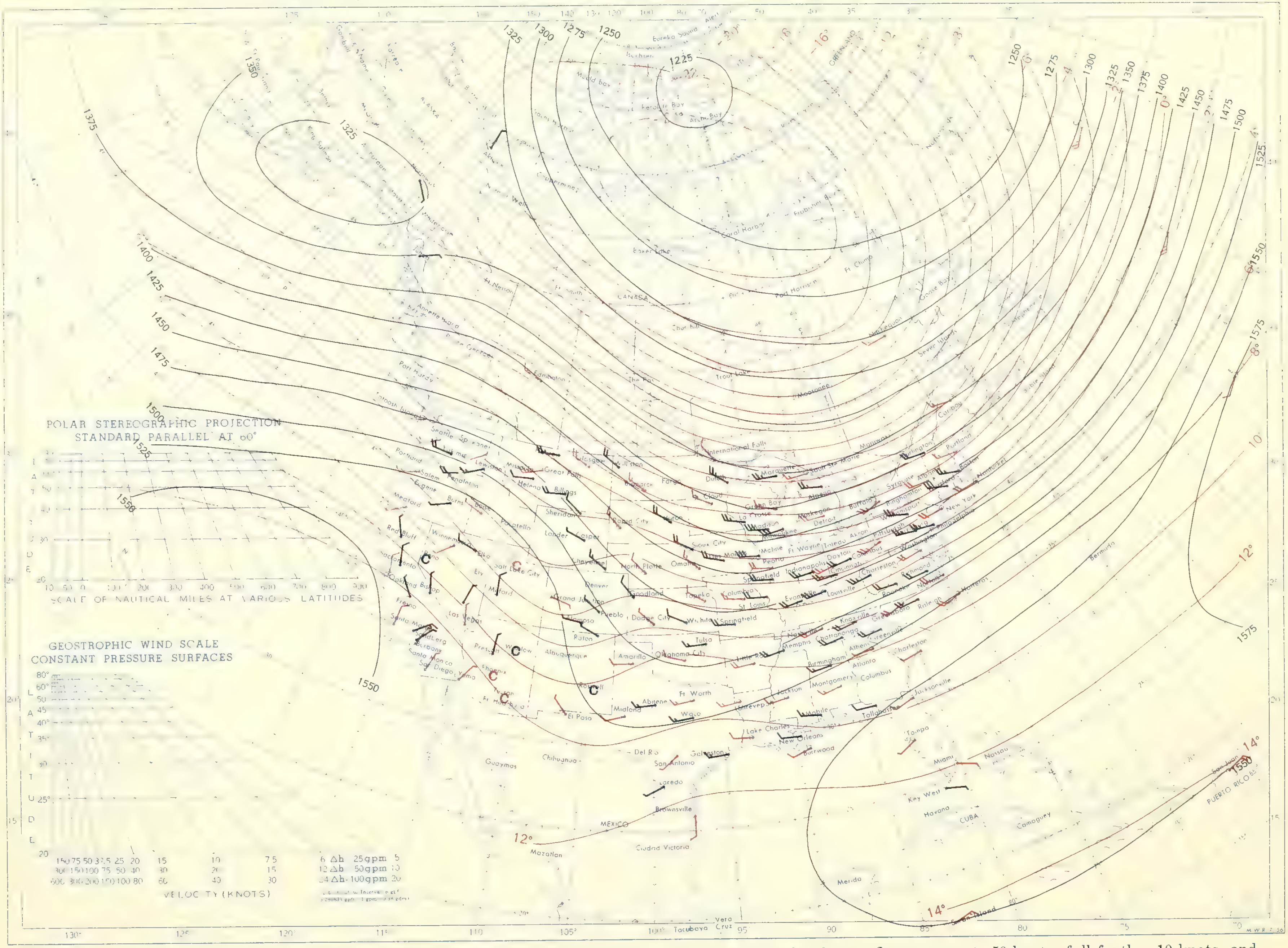
Circle indicates position of center at 7:30 a. m. E. S. T. See Chart IX for explanation of symbols.

Chart XI. Average Sea Level Pressure (mb.) and Surface Windroses, December 1956. Inset: Departure of Average Pressure (mb.) from Normal, December 1956.



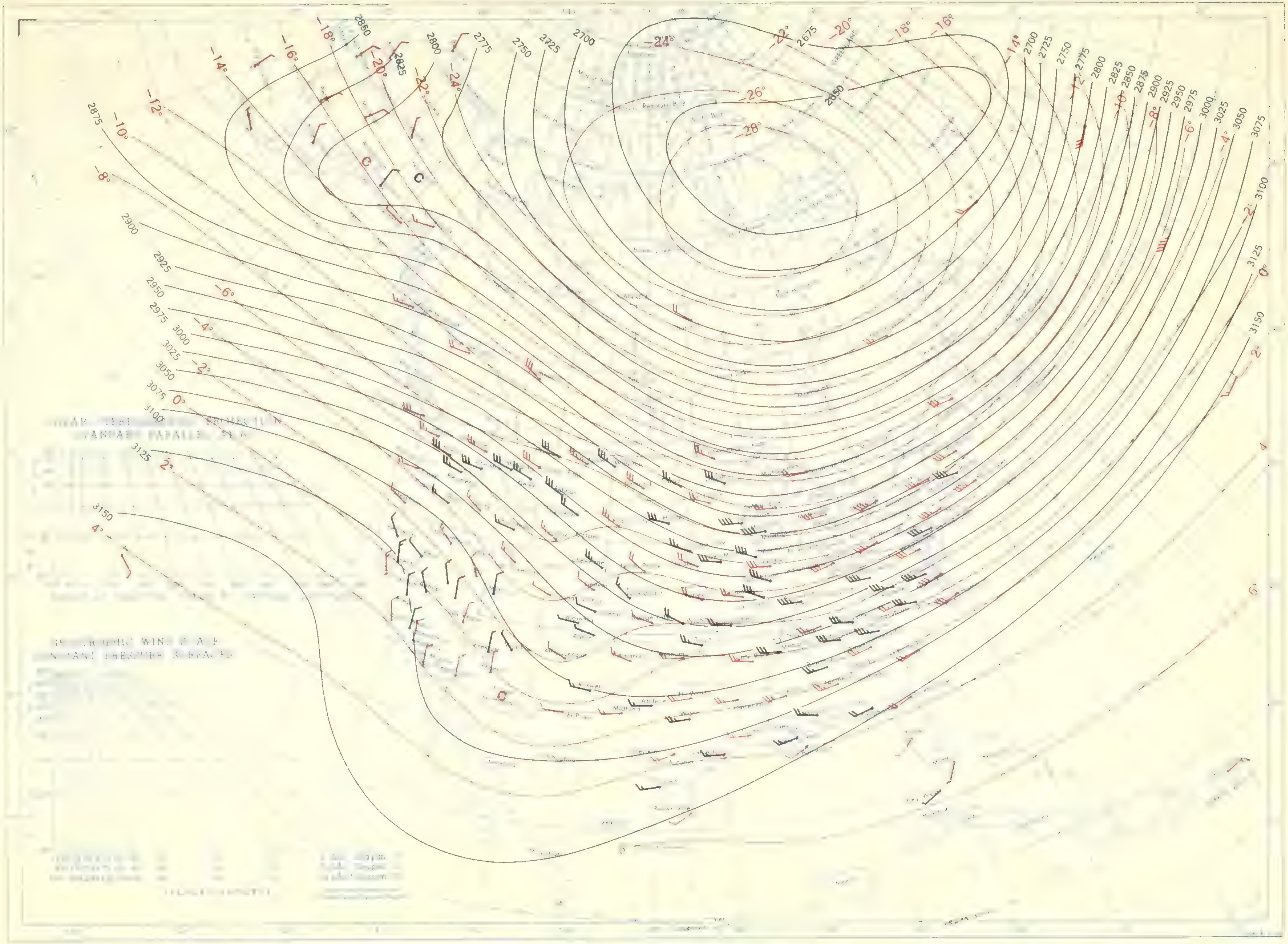
Average sea level pressures are obtained from the averages of the 7:30 a. m. and 7:30 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XII. 850-mb. Surface, 0300 GMT, December 1956. Average Height and Temperature, and Resultant Winds.



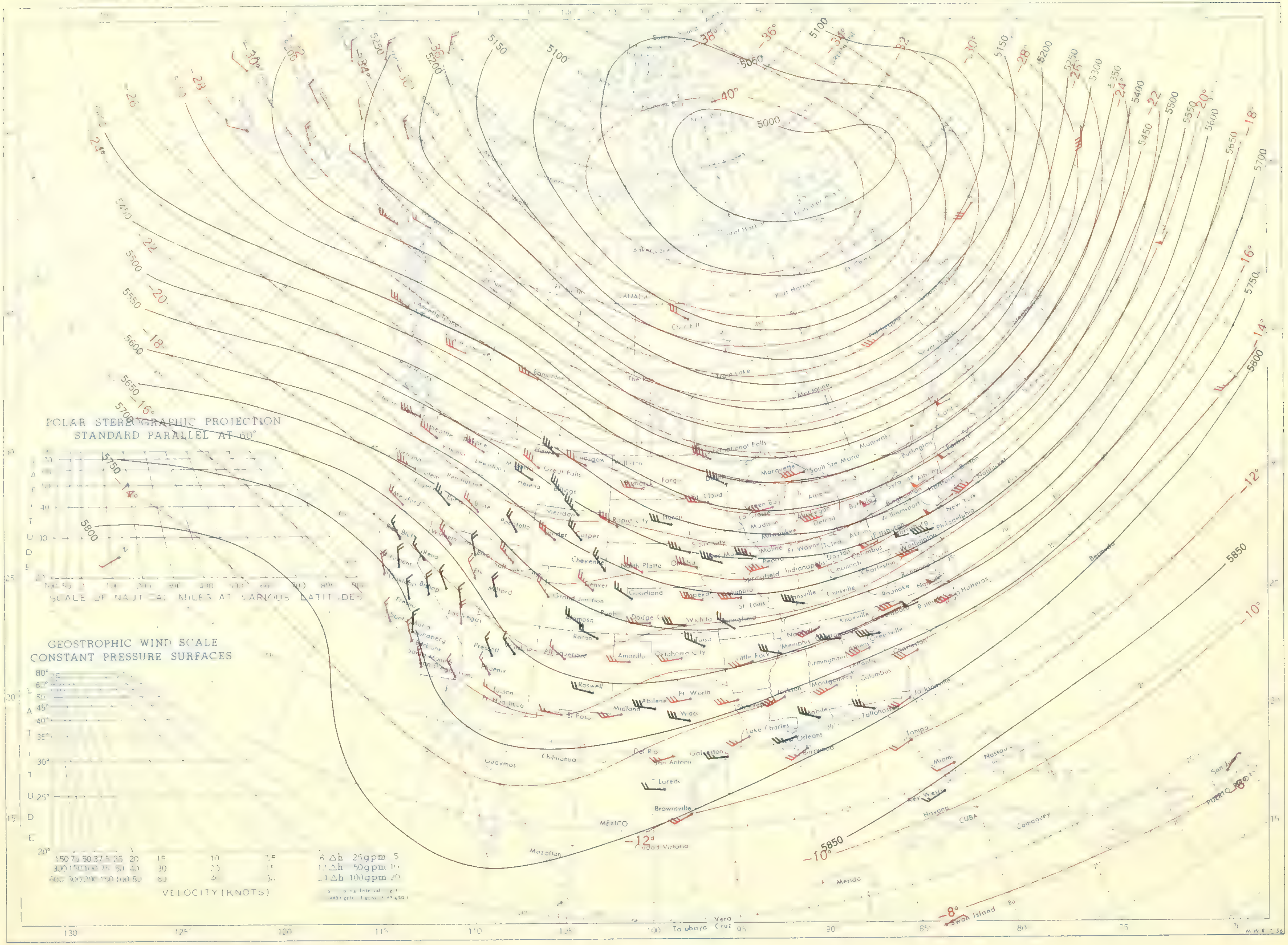
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. Winds shown in red are based on rawins taken at the indicated pressure surface and time. Those in black are based

Chart XIII. 700-mb. Surface, 0300 GMT, December 1956. Average Height and Temperature, and Resultant Winds.



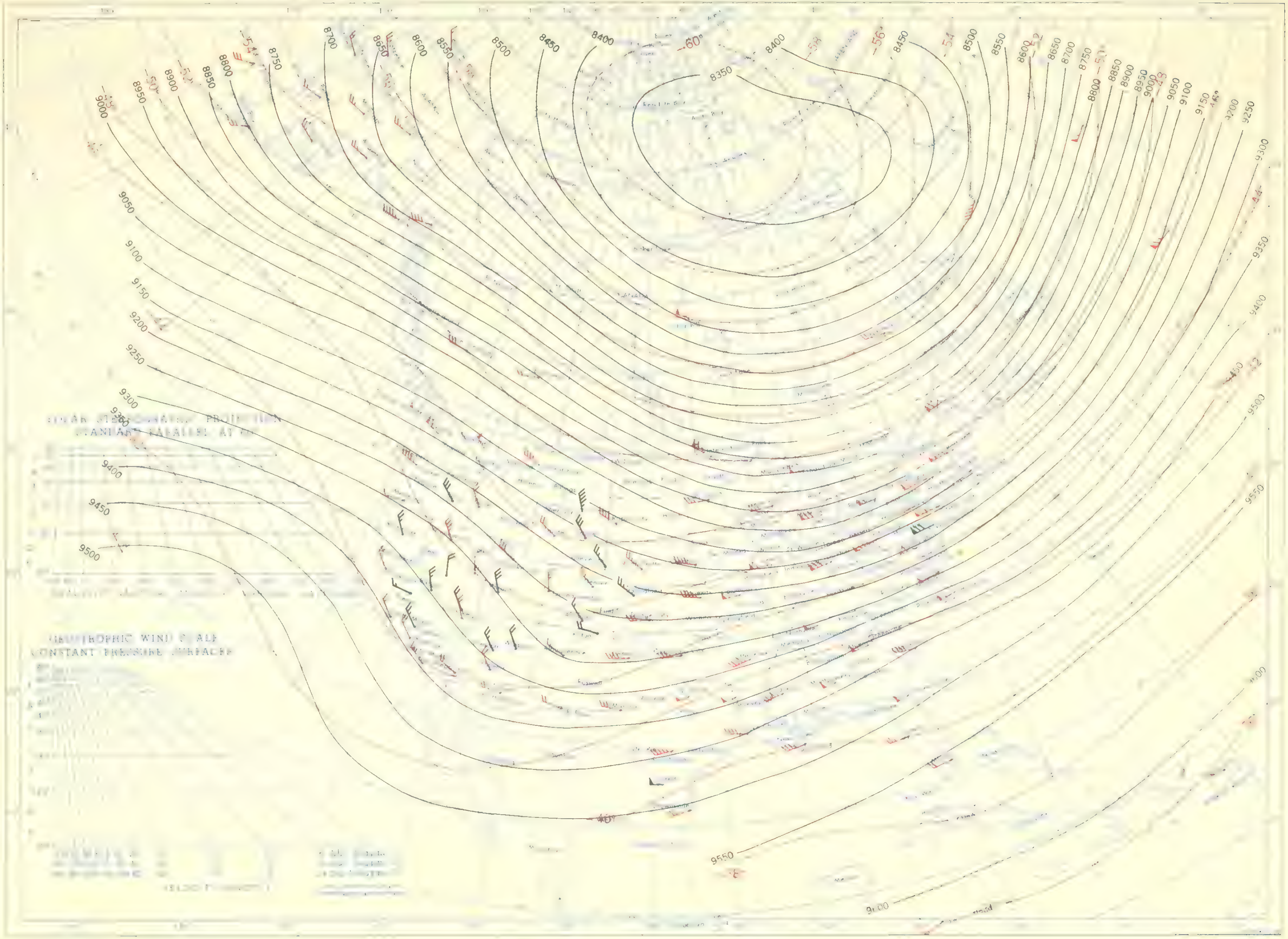
See Chart XII for explanation of map.

Chart XIV. 500-mb. Surface, 0300 GMT, December 1956. Average Height and Temperature, and Resultant Winds.



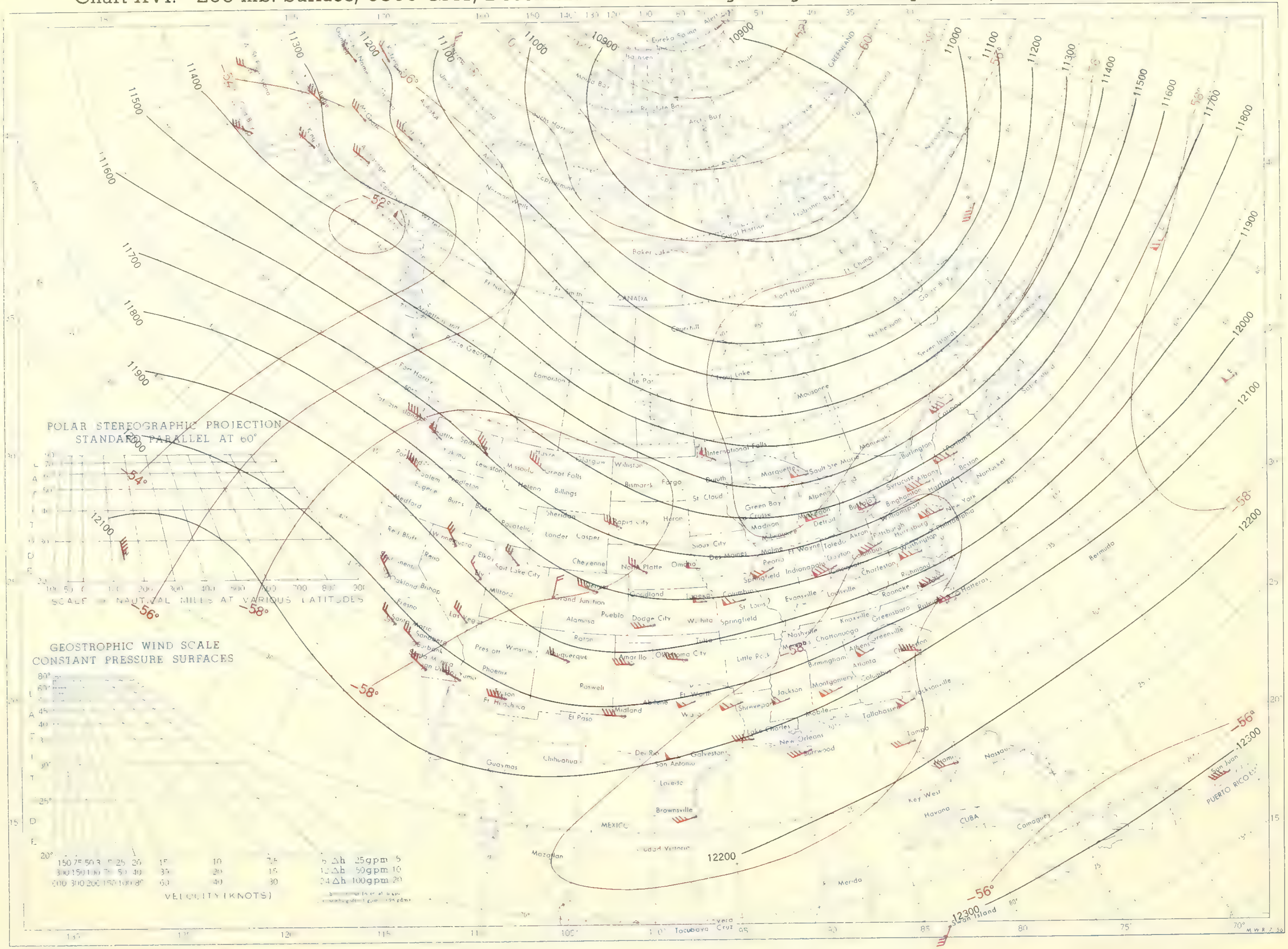
See Chart XII for explanation of map.

Chart XV. 300-mb. Surface, 0300 GMT, December 1956. Average Height and Temperature, and Resultant Winds.



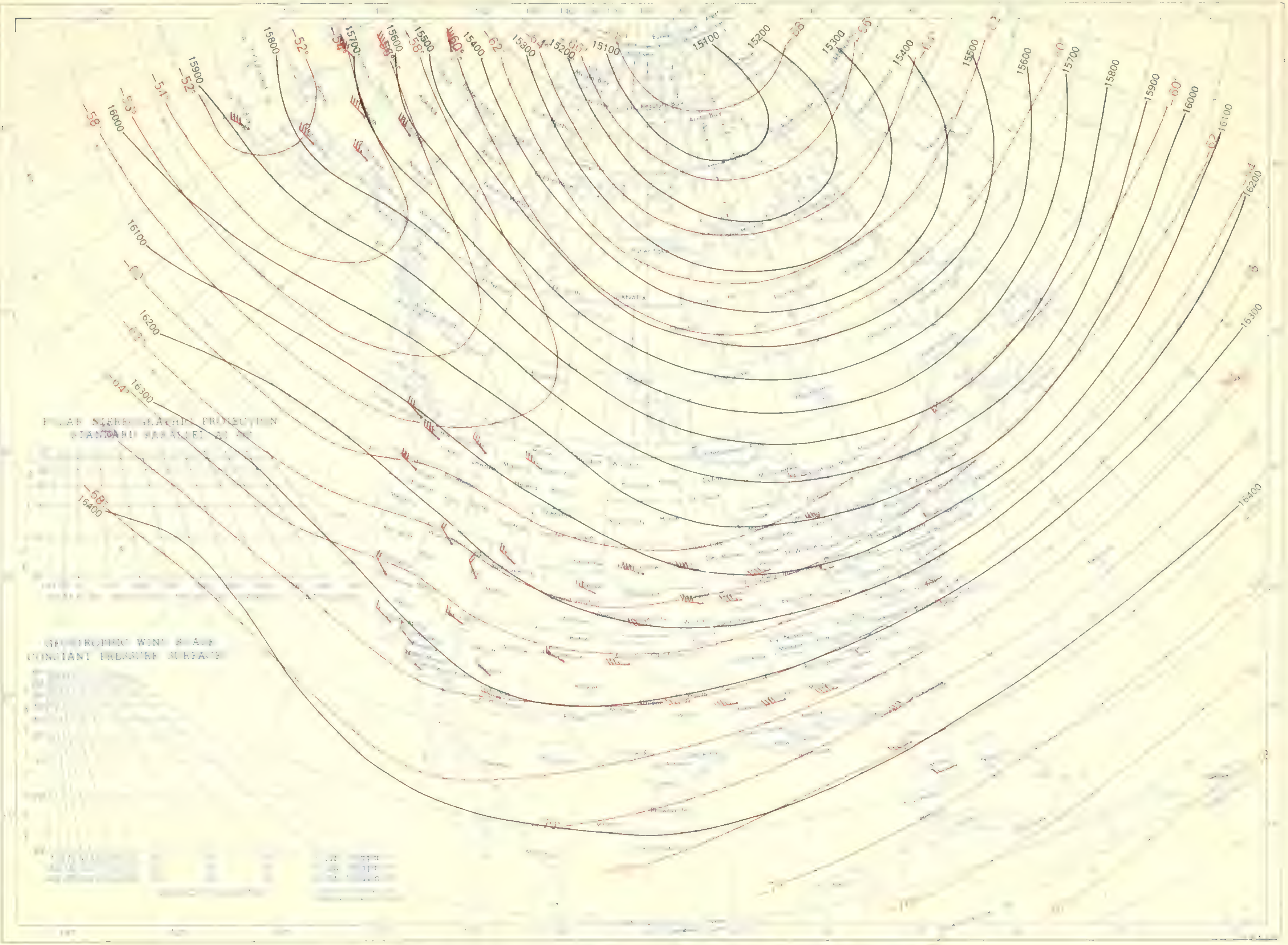
See Chart XII for explanation of map.

Chart XVI. 200-mb. Surface, 0300 GMT, December 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

Chart XVII. 100-mb. Surface, 0300 GMT, December 1956. Average Height and Temperature, and Resultant Winds.



See Chart XII for explanation of map. All winds are from rawin reports.

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II---Percentage of Normal Annual Precipitation, 1956.
III--Tracks of Tornadoes, 1956.

NOTE: State averages and departures of temperature and precipitation, formerly carried as Tables 1 through 6, are no longer published, since they are not believed to be statistically sound. Isoline maps of temperature and precipitation are published in the monthly and annual issues of the Climatological Data for the various states.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 7 No. 13 ANNUAL 1956

GENERAL SUMMARY OF WEATHER CONDITIONS

Compiled by L.H. Seamon
U. S. Weather Bureau, Washington, D. C.

Subnormal precipitation which prolonged and intensified the drought in the central and lower Great Plains and Far Southwest to disastrous proportions was the greatest weather news item of 1956. Of far greater importance to the Nation, however, was the combination of weather conditions in most of the remainder of the country, particularly east of the Mississippi River, which favored one of the highest total crop productions on record.

Other major weather highlights of the year included heavy snowfall in the central and northern mountains of the Far West which helped furnish ample irrigation water during the growing season, a cold, wet spring in the northeastern quarter of the Nation which threw agricultural activities 2 or 3 weeks behind schedule, a cool summer and fall in the Great Basin of the Far West, a cold winter in the northern Great Plains, subnormal rainfall in Florida and adjacent areas of adjoining states, and an unusually warm December east of the Continental Divide.

Total storm losses were less than in recent years due mainly to relatively light hurricane damage, although a near-record outbreak of tornadoes caused heavy property losses and frequent hail caused heavy crop losses in north-central areas.

TEMPERATURE.--Temperatures for the year averaged below normal in the Florida Peninsula, New Jersey, New York, New England, from the upper half of Michigan through the Dakotas, in most sections of the Pacific States, most of Idaho, western Wyoming and northwestern Colorado; but departures were small exceeding 1° only at a few scattered northern stations. In the remainder of the country averages were above normal with greatest departures occurring in the lower Great Plains where they exceeded 2° at a few stations.

The January temperature pattern showed well above-normal values west of the Continental Divide with greatest departures from normal centered over the lower Rocky Mountain region where the warmest January in nearly 100 years occurred at Tucson, Ariz. The month was also unusually warm in the extreme Northeast and a little warmer than normal in the Great Lakes region, but in other areas east of the Continental Divide temperatures averaged below normal with greatest departures in the extreme Southeast where Miami, Fla., experienced its second coldest January on record. The pattern was reversed in February - very cold in the western two-thirds of the country and unusually mild in the eastern third. The year's coldest weather occurred in the northern Rockies on February 1-3, when West Yellowstone, Mont., recorded the year's lowest temperature, -52°, on the 1st and a freeze in Arizona caused some crop damage. Average temperatures for the winter of 1956-1957, however, showed no unusual departures from normal.

Spring (March-April-May) temperature averages were relatively high in the lower Great Plains, abnormally low from the Dakotas eastward and near normal elsewhere. The persistence of below-normal temperatures in the Great Lakes and Northeast may be considered the outstanding temperature feature of the season. March freezes were responsible for crop damage locally in western Colorado and from Texas to the Atlantic coast. April freezes damaged some fruit in Idaho and western Colorado on the 6th and in the Middle Atlantic States and Southeast during the third decade. Crop damage from record-low May temperatures in the Northeast was estimated at millions of dollars, far exceeding the total losses for both March and April. Many stations in the lower Great Plains reported their warmest May on record for another temperature feature of the month.

The summer was unusually warm in the Great Plains with temperatures averaging 2° or more above normal in large areas from South Dakota southward through Texas. Above-normal temperatures were unusually persistent in the lower Great Plains, particularly Oklahoma and Texas, where temperatures remained almost continuously above normal except during a sharp, cool snap from August 19 through the 23d. In the upper Great Plains summer temperatures averaged above normal only because of an unusually hot June, as both July and August were relatively cool. The summer was also 2° or more warmer than normal along the California coast. Notable hot periods occurred in the northern Plains from June 8 to 13, and in the lower Great Plains and lower Mississippi Valley during the first half of August. During the latter period maximum temperatures at Shreveport, La., equaled or exceeded 100° on 15 consecutive days (Aug.4-18), a new record there.

The summer was abnormally cool in the upper Great Lakes region and Northeast, and in most of the area west of the Rocky Mountains, particularly the Great Basin. In the Northeast June was about normal or a little above, while July and August were both unusually cool, particularly July which was 4° or more cooler than normal in some areas. The water temperature in Lake Erie at Buffalo, N Y., averaged 66°, the lowest in 29 years of record. The year's highest temperature, 125°, was recorded at Cow Creek, Calif., on June 25.

Fall (September-October-November) was unusually warm in the Great Plains but was on the cool side in the East and Pacific Northwest. September average temperatures were above normal in the lower Great Plains and Far West and below in the northern Great Plains and East. This pattern was reversed in October except that departures were rather high in the middle Mississippi Basin. November temperatures averaged well below normal except in California and along the Canadian Border east of the Continental Divide where they were a few degrees above. Temperatures in Florida averaged below normal for each of the 3 months. In the Northeast September 1956 was among the coldest on record and in the Far Southwest it was one of the warmest, with Prescott, Ariz., reporting the highest average temperature (72.3°) since 1865. October temperatures were featured by extreme warmth in the mid-

Mississippi Valley where Peoria, Ill., experienced its second warmest October in the past 101 years. November temperatures were featured by one of the earliest freezes on record in the Far Southwest during the first few days of the month, followed by the next few days with record-breaking heat in the same region when a late-season high of 96° for San Diego, Calif., was recorded on the 9th.

December was somewhat on the cool side in the central Great Basin and on the Pacific coast above Santa Maria, Calif., but abnormally warm elsewhere. The month was unusually warm in the East where monthly departures ranged up to 10° and a number of stations reported the warmest December since 1889 and a number of others reported new December highs.

PRECIPITATION.--The year's precipitation was above normal only in the Pacific Northwest, the eastern Dakotas and central Minnesota, the Appalachian region, parts of Alabama, and in scattered northern sections of the area east of the Appalachians. Precipitation was below normal in the remainder of the country. It was less than 50 percent of normal in central and western Texas, western Kansas, eastern New Mexico and in some sections of the Far Southwest, and less than 75 percent in nearly all of the Far Southwest, the central and lower Great Plains, Iowa, northern portions of Missouri and Illinois, and some sections of the central Rocky Mountain region.

In a large area extending from Iowa and northern portions of Illinois and Missouri into the Far Southwest many stations recorded their least annual precipitation totals on record. Some of these stations with long-term records and their 1956 annual totals with departures from normal are listed below:

Chicago, Ill.	22.23	inches	-10.49	inches
Des Moines, Iowa	17.07	"	-13.82	"
Concordia, Kansas	13.73	"	-11.67	"
Dodge City, Kansas	9.97	"	-10.61	"
Tulsa, Okla.	23.24	"	-14.44	"
Amarillo, Tex.	9.94	"	-11.18	"
Dallas, Tex.	21.75	"	-12.67	"
Del Rio, Tex.	4.34	"	-14.24	"
Roswell, N. Mex.	4.35	"	-7.72	"
Phoenix, Ariz.	2.82	"	-4.34	"
Yuma, Ariz.	0.30	"	-3.09	"

In Florida, where the year was also exceptionally dry, Tampa and Key West reported their driest year on record, 28.89 and 20.46 inches, respectively.

Drought threatened in several other sections outside of Florida and the main drought areas in mid-country and the Far Southwest in the course of the year, but failed to become serious due to timely rains.

Record-breaking rains in southern California during January caused damaging floods in the Los Angeles area. Heavy precipitation fell in the Pacific Northwest during both January and February, and during the latter month frequent rains from Kentucky and Tennessee eastward accumulated to 9.74 inches at Greenville, S. C., for its wettest February on record.

The spring season was extremely dry in central and south-central Texas, in an area extending from the central Great Plains through the Far Southwest and in some sections of the northern Great Basin area and the Pacific Northwest. March, dry over most of the country, was extremely dry from the middle Mississippi Basin westward. Sacramento, Calif., recorded its lowest March total, 0.03 inch, in the past 107 years. Mid-April rains of 2 to 4 inches brought much relief from the prolonged dry spell in the Florida Peninsula and generous rains in California during both April and May were very beneficial in that state. Rain was needed badly in the State of Washington by the end of May.

During the summer season rainfall was seriously deficient in most of the southwestern quarter of the country and generally ample to abundant in the North and East. June rains brought relief from the dry spell in the State of Washington. Both July and August were extremely rainy and cloudy in northern areas east of the Great Plains: totals for both months set new records at a number of stations, and at Buffalo, N. Y., not one clear day occurred during the entire month of July. A notable rainfall occurred at Unionville, Md., on July 4 when 1.23 inches was recorded in 1 minute (3:23 p.m. - 3:24 p.m.) or less, setting a new world's record for rainfall intensity. The degree of instrumental accuracy in measuring such high rates of rainfall has never been fully determined; still, the above record exceeds all others by a considerable margin.

The fall season was extremely dry from the lower Great Lakes to the Far Southwest, and precipitation was generally below normal elsewhere except along the north Pacific coast and east of the Appalachians. In the latter area totals generally exceeded 8 inches and ranged up to more than 20 inches in the east Gulf coastal area, the major portion of which fell during the passage of hurricane Flossy, September 24-28. Most of the north Pacific coastal rains fell in October although generous amounts also fell west of the Cascades in November.

During December the only significant above-normal amounts fell in the Appalachian region, the Northeast and a few other small widely scattered areas. At the end of the year, although surface moisture conditions had been replenished in the southeastern Great Plains, drought continued in most of the large area from the lower Great Lakes to the Far Southwest. Drought also persisted in Florida where December was the driest on record in some sections.

DROUGHT.--The 1956 drought in the central and lower Great Plains and Far Southwest, measured on the basis of subnormal rainfall, was the culmination of a series of dry years (50 to 75 percent of normal rainfall) which began in parts of the Far Southwest in the 1940's and spread into the Great Plains in 1952, and into parts of Iowa and Missouri in 1953. In 1954 the drought was greatly intensified in the central and lower Great Plains during one of the hottest and driest summers on record there. At the end of another dry year in 1955 both in the central and lower Great Plains and Far Southwest, ground water had fallen to record-low levels and water supplies in streams, lakes and storage resevoirs had become extremely low.

The first 3 months of 1956 were unusually dry. Rains brought some relief to the eastern portions of the drought area in April and to scattered sections in May and June. July rains brought further relief to the eastern Great Plains and some relief to other sections of the drought area except Texas and southeastern New Mexico; but in all sections, even where generous rains fell, benefits were of short duration due to dry, powdery surface soil and high temperatures. Extremely dry weather in the drought area continued through August, September and most of October.

The disastrous effects of the drought continued to mount throughout the growing season. Dryland crops were a total failure in many sections of the southwestern Great Plains and crop production was reduced greatly throughout the drought area. Particularly serious was the failure of pasture and feed crops which forced liquidation of livestock. A large number of counties were declared disaster areas and received Federal Aid. Thousands of farmers were without means of livelihood and sought work in cities. Businessmen in small towns, a large part of their sales being to farmers, were also hit hard. Water supplies in several large cities became a serious problem.

General rains in late October and early November, and again in mid-December in the southeastern Great Plains brought renewed hopes for fall crops although subsoil moisture remained low and more rain was badly needed there at the end of the year.

SNOWFALL.--During 1956 snowfall in the Cascade Mountains was outstanding. In January, February and March heavy falls boosted depths to near or above previous records, and at Paradise Ranger Station, Wash., the seasonal fall (July 1955 - June 1956) of 1,000.3 inches set a new record for the United States. The previous seasonal record fall was 884 inches at Tamarack, Calif., in 1906 - 07. Snowfall during the first 3 months was also very heavy in the Sierra Nevada and central and northern Rocky Mountains. These heavy snows helped furnish adequate irrigation water during the growing season. Snowfall was very light in the Far West during the closing months of the year and the mountain pack was much below normal.

The year's snowfall was also heavy in New York and New England and occurred unusually late in the spring and unusually early in the fall. Many stations reported twice their average annual amounts. The highest annual total in this area was 211.4 inches at Boonville, N. Y.

Outstanding snowstorms during the year occurred in the southwestern Plains on February 1-3 and in the Northeast on March 16-19.

DESTRUCTIVE STORMS.--January's most destructive storm occurred on the 8th when glaze covered a large area of the Northeast causing damage estimated at $1,000,000 in Pennsylvania alone. The worst snowstorm in 50 years in sections of the southwestern Plains on February 1-3 paralyzed transportation, damaged power-and communication lines, caused some loss of livestock, and on the 24th and 25th high winds caused severe duststorms in the Great Plains and millions of dollars property damage in the Northeast. On March 16-17 New England's worst late-season snowstorm in a generation paralyzed transportation and caused some damage to power-and communication lines. Another snowstorm in central and upper New England on April 7-8 was described as the worst April snowstorm there in 23 years.

An outbreak of tornadoes in central areas on April 7-8 caused heavy damage in parts of Kansas, Tennessee, Wisconsin and Michigan, and on the 15th a very severe tornado hit the outskirts of Birmingham, Ala. Another outbreak of these storms occurred in Ohio and Michigan on May 12. On October 29 tornadoes took a heavy toll of farm property in Kansas and Nebraska. Tornadoes were reported in New England on November 21-22 during the passage of a cold front. In December these storms caused some damage in Missouri and Kansas on the 4th and additional damage estimated at many thousands of dollars in Alabama and Georgia during the night of the 22d - 23d.

During the summer months numerous thunderstorms with damaging wind and hail occurred in the north-central border region.

A glaze storm, one of the most destructive storms of the entire year, caused damage in Macoupin, Madison and Jersey Counties, Illinois, estimated at $50,000,000 on December 8, the worst such storm in west-central Illinois since 1924. In southern California high winds on December 24 - 28 were blamed for spreading brush fires which were responsible for losses estimated at many millions of dollars.

Flossy, the year's only hurricane to enter the United States mainland, on September 24-28, followed a path from the southeastern tip of Louisiana to extreme southeastern Virginia causing several millions of dollars damage; but she also brought beneficial moisture to a wide belt extending from the Gulf to southern New England.

EXCESSIVE PRECIPITATION

(Excessive Short Duration Rainfall)

YEAR 1956

This table contains statistics of maximum amounts of rainfall during the calendar year 1956. Data presented in this table are generally from stations equipped with recording gages. Stations are at City Office locations unless otherwise shown.

Excessive precipitation data for the years 1896-1935 inclusive, generally present the accumulated amounts of precipitation for each 5, 10, or 20 minute intervals during storms in which the rate of fall equaled or exceeded .25 inch in any 5 minute period, or .30 in any 10 minute period, or .35 in any 15 minute period, etc., the tabulation beginning with the 5 minute period where the rate of .05 inch in 5 minutes began and continuing by 10 or 20 minute intervals up to 120 minutes. A detailed explanation of the method used may be found in the publications listed in the last paragraph of this explanation.

The present method, adopted with data for the calendar year 1936, gives the maximum fall of precipitation for the periods 5 to 180 minutes, the maximum amounts being taken for the periods in which the fall is greatest for the given time, and is tabulated to show maximum amounts for 5, 10, 15, 20, 30, 45, 60, 80, 100, 120, 150 and 180 minutes, even if the fall does not equal the excessive rate for some of the periods. (The 15 minute amount was not computed for 1936-43 and the 150 minute amount was not computed for 1944 through 1948).

The following Table A shows limits at which precipitation was considered excessive in this publication:

TABLE A

Duration (minutes)	Depth of precipitation (inches)	Duration (minutes)	Depth of precipitation (inches)
5	.25	60	.80
10	.30	80	1.00
15	.35	100	1.20
20	.40	120	1.40
30	.50	150	1.70
45	.65	180	2.00

This table is made up from the formula, A = t + 20 where A is the accumulated depth in hundredths of inches and t is the time in minutes.

For the years 1936 through 1948 stations in North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Louisiana, Texas, Oklahoma, and San Juan, P. R. used the limits shown in the following Table B:

TABLE B

Duration (minutes)	Depth of precipitation (inches)	Duration (minutes)	Depth of precipitation (inches)
5	.40	60	1.50
10	.50	80	1.90
15	.60	100	2.30
20	.70	120	2.70
30	.90	150	3.30
45	1.20	180	3.90

This table is made up from the formula A = 2t + 30. Its use, however, was discontinued at the end of 1948 and Table A is used by all sections for 1949 and the following years.

Publication of Data. A summary of maximum precipitation data for the years prior to 1896 is published in the annual report of the Chief of the Weather Bureau for 1895-1896. Excessive precipitation data for the period 1881-1896 are published in the annual report of the Chief of the Weather Bureau 1896-1897. Data for the years 1897 through 1934 have been published in the appropriate annual reports of the Chief of the Weather Bureau. For the years 1935 through 1949 these data are published in the appropriate issue of the United States Meteorological Yearbook. For 1950 and succeeding years excessive precipitation are presented in the annual issues of the Climatological Data, National Summary.

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
ALABAMA												
Birmingham Airport												
Feb. 3	0.16	0.27	0.33	0.41	0.50	0.62	0.69	0.77	0.97	1.11	1.26	1.37
Feb. 15	.15	.29	.38	.44	.58	.67	[illegible]	1.08	1.37	[illegible]	[illegible]	1.80
Mar. 7	.45	.52	.58	.66	.69	.70	.70	.70	.70	[illegible]	.77	.79
Mar. 11	.40	.46	.50	.52	.53	.55	.56	.57	.60	.63	.66	.67
Apr. 5	.11	.26	.35	.39	.53	.61	.72	1.02	1.21	1.25	1.37	1.47
Apr. 15	.49	.58	.66	.68	.71	.76	.79	.80	.85	.86	.86	.86
May 31	.25	.35	.45	.48	.48	.48	.48	.48	.49	.49	.49	.49
June 21	.15	.30	.36	.36	.36	.40	.43	.44	.44	.44	.44	.44
July 2	.20	.30	.43	.47	.51	.53	.53	.53	.53	.60	.60	.60
July 4	-	-	----	-	.76	.76	.76	.76	.76	.76	.76	.76
July 14	.30	.35	.41	.50	.53	.56	.58	.59	.63	.67	.72	.74
July 17	.45	.75	.85	.88	1.05	1.45	1.45	1.45	1.45	1.45	1.45	1.45
July 19	.23	.34	.39	.40	.51	.54	.56	.57	.81	.84	.86	.86
July 20	.20	.38	.47	.58	.85	.88	.88	.88	.88	.88	.88	.88
July 25	.30	.44	.46	.46	.46	.46	.46	.47	.72	.72	.79	[illegible]
Aug. 3	.35	.50	.65	.72	.85	.88	.89	.89	.89	.89	.89	.89
Aug. 13	.50	.83	.98	1.15	1.55	1.77	1.85	1.85	1.85	1.85	1.85	1.85
Aug. 19	.57	.80	.90	.96	1.18	1.19	1.19	1.19	1.19	1.19	1.19	1.19
Aug. 30	.25	.40	.55	.55	.55	.55	.55	.82	.82	.82	.98	1.15
Sept. 6	.25	.35	.50	.70	1.00	1.28	1.35	1.42	1.48	1.50	1.55	1.55
Dec. 21	.18	.74	.80	.87	.92	.97	1.08	1.14	1.34	1.40	1.41	1.44
Montgomery Airport												
Mar. 16	.50	.57	.62	.68	.76	.77	.85	.93	.95	.98	.98	.98
Mar. 28	.39	.67	.79	.93	1.30	1.70	1.85	1.90	1.95	2.06	2.12	2.25
June 10	.27	.34	.46	.53	.71	.74	.76	.76	.76	.76	.76	.76
July 14	.30	.55	.77	.93	1.10	1.12	1.19	1.65	1.66	1.66	1.66	1.66
July 17	.48	.80	.89	.93	.98	1.03	1.03	1.04	1.08	1.08	1.09	1.09
July 21	.17	.27	.37	.43	.50	.58	.62	.62	.63	.63	.64	.66
July 23	.56	1.01	1.34	1.76	2.33	2.52	2.54	2.65	2.67	2.67	2.67	2.67
Aug. 13	.16	.32	.40	.51	.66	.76	.86	.94	.99	1.00	1.01	1.02
Aug. 20	.22	.38	.42	.42	.59	.61	.62	.63	.64	.64	.64	.64
Aug. 28	.32	.35	.35	.35	.55	.58	.58	.58	.58	.58	.58	.58
Sept. 18	.26	.46	.63	.67	.69	.69	.70	.71	.71	.71	.71	.71
Sept. 24*	.28	.46	.62	.70	.90	1.15	1.45	1.62	1.80	1.85	1.95	2.15
Sept. 25*	.14	.23	.30	.40	.60	.85	1.15	1.40	1.85	2.00	2.25	2.85
Oct. 1	.55	1.00	1.36	1.56	1.90	2.39	2.58	2.84	2.85	2.87	2.88	2.88
Dec. 15	.62	1.11	1.35	1.47	1.60	1.60	1.60	1.60	2.20	2.47	2.51	2.58
Dec. 22	.23	.40	.49	.53	.63	.92	1.07	1.18	1.54	1.55	1.65	1.71
Dec. 23*	.15	.29	.38	.45	.55	.70	1.15	1.30	1.57	1.70	1.77	1.90
ARIZONA												
Phoenix Airport												
July 13	.25	.40	.46	.54	.59	.61	.61	.61	.61	.61	.61	.61
Prescott Airport												
July 25	.25	.34	.36	.36	.59	.72	.74	.74	.74	.74	.74	.74
Tucson Airport												
Aug. 12	.29	.40	.45	.46	.46	.67	.71	.72	.72	.73	.73	.73
Winslow Airport												
July 25	.20	.35	.42	.47	.53	.53	.53	.53	.53	.53	.53	.53
Yuma Airport						None						
ARKANSAS												
Fort Smith Airport												
Apr. 15	.23	.38	.50	.51	.51	.52	.53	.53	.53	.53	.57	.62
Apr. 28	.15	.25	.30	.39	.55	.67	.75	.89	.93	.96	.98	1.01
May 31	.26	.40	.45	.52	.60	.67	.71	.72	.78	.80	.82	.82
June 7	.28	.34	.37	.38	.38	.45	.48	.48	.48	.48	.48	.48
June 27	.24	.35	.45	.49	.53	.59	.74	.83	.86	.87	.89	.90
Aug. 31	.36	.57	.74	.98	1.25	1.33	1.37	1.39	1.39	1.39	1.39	1.39
Nov. 19	.43	.50	.54	.56	.66	.67	.67	.67	.73	.75	.76	.76
Dec. 6	.26	.33	.38	.42	.45	.46	.47	.50	.51	.51	.51	.51
Little Rock Airport												
Feb. 8	.30	.55	.58	.68	.85	.92	.95	1.00	1.03	1.05	1.08	1.15
Feb. 17	.35	.45	.57	.60	.62	.62	.80	.93	.95	1.01	1.01	1.23
May 14	.37	.53	.60	.65	.67	.71	.85	.95	1.15	1.24	1.27	1.27
June 26	.37	.60	.97	1.10	1.42	1.70	1.71	1.71	1.72	1.72	1.72	1.72
July 5	.25	.46	.60	.62	.66	.66	.66	.66	.66	.66	.66	.66
July 8	.30	.53	.80	1.00	1.30	1.52	1.62	1.68	1.70	1.72	1.72	1.74
July 17	.23	.40	.60	.83	1.10	1.25	1.25	1.25	1.25	1.25	1.25	1.25
July 28	.45	.80	1.05	1.15	1.25	1.50	1.62	1.64	1.64	1.64	1.64	1.64
Aug. 31	.25	.48	.71	.86	.94	.95	.96	.97	.99	1.05	1.08	1.14
Oct. 25	.10	.20	.27	.32	.50	.70	.80	.84	.87	.89	.89	.89
Nov. 2	.20	.32	.45	.50	.73	.84	1.06	1.26	1.36	1.60	1.71	1.73
Dec. 7	.22	.34	.36	.37	.38	.38	.38	.38	.38	.38	.38	.38
Texarkana Airport												
Feb. 16	.27	.38	.45	.48	.49	.49	.49	.49	.49	.49	.49	.49
Mar. 2	.45	.46	.47	.49	.57	.75	.75	.75	.75	.75	.75	.75
Apr. 5	.25	.36	.40	.44	.48	.53	.58	.64	.64	.64	.64	.64
Apr. 30	.15	.29	.39	.49	.56	.63	.70	.80	.88	.94	1.02	1.04
June 28	.17	.29	.39	.42	.48	.77	1.04	1.24	1.30	1.30	1.30	1.30
July 29	.33	.42	.45	.47	.50	.50	.50	.50	.50	.50	.50	.50
July 31	.50	.62	.67	.70	.77	.79	.80	.80	.80	.80	.80	.80
Aug. 10**	.26	.43	.48	.63	.95	.97	.97	.97	.97	.97	.97	.97
Aug. 31	.15	.28	.36	.41	.47	.51	.52	.56	.59	.61	.62	.62
Nov. 19	.18	.29	.44	.51	.55	.64	.64	.64	.67	.71	.72	.73
CALIFORNIA												
Bakersfield Airport												
Oct. 6	.25	.31	.38	.41	.54	.59	.68	.83	.90	1.00	1.11	1.15
Blue Canyon Airport						None						
Burbank						None						
Eureka						None						
Fresno Airport						None						
Los Angeles												
Jan. 26	.16	.28	.35	.39	.54	.60	.95	1.10	1.34	1.54	1.91	2.21
Mt. Shasta												
May 29	(.28)	(.48)	(.64)	(.79)	(1.05)	(1.20)	(1.43)	1.43	1.43	1.43	1.43	1.43
July 10	(.30)	.41	.41	.41	.44	.45	.45	.45	.45	.45	.45	.48
CALIFORNIA (Cont'd.)												
Red Bluff Airport												
May 1	0.29	[illegible]	[illegible]	0.36	[illegible]	1.26	1.37	1.51	1.59	1.61	1.62	1.63
May [illegible]	.13	.23	.29	.40	.48	[illegible]	.53	.67	.70	.77	.81	[illegible]
May 10	.21	.30	.31	.33	.34	[illegible]	[illegible]	.37	.38	.38	.39	.39
Sacramento												
Jan. 7	.21	.27	.29	.30	.31	[illegible]	.42	.44	.46	.50	.53	.60
San Diego Airport						None						
San Francisco						None						
COLORADO												
Alamosa						None						
Denver Airport												
July 27	.25	.41	.50	.58	.73	.82	.88	.90	.92	.95	1.00	1.03
July 30	.15	.27	.30	.37	.40	.66	.73	.80	.82	.86	.90	.95
July 31	.16	.31	.41	.51	.62	.67	.75	.81	.94	1.03	1.15	1.15
Aug. 2	.25	.50	.64	.73	.94	1.21	1.30	1.35	1.35	1.35	1.35	1.35
Grand Junction AP						None						
Pueblo Airport												
July 3	.26	.48	.63	.68	.76	.78	.78	.78	.78	.78	.78	.78
CONNECTICUT												
Bridgeport Airport												
July 11	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40
Sept. 7	.32	.54	.62	.67	.74	.83	.83	.88	.88	.88	.88	.88
Oct. 6	.28	.33	.45	.56	.78	.97	1.06	1.30	1.68	1.75	1.90	2.09
Nov. 1	.25	.40	.50	.56	.65	.75	.81	.81	.81	.81	.81	.81
Hartford* Airport												
June 1	.27	.31	.32	.32	.32	.32	.32	.32	.32	.32	.32	.34
June 3	.16	.27	.34	.47	.67	.77	.90	1.07	1.16	1.35	1.46	1.49
Sept. 6	.15	.25	.33	.35	.57	.63	.64	.73	.83	.88	1.09	1.14
New Haven Airport												
Sept. 2	.29	.32	.32	.32	.32	.32	.32	.32	.33	.33	.35	.35
Sept. 7	.15	.23	.35	.44	.56	.69	.78	.81	.85	.90	.91	.94
DIST. OF COLUMBIA												
Washington												
May 30	.25	.48	.56	.68	.86	.88	.89	.89	.89	.89	.89	.89
June 22	.52	.89	1.20	1.35	1.49	1.64	1.67	1.71	1.73	1.74	1.74	1.74
July 4	.21	.27	.37	.41	.49	.60	.70	.77	.86	.97	1.02	1.06
July 27	.20	.33	.51	.57	.59	.60	.62	.64	.65	.66	.66	.66
Sept. 17	.22	.32	.34	.35	.36	.37	.38	.46	.49	.49	.49	.49
FLORIDA												
Apalachicola												
Jan. 22	.25	.33	.36	.37	.39	.42	.44	.46	.46	.46	.46	.46
Jan. 23	.53	.76	.84	.87	.87	.90	.93	.93	.94	.97	1.01	1.01
Feb. 16	.21	.37	.46	.53	.66	.75	.77	.86	.87	.87	.87	.87
Mar. 3	.26	.34	.39	.47	.53	.57	.60	.61	.66	.66	.66	.66
Apr. 6	.22	.37	.46	.50	.57	.58	.58	.58	.59	.59	.59	.59
Apr. 10	.18	.33	.37	.45	.49	.58	.62	.64	.65	.65	.65	.65
June 2	.35	.52	.60	.65	.80	.86	.86	.86	.86	.86	.86	.86
June 20	.29	.44	.53	.56	.57	.90	.92	.92	.92	.92	.92	.92
June 27	.23	.28	.34	.43	.53	.57	.57	.57	.57	.57	.57	.57
July 4	.26	.38	.42	.42	.43	.44	.45	.48	.52	.56	.68	.77
Aug. 12**	.37	---	---	---	---	---	---	---	---	---	---	---
Aug. 20**	---	---	---	---	---	---	---	---	---	---	---	---
Aug. 21**	---	---	---	---	---	---	---	---	---	---	---	---
Sept. 4	.35	.66	.83	.88	1.23	1.56	1.56	1.68	1.68	1.68	1.68	1.68
Sept. 6	.30	.53	.75	.83	.85	.86	.87	.87	.88	.90	.91	.91
Sept. 24	.37	.57	.72	.79	1.03	1.26	1.51	1.78	2.09	2.41	2.75	2.81
Oct. 3	.21	.40	.54	.63	.73	.83	.89	.93	.93	.93	.93	.93
Oct. 4	.22	.39	.48	.62	.80	.97	1.07	1.21	1.28	1.33	1.37	1.39
Nov. 29	.40	.60	.65	.69	.70	.72	.74	.77	.77	.77	.77	.77
Daytona Beach AP												
Jan. 23	.23	.29	.31	.37	.53	.67	.96	.98	1.01	1.04	1.06	1.14
May 4	.24	.41	.55	.65	.75	.86	.94	.96	.97	1.04	1.20	1.24
June 5	.35	.57	.74	.80	.82	.84	.85	.86	.86	.86	.86	.86
June 25	.30	.53	.85	1.00	1.07	1.22	1.25	1.26	1.26	1.27	1.30	1.30
June 26	.30	.50	.60	.80	1.22	1.58	1.71	1.75	1.75	1.77	1.77	1.77
June 28	.10	.13	.18	.53	.58	.58	.58	.64	.64	.64	.66	.97
July 5	.22	.42	.47	.54	.57	.62	.67	.69	.69	.70	.70	.70
July 19	.16	.22	.29	.42	.57	.60	.77	1.07	1.11	1.11	1.11	1.11
Aug. 3	.18	.30	.35	.41	.52	.52	.52	.52	.52	.52	.52	.52
Aug. 22	.19	.32	.41	.42	.42	.43	.43	.43	.43	.43	.44	.44
Aug. 29	.45	.85	1.02	1.20	1.45	1.58	1.62	1.62	1.62	1.62	1.62	1.62
Sept. 18	.22	.40	.58	.69	.75	.79	.87	.93	.95	.96	.96	.96
Oct. 3	.16	.30	.33	.33	.34	.38	.40	.40	.40	.40	.40	.40
Fort Myers Airport												
Feb. 11	.35	.39	.42	.44	.45	.47	.50	.50	.51	.53	.60	.60
Apr. 27	.27	.35	.41	.44	.47	.48	.51	.52	.52	.52	.52	.52
Apr. 30	.25	.50	.70	.90	1.20	1.32	1.65	1.83	2.04	2.08	2.15	2.16
May 1	.38	.58	.73	.86	1.03	1.28	1.35	1.38	1.40	1.40	1.40	1.40
May 6	.23	.37	.42	.50	.66	.66	.66	.66	.66	.66	.93	.94
May 8	.20	.40	.55	.66	.80	.87	.89	.95	1.03	1.05	1.30	1.42
June 4	.45	.80	1.00	1.22	1.55	1.77	1.82	1.82	1.82	1.82	1.82	1.82
June 15	.45	.84	1.00	1.16	1.33	1.45	1.73	1.76	1.79	1.82	1.84	1.87
July 4	.15	.25	.35	.40	.55	.63	.64	.64	.64	.64	.64	----
July 4	.45	.72	.81	.86	.95	1.06	1.06	1.06	1.07	1.09	1.11	1.15
July 5	.22	.44	.52	.68	.80	1.10	1.35	1.48	1.56	1.57	1.60	1.74
July 28	.27	.40	.50	.52	.54	.54	.54	.54	.54	.54	.54	.54
Aug. 10	.28	.56	.75	.95	1.20	1.48	1.53	1.56	1.56	1.56	1.57	1.57
Aug. 11	.36	.55	.70	.80	1.03	1.15	1.18	1.18	1.18	1.18	1.18	1.18
Aug. 17	.36	.50	.65	.71	.96	1.30	1.45	2.00	2.19	2.19	2.20	2.25
Aug. 30	.15	.20	.30	.36	.55	.65	.66	.67	.67	.67	.67	.67
Sept. 2	.37	.50	.55	.56	.56	.57	.58	.59	.60	.61	.61	.61
Sept. 29	.60	1.07	1.20	1.40	1.70	2.08	2.15	2.16	2.17	2.17	2.19	2.23
Oct. 4	.20	.36	.55	.60	.64	.65	.65	.67	.75	.80	.93	.99
Nov. 30	.25	.43	.55	.65	.69	.70	.70	.70	.70	.70	.70	.70

* Defective triple register record
** Estimated, record blurred
( ) Data estimated

* Windsor Locks
** Excessive but no record

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
FLORIDA (Cont'd.)												
Jacksonville*												
Jan. 23	0.34	0 43	0.48	0.50	0.53	0.57	0.63	0.72	0.80	0.87	0.94	0.99
May 3	.18	.22	.28	.42	.47	.50	.67	.67	.80	.87	.90	.90
Jacksonville**												
May 3	.29	.53	.73	.84	.93	.96	.97	.97	.97	1.07	1.13	1.13
May 24	.25	.37	.48	.54	.56	.57	.60	.61	.62	.66	.67	.70
June 1	.41	.59	.83	.90	1.08	1.28	1.77	1.79	1.81	1.82	1.82	1.82
June 5	.15	.28	.37	.48	.55	.56	.58	.58	.58	.58	.58	.58
June 19	.28	.40	.63	.75	86	.89	.90	.94	1.00	1.03	1.07	1.11
June 24	.23	.44	.59	.77	1.05	1.23	1.31	1.38	1.41	1.42	1.42	1.42
June 28	.23	.38	.59	.80	1.11	1.17	1.17	1.19	1.22	1.24	1.25	1.26
July 1	.18	.33	.40	.53	.58	.61	.69	.76	.80	.83	1.24	1.34
July 5	.17	.30	.34	.40	.56	.80	.93	.94	.94	.94	1.03	1.08
July 6	.25	.33	.38	.43	.48	.80	.86	.86	.86	.86	.86	.86
July 16	.35	.66	.98	1.11	1.16	1.29	1.35	1.37	1.41	1.42	1.43	1.43
July 17	.25	.48	.65	.79	.82	.83	.83	.84	88	.90	.92	.92
July 20	.34	.67	.81	.91	.97	1.07	1.11	1.14	1 15	1.15	1.15	1.23
Aug 15	.31	.51	.63	.73	.79	1.10	1.49	1.68	1.80	2.01	2.08	2.09
Aug. 28	.29	.51	.76	.86	.94	.98	.98	.98	.98	.98	.98	.98
Aug. 30	.14	.24	.38	.43	.56	.62	.62	.63	.64	.87	.88	.88
Sept. 24	.42	.48	.56	.72	.74	.74	.74	.74	.74	.74	.74	.87
Oct. 15	.16	.27	.40	.45	.49	.58	.63	.68	.73	.76	.77	.81
Oct. 16	.27	.37	.42	.46	.50	61	.78	.93	1.08	1.24	1.58	1.87
Oct. 21	.33	.55	.75	.79	.80	.81	.81	.81	.81	.81	.81	.81
Key West												
May 9	.28	.48	.76	.88	.93	.97	1.03	1.04	1.04	1.04	1.04	1.04
June 10	.33	.61	.71	.80	1.05	1.25	1.29	1.31	1.36	1.42	1.46	1.47
Aug. 30	.23	.32	.38	.41	.46	.48	.49	.49	.49	.49	.49	.49
Sept. 3	.28	.43	.52	.55	.56	.73	.73	.73	.73	.73	.73	.73
Sept. 16	.32	.52	.66	.76	.79	.79	.79	.79	.79	.80	.82	.82
Sept. 18	.28	.40	.64	.78	1.00	1.14	1.19	1.21	1.25	1.26	1.26	1.26
Sept. 20	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27
Sept. 21	.24	.42	.52	.65	.71	.74	.79	.84	.88	.96	1.01	1.05
Sept. 27	.18	.35	.38	.39	.40	.48	.74	.78	.79	.79	.79	.79
Sept. 27	.32	.45	.48	.50	.53	.56	.63	.69	.72	.78	.86	.87
Miami												
Apr. 10	.68	1.33	1.70	1.98	2.26	2.37	2.40	2.44	2.44	2.44	2.44	2.44
May 25	.24	.33	.40	.44	.46	.47	.47	.47	.47	.47	.47	.47
June 6	.34	.52	.65	.69	.74	.74	.75	.75	.75	.75	.78	.97
June 7	.31	.58	.81	.91	.93	.93	.95	.96	.96	.96	.96	.96
June 27	.41	.63	.76	.81	.84	1.15	1.25	1.27	1.27	1.28	1.28	1.39
July 17	.20	.35	.43	.58	.69	.82	.94	.98	.99	.99	.99	.99
Aug. 15	28	.42	.60	.78	.89	1.02	1.02	1.03	1.39	1.40	1.40	1.40
Aug. 19	.21	.33	44	.47	.64	.71	.74	.75	.75	.75	.75	.75
Aug. 20	.15	.24	.35	.50	.56	.61	.61	.61	.61	.61	.61	.61
Aug. 22	.25	.36	48	.51	.52	.53	.67	.68	.70	.89	1.20	1.24
Sept. 3	.22	.43	.49	.50	.57	.64	.78	.79	.79	.79	.79	.79
Sept. 5	.39	.61	.93	1.05	1.17	1.18	1.18	1.20	1.20	1.23	1.26	1.26
Sept. 7	.23	.45	.55	.56	.67	.74	.76	.84	.85	.87	.87	.87
Sept. 12	.20	.30	.35	.37	.43	.52	.59	.60	.60	.60	.60	.60
Sept. 19	.29	.43	.44	.47	.76	.79	.82	.83	.83	.83	.83	.83
Sept. 26	.25	.47	.61	.63	.66	.69	.73	.73	.73	.89	.92	.92
Oct. 13	.26	.41	.50	.54	.68	.71	.71	.71	.71	.71	.71	.71
Miami Airport												
Jan. 21	.18	.35	.42	.55	.75	.80	.86	.86	.86	.86	.86	.86
Jan. 31	.30	.35	.39	.40	.40	.40	.40	.40	.40	.40	.40	.63
Apr. 10	.45	.75	1.00	1.10	1.20	1.40	1.63	1.78	1.78	1.78	1.78	1.78
May 8	.35	.60	.85	1.00	1.25	1.30	1.33	1.40	1.42	1.44	1.47	1.54
May 9	.28	.53	.65	.66	.68	.78	.78	.78	1.00	1.05	1.08	1.08
May 18	.37	.56	.67	.76	.87	.98	1.04	1.06	1.07	1.07	1.07	1.07
May 25	.30	.37	.40	.42	.42	.42	.42	.43	.43	.43	.43	.43
May 27	.18	.35	.47	.61	.72	.73	.75	.78	.82	.82	.82	.82
June 2	.25	.37	.50	.52	.52	.52	.52	.52	.52	.52	.52	.52
June 26	.27	.37	.45	.55	.67	.67	.67	67	.67	.67	.67	.67
June 26	.23	.27	.50	.55	.65	.65	.65	.65	.65	.65	.65	.65
July 10	.20	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
July 17	.20	.30	.32	.33	.34	.35	.36	.36	.36	.36	.36	.36
July 18	.20	.30	.40	.42	.45	.46	.48	.48	.48	.48	.48	.48
Aug. 2	.20	.30	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36
Aug. 19	.30	.50	.60	.65	.85	1.05	1.05	1.05	1.05	1.05	1.05	1.05
Aug. 20	.40	.55	.63	.67	.77	.95	1.08	1.09	1.09	1.14	1.16	1.16
Aug. 24	.25	.30	.35	.37	.39	.39	.40	.40	.40	.40	.40	.40
Aug. 31	.25	.31	.35	.37	.37	.37	.39	.39	.39	.39	.39	.39
Sept. 3	.25	.40	.45	.50	.51	.54	.60	.75	.78	.79	.81	.84
Sept. 5	.35	.74	1.00	1.17	1.35	1.50	1.80	2.06	2.10	2.12	2.13	2.16
Sept. 5	.25	.43	.65	.78	.88	.90	.94	.97	.99	.99	.99	.99
Sept. 18	.14	.17	.34	.38	.55	.89	1.16	1.16	1.16	1.16	1.16	1.16
Sept. 19	.25	.35	.47	.52	.57	.72	.85	.87	.87	.90	.95	.95
Oct. 4	.20	.30	.38	.45	.51	.54	.54	.54	.55	.56	.56	.56
Oct. 13	.20	.30	.35	.40	.52	.65	.75	.80	.81	.81	.81	.83
Oct. 15	.25	.43	.55	.65	1.08	1.18	1.18	1.18	1.18	1.24	1.24	1.24
Orlando Airport												
Apr. 25	.48	.94	1.26	1.50	1.62	1.64	1.66	1.69	1.71	1.73	1.74	1.76
May 7	.21	.27	.44	.46	.47	.48	.50	.53	.54	.55	.56	.57
May 28	.20	.34	.36	.39	.55	.62	.76	1.10	1.19	1.19	1.19	1.19
June 16	.25	.35	.40	.49	.49	.49	.49	.49	.49	.49	.49	.49
June 26	.54	.86	1.22	1.27	1.43	1.55	1.57	1.59	1.60	1.80	1.88	1.89
June 27	.23	.26	.42	.49	.66	.81	.86	.88	.94	1.05	1.09	1.10
July 4	.20	.32	.38	.42	.45	.47	.49	.51	.51	.51	.51	.51
July 11	.30	.35	.40	.65	.65	.70	.73	.78	.78	.78	.78	.78
July 29	.21	.26	.37	.44	.59	.69	.75	.76	.76	.76	.76	.76
July 30	.50	.88	1.19	1.40	1.68	1.75	1.77	1.78	1.78	1.78	1.78	1.78
July 31	.21	.33	.40	.42	.45	.49	.52	.52	.52	.52	.52	.52
Aug. 10	.35	.60	.75	.81	1.00	1.44	1.78	1.82	1.83	1.83	1.83	1.83
Aug. 20	.37	.42	.43	.43	.43	.43	.43	.43	.43	.43	.43	.43
Aug. 21	.14	.25	.35	.36	.37	.37	.41	.41	.41	.41	.41	.41
Aug. 28	.22	.33	.50	.66	.97	1.04	1.06	1.06	1.06	1.06	1.06	1.06
Aug. 30	.15	.22	.30	.43	.59	.63	.70	.70	.70	.70	.70	.70
Sept. 9	.30	.60	.65	.77	.96	1.11	1.68	1.91	1.97	2.00	2.05	2.08
Sept. 18	.25	.45	.62	.76	.97	1.14	1.21	1.26	1.32	1.37	1.41	1.42
Nov. 8	.30	.50	.61	.70	.80	.80	.80	.80	.80	.80	.86	.96
Pensacola												
Jan. 23	.21	.37	.45	.59	.84	.95	1.08	1.14	1.38	1.48	1.53	1.57
Feb. 8	.29	.36	.40	.47	.56	.63	.68	.76	.84	.91	.95	.98
Feb. 15	.17	.21	.31	.39	.56	.70	.77	.89	.97	1.10	1.15	1.19
Mar. 3	.26	.38	.42	.43	.46	.48	.49	.54	.55	.56	.57	.58
Mar. 11	.30	.50	.65	.81	1.01	1.60	1.84	1.98	2.07	2.10	2.32	2.39
Apr. 10	.50	.73	.88	1.05	1.30	1.36	1.41	1.46	1.48	1.48	1.50	1.53
May 5	.38	.61	.68	.75	1.02	1.12	1.13	1.15	1.15	1.15	1.15	1.37
June 10	.40	.62	.81	.99	1.18	1.20	1.20	1.20	1.20	1.20	1.20	1.20
FLORIDA (Cont'd.)												
Pensacola (Cont'd)												
June 11	0.17	0.30	0.33	0.33	0.33	0.34	0.34	0.34	0.34	0.34	0.34	0.34
June 13	.35	.55	.59	.70	.95	1.20	1.26	1.28	1.37	1.39	1.84	2.00
June 16	.35	.63	.78	.91	1.18	1.37	1.37	1.43	1.57	1.81	2.04	2.43
July 4	.24	.36	.43	.46	.50	.51	.53	.55	.55	.55	.55	.57
July 8	.19	.32	.37	.39	.52	.68	.71	.83	1.00	1.15	1.26	1.33
July 9	.34	.44	.49	.51	.57	.85	.97	1.02	1.04	1.04	1.04	1.04
July 18	.40	.64	.84	.99	1.17	1.26	1.31	1.31	1.32	1.33	1.35	1.37
July 28	.36	.56	.58	.72	.83	.84	.84	.84	.84	.84	.84	.84
Aug. 12	.29	.46	.62	.75	.82	.83	.83	.83	.84	.84	.84	.84
Aug. 14	.22	.42	.57	.64	.73	.75	.75	.75	.75	.75	.75	.75
Aug. 15	.26	.31	.31	.33	.38	.38	.38	.38	.38	.38	.38	.38
Aug. 30	.30	.39	.44	.45	.45	.45	.45	.45	.45	.45	.46	.46
Sept. 2	.24	.34	.39	.43	.45	.45	.45	.45	.45	.45	.47	.47
Sept. 24	.20	.36	.52	.64	.76	.94	1.05	1.23	1.40	1.51	1.62	1.82
Sept. 24	.21	.32	.47	.61	.89	1.29	1.48	1.58	1.87	2.20	2.46	2.84
Sept. 30	.26	.34	.37	.40	.40	.43	.52	.70	.72	.73	.73	.73
Oct. 2	.28	.40	.58	.69	77	.85	.89	.99	1.03	1.04	1.04	1.04
Oct. 4	.24	.31	.31	.33	.37	.38	.38	.38	.38	.38	.38	.38
Oct 20	.43	.66	.90	1.03	1.26	1.55	2.29	2.47	2.50	2.81	2.97	3.06
Dec 23	.31	.45	.52	.57	.66	.75	.83	.93	1.02	1.05	1.08	1.25
West Palm Beach AP												
Apr. 25	.32	.40	.59	.69	.74	.78	.79	.80	.80	.81	.81	.81
May 9	.18	.22	.27	.35	.51	.60	.62	.63	.65	.65	.65	.65
May 19	.28	.40	.43	.45	.50	.51	.51	.51	.51	.51	.57	.60
July 11	.40	.75	.90	1.03	1.21	1.46	1.55	1.57	1.60	1.61	1.65	1.66
Aug 8	.40	.65	.90	1.17	1.59	1.90	1.97	1.99	1.99	1.99	1.99	1.99
Aug. 17	.28	.45	.55	.72	.85	1.13	1.30	1.60	1.77	1.78	2.27	2.68
Aug. 25	.26	.51	.64	.72	.78	.91	1.25	1.47	1.55	1.56	1.57	1.60
Aug. 27	.20	.31	.39	.44	.48	.51	.52	.52	.52	.52	.52	.52
Sept. 1	.13	.25	.36	.43	.49	.50	.55	.58	.58	.58	.58	.58
Sept. 8	.37	.68	.90	1.07	1.23	1.30	1.41	1.45	1.49	1.50	1.55	1.60
Sept. 8	.25	.45	.52	.63	.90	1.11	1.38	1.60	1.68	1.69	1.79	1.84
Sept. 9	.20	.30	.40	.47	.65	.74	.87	.96	1.07	1.23	1.29	1.34
Sept. 18	.23	.35	.36	.44	.46	.49	.52	.53	.53	.53	.53	.53
Sept. 18	.25	.46	.55	.58	.92	.94	.94	.94	.94	.94	.94	.94
Sept. 20	.30	.47	.60	85	1.11	1.18	1.19	1.19	1.19	1.19	1.19	1.19
Oct. 4	.28	.48	.55	.75	.94	1.03	1.05	1.06	1.07	1.09	1.10	1.10
GEORGIA												
Atlanta Airport												
Feb. 19-20	.26	.42	.45	.45	.47	.49	.53	.66	.66	.66	.82	.82
Apr. 15	.43	.50	.55	.58	.63	.72	.78	.88	1.21	1.26	1.27	1.27
May 6	.34	.38	.39	.39	.39	.39	.39	.39	.41	.51	.51	.51
June 22	.21	.36	.54	.59	.65	.65	.65	.65	.65	.65	.65	.65
July 8	.15	.30	.42	.51	.58	.62	.71	.71	.86	1.11	1.28	1.34
July 9	.47	.52	.53	.53	.53	.53	.53	.53	.53	.53	.53	.53
July 14	.34	.51	.52	.53	.54	.55	.56	.56	.56	.56	.56	.56
July 15	.36	.53	.58	.60	.61	.63	.63	.64	.68	.71	1.07	1.09
July 25	.27	.45	.55	.58	.62	.66	.66	.66	.66	.66	.66	.66
July 30	.43	.70	.75	.79	.81	.82	.82	.82	.82	.82	.82	.82
Oct. 21	.27	.32	.37	.42	.48	.51	.52	.52	.52	.52	.52	.52
Augusta Airport												
Feb. 27	.25	.38	.41	.43	.44	.45	.48	.49	.49	.51	.53	.72
Mar. 28	.16	.31	.35	.40	.61	.69	.74	.79	.85	.88	.89	.89
Apr. 29	.33	.35	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
June 24	.30	.46	.51	.51	.52	.52	.52	.53	.54	.55	.58	.60
June 30	.38	.63	.82	.93	1.27	1.51	1.56	1.57	1.58	1.58	1.58	1.58
July 15	.30	.44	.50	.62	.68	.70	.70	.70	.71	.71	.71	.71
Aug. 20	.16	.31	.39	.42	.44	.54	.56	.56	.56	.56	.57	.57
Aug. 21	.15	.30	.35	.38	.44	.50	.54	.55	.56	.57	.57	.57
Columbus Airport												
Feb. 3	.30	.60	.62	.64	.66	.68	.74	.76	.76	.76	.85	.85
Feb. 4	.30	.35	.40	.46	.51	.55	.59	.74	.78	.89	.93	.95
Feb. 16	.30	.39	.40	.44	.45	.45	.45	.45	.45	.45	.45	.45
Feb. 20	.15	.24	.28	.43	.46	.56	.56	.56	.56	.56	.56	.56
June 1	.25	.36	.41	.44	.45	.45	.45	.45	.45	.45	.45	.45
June 14	.27	.39	.41	.42	.42	.42	.45	.47	.47	.49	.50	.50
July 14	.27	.40	.50	.56	.58	.60	.68	.89	.90	.91	.97	1.04
July 27	.46	.57	.75	1.06	1.08	1.10	1.10	1.11	1.11	1.11	1.11	1.11
July 30	.30	.38	.44	.50	.65	.66	.66	.66	.66	.66	.66	.66
Sept. 6	.15	.25	.33	.41	.52	.55	.56	.60	.61	.61	.61	.62
Dec. 23	.53	.61	.71	.78	1.10	1.27	1.50	1.83	2.06	2.27	2.40	2.61
Macon Airport												
Feb 6	.29	.43	.51	.54	.56	.64	.69	.73	.77	.80	.83	.90
June 10	.35	.50	.75	.95	1.25	1.55	1.90	1.90	1.90	1.90	1.90	1.91
July 16	.28	.39	.44	.48	.49	.51	.51	.51	.51	.51	.51	.51
Aug. 18	.14	.24	.33	.48	.62	.66	.66	.66	.66	.66	.66	.66
Sept. 24	.35	.55	.76	.87	1.12	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Sept. 25	.26	.50	.56	.59	.66	.70	.71	.73	.84	.96	1.16	1.25
Dec. 14	.19	.35	.43	.45	.49	.53	.56	.56	.56	.56	.56	.56
Dec. 22	.24	.37	.50	.58	.88	1.14	1.29	1.50	1.74	1.85	2.02	2.15
Rome Airport												
Mar. 7	.28	.29	.30	.31	.31	.31	.31	.31	.31	.31	.31	.31
Apr. 4	.35	.36	.37	.39	.43	.46	.52	.61	.67	.70	.70	.70
Apr. 15	.30	.35	.40	.45	.65	.70	.83	1.08	1.13	1.18	1.23	1.24
May 1	.20	.30	.45	.47	.50	.52	.56	.64	.66	.68	1.03	1.09
June 19	.20	.30	.40	.55	.75	.82	.87	.89	.89	.89	.89	.89
July 2	.58	.86	.87	1.33	1.68	2.06	2.44	2.56	2.58	2.58	2.58	2.58
July 4	.30	.35	.45	.50	.54	.55	.55	.55	.55	.55	.55	.57
July 7	.30	.36	.40	.53	.55	.55	.64	.79	.90	.96	1.07	1.37
July 9	.20	.39	.64	.81	1.01	1.16	1.23	1.59	1.63	1.63	1.67	1.67
July 12	.25	.40	.49	.57	.62	.63	.64	.66	.66	.66	.66	.66
Dec. 22	.25	.26	.27	.30	.35	.39	.52	.61	.64	.64	.69	.70
Savannah Airport												
Feb. 5	.24	.46	.55	.61	.80	.90	.91	.93	1.02	1.04	1.05	1.05
Apr. 10	.23	.34	.39	.46	.61	.86	1.07	1.18	1.30	1.38	1.42	1.61
Apr. 16	.17	.26	.34	.36	.53	.64	.86	1.19	1.20	1.22	1.22	1.30
May 3	.20	.33	.41	.56	.64	.65	.74	.74	.75	.75	.75	.75
May 7	.43	.48	.52	.58	.60	.60	.60	.72	.74	.74	.74	.74
May 7	.19	.23	.35	.41	.47	.50	.50	.50	.50	.50	.50	.50
June 1	.44	.80	1.04	1.26	1.58	1.95	2.37	2.49	2.61	2.65	2.65	2.65
June 5	.28	.48	.55	.57	.63	.71	.72	.72	.72	.73	.73	.73
June 19	.20	.36	.47	.58	.78	1.01	1.17	1.23	1.27	1.28	1.30	1.34
June 22	.20	.39	.42	.56	.60	.63	.63	.63	.63	.64	.64	.64
June 28	.28	.55	.75	.90	.97	1.04	1.09	1.13	1.14	1.14	1.14	1.14
June 30	.18	.22	.30	.33	.53	.55	.56	.56	.56	.57	.58	.58

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* City Office data ending May 21
** Airport data beginning May 1

EXCESSIVE SHORT DURATION RAINFALL

Station and date	5	10	15	20	30	45	60	80	100	120	150	180
	Maximum precipitation in inches (5 to 180 minutes)											
GEORGIA (Cont'd.)												
Savannah AP (Cont'd.)												
July 1	*	*	*	*	*	1.38	1.57	1.66	1.69	1.69	1.69	1.69
July 19	0.35	0.55	0.75	0.90	1.25	1.84	2.15	2.31	2.41	2.43	2.45	2.48
Sept. 1	.24	.32	.39	.42	.43	.44	.44	.44	.44	.44	.44	.44
Sept. 7	.22	.28	.33	.40	.63	.75	.77	.79	.79	.79	.87	.88
Sept. 25	.45	.79	1.11	1.25	1.45	1.57	1.66	1.87	1.92	1.98	2.04	2.07
Oct. 21	.21	.35	.37	.37	.37	.37	.37	.37	.37	.39	.40	.41
IDAHO												
Boise Airport						None						
Pocatello Airport						None						
ILLINOIS												
Cairo												
Apr. 3	.37	.56	.63	.73	.88	.93	.93	.96	.96	.96	.97	.97
Apr. 15	.42	.58	.72	.78	.82	.87	.92	.96	.96	1.00	1.00	1.02
June 13	.17	.31	.39	.43	.52	.70	.78	.81	.82	.83	.83	.83
June 15	.31	.39	.40	.41	.41	.43	.43	.52	.69	.69	.69	.69
June 15	.14	.26	.37	.40	.42	.42	.45	.47	.48	.49	.51	.52
June 16	.32	.57	.64	.66	.70	.73	.73	.73	.73	.73	.73	.73
June 21	.29	.51	.55	.57	.57	.75	.75	.89	1.00	1.16	1.33	1.55
June 26	.19	.34	.42	.44	.44	.44	.46	.51	.51	.51	.51	.51
July 23	.29	.48	.62	.73	.78	.78	.78	.78	.78	.78	.84	.85
Sept. 1	.26	.41	.44	.45	.63	.67	.69	.74	.78	.80	.80	.80
Oct. 25	.20	.34	.41	.45	.51	.57	.61	.65	.76	.85	.88	.91
Nov. 20	.16	.32	.41	.46	.64	.78	.92	1.01	1.09	1.17	1.31	1.39
Nov. 20	.34	.38	.39	.40	.44	.47	.49	.61	.72	.75	.76	.79
Chicago Airport												
Apr. 3	.40	.49	.50	.51	.55	.58	.59	.59	.59	.59	.59	.59
July 13	.26	.41	.48	.50	.54	.57	.58	.58	.58	.58	.58	.58
Aug. 12	.35	.60	.80	.94	1.02	1.04	1.08	1.13	1.16	1.18	1.18	1.18
Aug. 29	.41	.67	.90	1.00	1.29	1.41	1.42	1.43	1.43	1.43	1.43	1.43
Moline Airport												
Apr. 27	.28	.32	.34	.36	.38	.60	.62	.62	.62	.62	.62	.62
May 29	.26	.40	.51	.54	.58	.59	.60	.61	.61	.61	.61	.61
June 19	.16	.31	.41	.47	.58	.60	.61	.64	.66	.68	.69	.70
June 21	.19	.32	.36	.39	.40	.40	.40	.40	.40	.40	.40	.40
July 7	.62	.72	.75	.76	.77	.79	.79	.98	1.18	1.32	1.40	1.82
July 31	.18	.36	.52	.56	.62	.64	.76	.90	.96	.98	1.00	1.00
Aug. 30	.20	.40	.53	.56	.57	.59	.59	.59	.59	.59	.59	.59
Peoria Airport												
Apr. 29	.26	.34	.37	.39	.49	.69	.81	1.08	1.23	1.34	1.52	1.67
May 27	.38	.46	.48	.49	.49	.49	.50	.50	.50	.50	.52	.53
May 28	.58	.98	1.10	1.18	1.54	1.97	2.16	2.48	2.62	2.81	2.94	3.09
July 8	.30	.44	.62	.72	.94	1.09	1.10	1.14	1.20	1.22	1.22	1.22
July 31	.16	.26	.41	.50	.60	.87	1.21	1.32	1.38	1.39	1.44	1.44
Aug. 13	.26	.34	.38	.40	.41	.42	.44	.44	.44	.46	.49	.55
Aug. 13	.24	.40	.53	.66	.96	1.30	1.45	1.55	1.59	1.71	1.76	1.80
Springfield AP												
Apr. 29	.26	.39	.50	.56	.70	.78	.84	.97	1.02	1.07	1.20	1.30
May 26	.17	.31	.36	.38	.44	.70	.83	.87	.88	.91	1.00	1.06
May 31	.30	.48	.55	.68	.77	.85	.85	.85	.85	.87	.87	.87
June 21	.33	.47	.57	.67	.69	.69	.69	.70	.70	.70	.70	.70
June 22	.30	.48	.62	.65	.75	.81	1.00	1.01	1.03	1.04	1.05	1.05
July 8	.27	.36	.52	.55	.59	.61	.63	.64	.64	.64	.64	.64
July 12	.23	.35	.49	.65	.80	.81	.81	.81	.81	.83	.86	.86
July 31	.25	.37	.45	.58	.90	1.12	1.14	1.14	1.28	1.69	1.74	1.82
INDIANA												
Evansville Airport												
Feb. 14	.23	.35	.44	.46	.50	.54	.59	.64	.74	.79	.87	.89
Feb. 25	.26	.41	.48	.50	.61	.68	.75	.78	.78	.78	.83	.91
June 18	.30	.45	.47	.49	.49	.49	.49	.49	.49	.49	.49	.49
June 22	.23	.43	.51	.52	.53	.54	.55	.56	.59	.60	.84	.90
July 4	.25	.30	.36	.37	.37	.37	.37	.37	.37	.37	.37	.37
July 19	.32	.37	.40	.42	.43	.45	.45	.45	.45	.45	.45	.45
Aug. 14	.23	.32	.40	.52	.60	.76	.82	.83	1.35	1.40	1.43	1.44
Sept. 15	.25	.35	.38	.43	.46	.48	.49	.50	.55	.80	.96	.96
Fort Wayne Airport												
Feb. 24	.45	.57	.80	.95	1.02	1.14	1.16	1.17	1.25	1.33	1.38	1.41
May 30	.37	.43	.45	.47	.63	.72	.74	.95	1.03	1.27	1.35	1.37
June 18	.27	.37	.39	.41	.43	.45	.48	.52	.59	.65	.67	.72
June 26	.26	.44	.49	.51	.51	.51	.51	.51	.51	.51	.51	.51
July 27	.32	.52	.53	.54	.54	.54	.55	.63	.76	.76	.76	.76
Aug. 13	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
Sept. 1	.25	.31	.45	.47	.48	.48	.48	.48	.48	.48	.48	.48
Indianapolis AP												
Feb. 24	.34	.53	.61	.67	.67	.68	.68	.68	.68	.68	.68	.68
Apr. 2	.28	.36	.40	.45	.49	.57	.84	.89	.91	1.05	1.11	1.22
Apr. 2	.28	.39	.44	.47	.51	.62	.79	.81	.87	.91	.92	.92
Apr. 28	.26	.39	.44	.46	.50	.51	.51	.57	.58	.58	.58	.58
June 18	.33	.42	.42	.47	.50	.50	.69	.74	.74	.74	.74	.76
June 22	.28	.48	.66	.70	.86	.88	.88	.88	.88	.89	1.37	1.51
July 5	.34	.54	.59	.64	.66	.67	.67	.67	.68	.69	.83	.84
Aug. 13	.44	.64	.72	.78	.83	.89	.91	.91	.91	.91	.92	.93
South Bend AP												
Apr. 2	.25	.32	.42	.43	.47	.53	.53	.59	.60	.60	.60	.60
May 11	.18	.33	.38	.45	.48	.49	.49	.49	.49	.49	.49	.49
June 26	.25	.35	.37	.37	.38	.38	.38	.38	.38	.38	.38	.38
Aug. 12	.40	.54	.70	.86	1.25	1.67	1.83	1.87	1.92	2.01	2.05	2.05
Aug. 31	.28	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
IOWA												
Burlington Airport												
Mar. 27	.59	1.04	1.27	1.41	1.50	1.56	1.58	1.59	1.59	1.59	1.59	1.59
May 27	.15	.30	.37	.38	.39	.40	.41	.42	.42	.42	.42	.42
May 29	.33	.55	.76	.79	.80	.80	.80	.82	.83	.85	.86	.86
June 19	.27	.36	.45	.49	.57	.58	.59	.59	.59	.59	.60	.60
July 4	.16	.26	.35	.40	.56	.61	.63	.63	.64	.65	.74	.74
July 17	.23	.33	.40	.40	.40	.40	.41	.41	.41	.41	.41	.41
Aug. 13	.22	.37	.58	.63	.69	.81	.93	1.02	1.09	1.25	1.45	1.94
Aug. 30	.30	.45	.50	.54	.58	.63	.67	.69	.79	.85	.85	.85

* Triple register inoperative

Station and date	5	10	15	20	30	45	60	80	100	120	150	180
	Maximum precipitation in inches (5 to 180 minutes)											
IOWA (Cont'd.)												
Davenport												
Apr. 3	0.25	0.28	0.28	0.28	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
May 27	.20	.33	.38	.40	.50	.52	.55	.59	.60	.60	.61	.62
May 29	.25	.38	.52	.57	.75	.80	.81	.82	.82	.82	.82	.82
July 7	.45	.63	.70	.73	.77	.77	.86	.86	.88	.98	1.01	1.07
July 7	.35	.40	.43	.46	.47	.48	.54	.62	.65	.75	.77	.85
July 31	.12	.17	.26	.33	.48	.58	.88	1.15	1.25	1.27	1.30	1.33
Aug. 29	.25	.30	.31	.33	.33	.33	.33	.33	.33	.33	.33	.33
Des Moines Airport												
July 7	.20	.33	.34	.34	.35	.36	.36	.37	.37	.38	.42	.60
Aug. 8	.23	.35	.40	.43	.48	.54	.63	.64	.64	.64	.65	.66
Aug. 16	.23	.32	.35	.37	.42	.44	.46	.52	.56	.58	.63	.68
Dubuque Airport												
May 29	.26	.37	.44	.49	.55	.57	.59	.59	.59	.59	.59	.59
June 29	.18	.35	.40	.47	.60	.69	.70	.71	.71	.71	.71	.71
July 7	.20	.25	.36	.43	.50	.67	.75	.80	.81	.82	.85	.86
July 31	.15	.29	.42	.44	.50	.55	.58	.61	.66	.72	.78	.85
Aug. 30	.27	.52	.55	.56	.60	.62	.62	.79	.87	.87	1.13	1.27
Sioux City AP												
May 10	.24	.30	.35	.38	.52	.70	.74	.75	.75	.76	.76	.76
June 22	.26	.37	.42	.43	.45	.47	.48	.48	.48	.48	.48	.48
June 25-26	.32	.42	.45	.51	.61	.64	.66	.67	.72	.90	1.24	1.38
July 11	.48	.70	.78	.85	1.17	1.23	1.28	1.31	1.31	1.83	2.44	2.48
July 13-14	.18	.33	.37	.42	.47	.53	.56	.58	.63	.71	.78	.79
July 19	.32	.36	.37	.38	.39	.39	.39	.39	.39	.39	.39	.39
KANSAS												
Concordia												
May 30	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.45	.45
June 6	.45	.60	.65	.67	.69	.69	.69	.69	.69	.69	.69	.69
June 23	.30	.52	.61	.69	.80	.85	.87	.88	.89	.89	.90	.90
Dodge City AP												
June 5	.29	.34	.37	.37	.37	.37	.37	.37	.37	.42	.45	.45
July 6	.12	.21	.28	.40	.47	.50	.50	.52	.52	.52	.52	.52
Oct. 29	.26	.50	.60	.63	.79	.88	.94	.96	.96	.96	.96	.96
Goodland Airport												
May 26	.25	.27	.28	.29	.30	.31	.32	.32	.33	.33	.33	.33
June 23	.25	.31	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
Aug. 17	.25	.35	.46	.46	.46	.46	.46	.46	.46	.61	.76	.76
Topeka Airport												
Apr. 2	.20	.39	.59	.73	.98	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Apr. 28	.41	.78	.90	.92	.98	1.10	1.15	1.27	1.32	1.41	1.48	1.50
May 6	.16	.31	.43	.58	.72	.73	.74	.74	.76	.82	.89	.97
July 12	.11	.21	.31	.40	.56	.75	.89	.99	1.05	1.09	1.10	1.10
July 13	.20	.36	.44	.54	.62	.67	.73	.77	.83	.87	.95	1.02
Sept. 5	.18	.33	.40	.52	.67	.72	.75	.80	.83	.87	.96	.98
Wichita Airport												
Apr. 2	.54	.56	.58	.59	.59	1.05	1.05	1.05	1.05	1.05	1.05	1.05
KENTUCKY												
Lexington Airport												
Apr. 7	.30	.50	.59	.62	.63	.64	.66	.67	.67	.67	.67	.67
May 29	.23	.40	.52	.67	.69	.70	.70	.70	.70	.70	.70	.70
June 13	.47	.87	1.03	1.22	1.41	1.45	1.46	1.46	1.46	1.46	1.46	1.46
June 20	.25	.35	.35	.50	.52	.52	.52	.70	.80	.80	.80	.85
June 21	.23	.40	.50	.52	.53	.53	.54	.55	.55	.55	.55	.55
June 22	.25	.43	.46	.48	.56	.59	.59	.66	.77	.82	.88	.90
June 24	.35	.55	.62	.63	.64	.65	.65	.66	.67	.69	.74	.80
July 8	.23	.32	.40	.45	.48	.49	.49	.63	.64	.68	.70	.70
July 13	.28	.35	.36	.36	.37	.44	.46	.47	.50	.50	.50	.66
July 28	.20	.31	.37	.41	.51	.53	.54	.58	.61	.65	.68	.69
July 29	.25	.37	.45	.47	.47	.47	.47	.47	.47	.47	.47	.47
Aug. 14	.33	.42	.46	.47	.51	.52	.53	.58	.64	.69	.75	.81
Sept. 14	.28	.30	.30	.30	.30	.30	.30	.30	.31	.31	.31	.31
Sept. 15	.32	.36	.40	.43	.45	.50	.55	.55	.55	.55	.55	.55
Louisville Airport												
Feb. 25	.25	.42	.45	.46	.46	.46	.50	.55	.67	.68	.68	.70
Feb. 27	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
Mar. 7	.22	.28	.35	.50	.63	.65	.75	.96	1.03	1.12	1.23	1.30
May 2	.20	.32	.35	.40	.56	.68	.86	1.00	1.05	1.08	1.12	1.15
June 19	.20	.30	.37	.45	.45	.45	.45	.45	.45	.45	.47	.50
June 22	.30	.40	.44	.46	.49	.60	.65	.65	.65	.65	.66	.66
June 24	.25	.39	.40	.40	.42	.43	.43	.45	.46	.51	.55	.55
Aug. 1	.25	.45	.75	.90	1.00	1.05	1.06	1.07	1.08	1.08	1.08	1.08
Aug. 14	.13	.25	.35	.46	.57	.65	.71	.75	.80	.86	.91	1.05
Sept. 5	.30	.45	.65	.72	.82	.85	.86	.86	.86	.86	.86	.86
LOUISIANA												
Lake Charles												
Mar. 3	.30	.40	.44	.48	.49	.51	.55	.62	.71	.79	.87	1.13
Mar. 11	.25	.40	.50	.70	.72	.83	1.01	1.32	1.60	1.63	1.67	1.67
Mar. 15	.25	.38	.48	.56	.66	.77	.95	1.11	1.20	1.26	1.28	1.30
May 2	.30	.50	.60	.70	.85	1.07	1.20	1.23	1.25	1.26	1.29	1.30
May 2	.28	.48	.63	.70	.75	.75	.76	.77	.77	.79	.79	.79
May 30	.37	.70	1.00	1.20	1.50	1.55	1.57	1.58	1.58	1.58	1.60	1.60
Aug. 1	.26	.39	.41	.43	.45	.45	.49	.50	.50	.50	.50	.50
Aug. 27	.33	.50	.53	.63	.68	.70	.71	.72	.74	.75	.75	.76
Aug. 28	.28	.32	.33	.46	.48	.53	.55	.60	.65	.65	.65	.65
Dec. 13	.23	.38	.41	.50	.61	.90	1.10	1.28	1.53	1.59	1.83	2.07
Dec. 22	.27	.42	.45	.61	.67	.77	.86	.87	.93	1.13	1.17	1.20
Dec. 22	.35	.70	1.00	1.22	1.45	1.54	1.59	1.74	1.78	1.78	1.78	1.78
New Orleans												
Jan. 22	.18	.27	.37	.45	.49	.52	.57	.65	.70	.74	.74	.74
Feb. 8	.27	.42	.51	.58	.62	.75	.79	.81	.92	.98	1.05	1.09
Feb. 15	.54	1.00	1.39	1.72	2.43	3.10	3.41	3.47	3.52	3.54	3.73	4.17
Mar. 11	.30	.35	.36	.37	.42	.43	.44	.46	.47	.49	.50	.50
Mar. 16	.31	.43	.51	.56	.60	.60	.60	.61	.61	.61	.61	.61
Mar. 29	.24	.31	.34	.36	.41	.45	.46	.47	.49	.50	.50	.50
Apr. 9	.43	.76	.98	1.07	1.31	1.38	1.40	1.47	1.51	1.64	1.79	1.83
Apr. 10*	----	----	----	----	----	.75	.75	.75	.75	.75	.75	.75
May 2	.13	.22	.29	.39	.51	.66	.82	.91	1.08	1.10	1.12	1.12
May 5	.22	.30	.31	.31	.31	.31	.31	.36	.39	.40	.40	.40

* Excessive during first 30 minutes, but not recorded.

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
LOUISIANA (Cont'd.)												
New Orleans (Cont'd.)												
May 23	0.24	0.42	0.59	0.73	0.83	0.86	0.87	0.87	0.87	0.87	0.87	0.87
May 26	.38	.64	.87	1.14	1.47	1.78	1.91	2.10	2.16	2.16	2.21	2.21
June 13	.14	.23	.30	.36	.51	.58	.77	.99	1.22	1.38	1.71	1.98
June 14	.18	.29	.36	.36	.36	.36	.36	.36	.40	.41	.41	.41
June 15	.32	.53	.63	.77	1.06	1.20	1.29	1.29	1.29	1.29	1.53	1.69
June 15	.36	.50	.55	.56	.57	.60	.65	.80	.80	.91	.92	.92
June 17	.26	.43	.54	.58	.75	.79	.82	.82	.82	.82	.82	.82
June 18	.24	.42	.54	.69	.84	.87	.93	1.03	1.11	1.14	1.15	1.19
June 27	.33	.56	.79	.98	1.11	1.15	1.15	1.16	1.16	1.16	1.16	1.16
July 4	.22	.33	.46	.53	.61	.68	.68	.70	.70	.70	.70	.70
July 7*	----	----	----	----	----	1.63	1.65	1.66	1.66	1.66	1.96	2.08
July 9	.20	.30	.32	.38	.43	.51	.57	.60	.70	.73	.80	.81
July 10	.38	.69	.91	1.02	1.12	1.20	1.21	1.23	1.26	1.28	1.30	1.30
July 29	.32	.51	.61	.75	.86	.90	.92	.92	.93	.93	.94	.96
July 31	.21	.38	.45	.52	.57	.58	.59	.59	.60	.60	.61	.61
Aug. 4	.30	.44	.46	.50	.53	.55	.55	.56	.60	.62	.63	.63
Aug. 19	.31	.55	.67	.68	.68	.68	.68	.68	.69	.71	.71	.72
Sept. 24	.20	.30	.44	.48	.63	.79	.95	1.20	1.37	1.55	2.01	2.36
Nov. 7	.51	.61	.62	.69	.95	1.16	1.25	1.50	1.55	1.55	1.56	1.56
Dec. 13	.31	.37	.46	.52	.59	.71	.71	.72	.72	.72	.96	1.08
Dec. 19	.35	.64	.72	.80	1.10	1.33	1.43	1.69	2.00	2.03	2.09	2.09
Dec. 22	.20	.36	.51	.57	.72	.78	.79	.87	.88	.90	.90	.90
MAINE												
Caribou Airport												
June 15	.28	.54	.66	.81	.84	.85	.85	.85	.85	.85	.85	1.11
Portland Airport												
Nov. 21	.23	.30	.32	.32	.36	.40	.42	.43	.51	.55	.62	.67
MARYLAND												
Baltimore												
June 16	.29	.42	.48	.51	.51	.51	.51	.51	.51	.51	.51	.51
July 4	.12	.23	.37	.41	.45	.50	.54	.55	.55	.56	.56	.58
July 20	.19	.30	.40	.49	.74	1.01	1.20	1.49	1.90	2.07	2.59	2.94
Aug. 5	.16	.32	.35	.39	.43	.45	.46	.50	.50	.50	.50	.51
Oct. 22-23**	----	----	----	----	----	----	----	----	----	----	----	----
Baltimore Airport												
May 31	.23	.41	.44	.45	.45	.46	.46	.46	.46	.46	.46	.46
July 9	.23	.40	.42	.43	.43	.43	.43	.43	.43	.43	.43	.43
July 20	.24	.46	.60	.79	.92	1.18	1.39	1.68	1.93	2.27	2.62	2.81
Sept. 6	.19	.37	.41	.41	.42	.42	.42	.42	.43	.44	.44	.44
Oct. 22	.17	.22	.29	.32	.51	.71	.88	.95	1.07	1.16	1.38	1.47
Frederick Airport												
May 31	.20	.37	.40	.43	.50	.55	.75	.82	.82	.82	.82	.82
June 23	.35	.60	.85	.95	1.27	1.30	1.30	1.68	1.70	1.70	1.70	1.70
July 5	.20	.35	.38	.53	.62	.67	.70	.77	.82	.82	.82	.82
July 21	.50	.62	.68	.75	.93	1.10	1.28	1.32	1.32	1.32	1.32	1.32
July 27	.25	.30	.40	.43	.43	.43	.43	.43	.43	.43	.43	.43
Sept. 6	.50	.65	.70	.70	.70	.70	.70	.70	.70	.70	.70	.70
Nov. 1	.33	.40	.48	.52	.70	.85	.87	.91	.92	.93	.95	.95
MASSACHUSETTS												
East Boston AP												
June 13	.50	.80	.90	.93	.95	1.02	1.07	1.08	1.09	1.10	1.11	1.11
Aug. 10	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36
Sept. 6	.21	.30	.36	.40	.47	.61	.68	.72	.95	1.13	1.23	1.28
Sept. 7	.17	.27	.35	.42	.52	.54	.59	.64	.68	.72	.77	.82
Sept. 24	.25	.43	.48	.50	.53	.57	.65	.66	.67	.67	.69	.70
Oct. 23	.15	.30	.40	.50	.65	.84	.98	1.06	1.15	1.20	1.25	1.44
Nantucket Airport												
June 3	.25	.41	.50	.56	.57	.57	.60	.60	.60	.61	.61	.61
Aug. 7	.14	.25	.35	.46	.54	.71	.80	.89	1.00	1.02	1.17	1.31
Aug. 12	.14	.26	.34	.42	.48	.51	.57	.59	.72	.85	.96	.96
Oct. 7	.22	.38	.51	.56	.63	.69	.75	.79	.79	.80	.83	.83
Pittsfield Airport												
May 31	.25	.48	.55	.55	.55	.55	.55	.55	.55	.55	.55	.55
July 25	.50	.62	.62	.62	.75	1.05	1.17	1.20	1.22	1.22	1.22	1.22
Sept. 1	.17	.32	.33	.33	.34	.34	.35	.35	.35	.35	.35	.35
Sept. 2	.25	.45	.60	.77	.78	.79	.81	.96	1.00	1.11	1.32	1.32
MICHIGAN												
Alpena												
July 21	.23	.41	.42	.56	.62	.64	.64	.66	.67	.67	.67	.71
Aug. 9	.27	.42	.48	.50	.50	.50	.50	.50	.50	.50	.50	.50
Detroit Airport												
May 9	.21	.31	.31	.36	.39	.49	.49	.52	.63	.67	.76	.81
May 12	.27	.36	.43	.48	.48	.48	.48	.49	.53	.55	.61	.61
Aug. 4	.28	.54	.75	1.02	1.37	1.68	1.78	1.78	1.78	1.78	1.78	1.78
Oct. 6	.26	.30	.31	.31	.31	.31	.31	.31	.31	.32	.32	.33
Nov. 1	.23	.46	.58	.69	.76	.79	.93	1.17	1.18	1.19	1.20	1.21
Detroit (Willow Run Airport)												
May 22	.21	.36	.50	.58	.65	.68	.75	.80	.80	.80	.80	.80
May 30	.40	.62	.66	.67	.67	.80	.80	.80	.80	.80	.80	.80
June 17	.31	.34	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36
June 17	.50	.95	1.20	1.40	1.68	1.75	1.75	1.75	1.75	1.75	1.75	1.75
June 18	.22	.35	.42	.47	.54	.57	.62	.63	.63	.63	.76	.92
July 15	.41	.66	.76	.76	.76	.76	.76	.76	.76	.76	.76	.76
Aug. 4	.35	.55	.62	.70	.80	.81	.82	.83	.91	1.03	1.20	1.35
Aug. 5	.41	.62	.64	.65	.77	.77	.79	.80	.80	.80	.80	.80
East Lansing												
May 12-13	.21	.28	.38	.48	.58	.62	.63	.73	.77	.80	.82	.84
July 25	.18	.30	.33	.35	.39	.44	.49	.50	.53	.56	.57	.77
Aug. 4	.25	.30	.40	.45	.59	.66	.69	.70	.72	.75	.76	.76
Aug. 7	.15	.30	.33	.36	.39	.39	.39	.39	.39	.39	.39	.39
Escanaba												
Apr. 3	.25	.30	.53	.54	.59	.60	.60	.60	.60	.60	.60	.60
June 13	.25	.45	.65	.67	.70	.70	.70	.70	.70	.70	1.20	1.27
July 13	.40	.50	.60	.63	.67	.67	.67	.67	.67	.67	.67	.67
Grand Rapids AP												
Apr. 27	.18	.30	.39	.49	.61	.63	.79	.94	.98	1.01	1.16	1.24
MICHIGAN (Cont'd.)												
Grand Rapids AP (Cont'd.)												
May 9	0.23	0.35	0.45	0.62	0.80	0.91	1.06	1.18	1.30	1.53	1.65	1.77
May 9	.22	.35	.47	.60	.64	.67	.80	.84	.91	.92	.99	1.49
June 15	.21	.35	.47	.52	.54	.54	.54	.54	.54	.54	.54	.54
June 17	.23	.30	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36
June 17	.22	.39	.59	.70	.85	1.10	1.10	1.12	1.34	1.55	1.60	1.60
July 1	.15	.30	.38	.38	.38	.38	.38	.39	.39	.39	.40	.40
Marquette												
June 30	.32	.34	.37	.38	.39	.43	.44	.44	.44	.44	.44	.44
July 8	.30	.48	.51	.53	.60	.61	.62	.64	.65	.74	.87	.98
Muskegon Airport												
May 30	.25	.39	.41	.41	.44	.46	.46	.46	.46	.46	.46	.46
June 17	.35	.65	.70	.77	.79	.81	.81	.82	.83	.83	.83	.83
July 12	.20	.32	.38	.40	.42	.44	.49	.57	.59	.59	.59	.60
Aug. 5	.25	.40	.44	.48	.49	.49	.59	.64	.64	.65	.66	.68
Aug. 30	.20	.30	.40	.45	.53	.57	.77	.84	.85	.86	.87	.88
Sault Ste. Marie AP												
May 13	.20	.38	.47	.55	.73	.96	1.05	1.10	1.14	1.16	1.19	1.20
June 20	.25	.34	.35	.38	.40	.41	.41	.41	.41	.41	.41	.41
June 30	.20	.35	.45	.55	.63	.68	.83	.86	.87	1.00	1.38	1.46
July 13	.20	.30	.36	.39	.43	.50	.58	.67	.76	.82	.92	1.02
July 20	.22	.34	.43	.47	.51	.56	.63	.66	.69	.79	.91	.95
MINNESOTA												
Duluth Airport												
Aug. 7	.29	.44	.54	.57	.61	.63	.66	.66	.66	.66	.66	.66
Aug. 8	.17	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Aug. 12	.35	.64	.88	.95	.98	.99	.99	1.03	1.12	1.12	1.12	1.12
International Falls AP												
July 23	.29	.39	.44	.48	.50	.50	.50	.50	.50	.50	.50	.50
July 26	.26	.30	.31	.32	.33	.34	.35	.37	.37	.37	.57	.65
Minneapolis AP												
May 30	.20	.35	.36	.38	.39	.40	.41	.41	.41	.41	.41	.41
June 25	.20	.30	.36	.39	.47	.51	.53	.54	.74	.91	.96	.98
July 17	.19	.30	.49	.50	.58	.59	.59	.59	.59	.59	.59	.59
July 18	.24	.44	.58	.70	.86	1.06	1.14	1.16	1.17	1.17	1.18	1.26
Aug. 2	.12	.21	.32	.40	.56	.76	.93	1.01	1.09	1.12	1.14	1.19
Oct. 13	.18	.33	.43	.51	.58	.65	.80	.95	.96	.98	.98	.98
Rochester Airport												
May 29	.20	.32	.46	.62	.78	.92	1.07	1.34	1.39	1.42	1.44	1.46
Aug. 29	.50	1.00	1.32	1.54	2.09	2.19	2.26	2.31	2.36	2.39	2.39	2.39
Oct. 13	.40	.52	.70	.90	1.06	1.31	1.36	1.39	1.42	1.48	1.56	1.68
St. Cloud AP												
June 21-22	.87	1.22	1.72	1.88	2.18	2.28	2.32	2.37	2.42	2.53	2.62	2.63
June 30	1.05	1.27	1.32	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
July 5	.30	.51	.71	.81	.82	.82	.82	.82	.82	.82	.82	.82
July 18	.20	.37	.44	.57	.69	.77	.81	.88	.95	.99	1.10	1.16
Aug. 3	.23	.35	.39	.42	.51	.62	.70	.77	.82	1.05	1.22	1.27
Aug. 3	.20	.30	.41	.53	.65	.77	.98	1.08	1.14	1.18	1.33	1.55
Aug. 3	.60	1.05	1.38	1.57	1.75	1.85	1.88	1.98	2.00	2.05	2.12	2.12
Aug. 8	.18	.35	.47	.50	.57	.64	.70	.80	.88	.94	1.00	1.03
MISSISSIPPI												
Jackson Airport												
Jan 30	.23	.40	.47	.53	.55	.56	.56	.56	.56	.56	.56	.56
Feb. 2	.23	.34	.38	.38	.38	.39	.40	.53	.54	.54	.55	.55
Mar. 13	.22	.39	.44	.48	.52	.90	1.02	1.08	1.10	1.13	1.15	1.18
Apr. 5	.30	.51	.74	.90	.94	.95	.98	1.00	1.01	1.01	1.01	1.01
May 2	.23	.33	.49	.50	.50	.50	.54	.55	.55	.55	.56	.60
May 6	.14	.23	.32	.42	.53	.60	.60	.60	.60	.60	.60	.60
May 15	.16	.24	.35	.44	.55	.57	.57	.57	.57	.62	.67	.67
May 21	.23	.41	.42	.43	.45	.47	.48	.48	.49	.49	.50	.51
June 13	.18	.25	.35	.41	.56	.70	.87	1.05	1.15	1.23	1.32	1.34
June 15	.31	.48	.50	.51	.62	.87	.92	.93	.94	.94	.94	.94
June 16	.31	.37	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39
June 18	.39	.65	.94	1.20	1.75	2.09	2.19	2.23	2.26	2.26	2.34	2.37
July 25	.25	.37	.55	.72	.95	1.17	1.18	1.21	1.22	1.22	1.22	1.22
Aug. 28	.25	.25	.30	.43	.48	.67	.70	.70	.94	.95	.95	.95
Aug. 29	.24	.39	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40
Oct. 20	.25	.37	.40	.41	.60	.77	.95	.96	.96	.96	.96	.96
Dec. 13	.21	.34	.42	.44	.46	.48	.51	.54	.56	.59	.64	.66
Dec. 21	.16	.26	.34	.44	.49	.52	.56	.69	.76	.76	.77	.79
Meridian Airport												
Feb. 16	.22	.31	.35	.40	.85	.95	.97	.98	.98	.98	.98	.98
Mar. 11	.34	.43	.46	.48	.50	.50	.50	.50	.53	.61	.69	.72
Apr. 5	.46	.57	.59	.61	.62	.65	.95	.99	1.00	1.02	1.05	1.10
Apr. 15	.22	.42	.45	.46	.46	.46	.46	.46	.46	.46	.47	.47
June 14	.23	.35	.50	.55	.62	.67	.70	.70	.70	.70	.70	.72
June 19	.44	.70	.99	1.17	1.28	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Sept. 6	.25	.44	.54	.70	.90	1.13	1.17	1.23	1.38	1.45	1.52	1.60
Vicksburg												
Feb. 3	.29	.45	.54	.65	.81	.93	1.01	1.13	1.26	1.35	1.53	1.63
Feb. 8	.25	.37	.49	.63	.75	.83	.87	.98	1.05	1.09	1.14	1.27
Apr. 5	.66	.72	.73	.74	.77	.84	.91	.93	.94	.94	.95	.99
May 28	.42	.79	1.07	1.30	1.48	1.50	1.51	1.51	1.51	1.53	1.53	1.53
June 13	.27	.38	.46	.49	.52	.57	.62	.68	.74	.85	.96	1.05
June 15	.22	.35	.43	.43	.43	.44	.44	.45	.45	.45	.45	.45
July 31	.17	.30	.35	.37	.38	.39	.40	.48	.49	.49	.49	.49
Aug. 26	.33	.51	.58	.62	.63	.63	.63	.64	.83	.94	.94	.94
Oct. 1	.35	.55	.63	.66	.66	.67	.69	.71	.74	.76	.76	.76
Oct. 20	.20	.32	.37	.38	.39	.41	.46	.48	.48	.48	.48	.48
Dec. 11	.19	.31	.39	.45	.52	.65	.70	.70	.72	.79	.80	.97
MISSOURI												
Kansas City AP												
Apr. 28	.52	.58	.62	.64	.64	.91	.98	1.03	1.07	1.10	1.29	1.38
May 7	.23	.35	.45	.57	.83	1.18	1.43	1.47	1.50	1.50	1.51	1.64
May 26	.28	.55	.59	.60	.61	.61	.61	.61	.61	.61	.61	.61
June 17	.19	.37	.42	.44	.45	.46	.47	.50	.52	.55	.58	.59
June 18	.13	.22	.35	.38	.42	.53	.55	.55	.59	.60	.61	.63
July 15	.27	.31	.34	.36	.39	.39	.39	.39	.39	.39	.39	.39
July 18	.23	.38	.58	.68	.80	.82	.83	.83	.83	.83	.83	.83
Aug. 1	.28	.56	.75	.92	.97	1.03	1.07	1.07	1.07	1.07	1.07	1.07
Dec. 4	.32	.43	.46	.47	.50	.54	.55	.55	.55	.55	.55	.55

* Excessive during first 30 minutes, but not recorded.
** Rain gage inoperative - excessive probably occurred.

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
MISSOURI (Cont'd.)												
St. Joseph												
Apr. 27-28	0.28	0.40	0.50	0.58	0.62	0.65	0.69	0.74	0.82	0.85	0.92	0.96
May 28	.14	.27	.38	.41	.41	.42	.47	.47	.47	.47	.47	.47
May 29	.20	.32	.47	.69	.91	1.03	1.07	1.40	1.42	1.43	1.43	1.43
June 6-7	.27	.39	.46	.50	.62	.71	.80	.90	.91	.92	.95	.96
June 18	.30	.45	.55	.65	.70	.70	.72	.89	1.00	1.19	1.21	1.21
June 30	.13	.26	.34	.44	.52	.54	.59	.64	.68	.68	.68	.68
July 3	.22	.38	.40	.41	.42	.43	.43	.43	.43	.43	.43	.43
July 18-19	.20	.40	.48	.55	.56	.58	.58	.58	.58	.58	.58	.58
Aug. 1	.36	.71	.78	.83	.89	.98	1.01	1.01	1.01	1.02	1.05	1.10
St. Louis												
Feb. 25	.29	.45	.49	.52	.55	.65	.68	.76	.76	.76	.76	.76
May 30	.25	.39	.44	.51	.61	.70	.79	.85	1.01	1.06	1.09	1.10
June 19	.19	.37	.55	.63	.82	1.00	1.08	1.15	1.22	1.24	1.33	1.41
July 3	.18	.32	.35	.45	.57	.59	.59	.59	.59	.59	.59	.59
July 4	.22	.43	.59	.67	.75	.84	.97	.97	1.00	1.02	1.05	1.07
July 16	.17	.33	.45	.57	.82	1.10	1.23	1.26	1.43	1.48	1.52	1.57
July 29	.18	.35	.53	.59	.72	.80	.93	1.00	1.07	1.16	1.28	1.31
Sept. 15	.25	.29	.30	.33	.48	.62	.72	.73	.73	.73	.74	.74
Springfield												
May 31	.33	.63	.84	.90	1.09	1.22	1.25	1.30	1.31	1.33	1.36	1.44
June 7	.18	.25	.33	.43	.46	.48	.51	.51	.52	.53	.53	.53
June 22	.20	.36	.40	.45	.64	.75	.79	.81	.90	.96	1.00	1.02
Oct. 3	.20	.33	.50	.61	.67	.70	.72	.74	.74	.74	.74	.74
Oct. 25	.23	.31	.37	.41	.45	.51	.52	.55	.55	.55	.55	.55
MONTANA												
Billings Airport												
July 6	.26	.50	.53	.54	.54	.54	.54	.54	.54	.54	.55	.56
Great Falls Airport												
July 11	.16	.29	.35	.39	.42	.46	.49	.49	.51	.56	.56	.56
Havre												
June 15	.30	.46	.64	.72	.78	.83	.88	.91	.92	.92	.93	.93
July 4	.14	.24	.34	.41	.60	.70	.78	.84	.86	.86	.86	.86
Helena Airport						None						
Kalispell Airport						None						
Missoula Airport												
June 1	.22	.42	.48	.50	.53	.56	.61	.68	.69	.69	.69	.69
NEBRASKA												
Grand Island AP												
May 29	.20	.29	.47	.52	.65	.67	.74	.79	.79	.79	.79	.79
June 6	.25	.40	.52	.61	.80	.98	1.03	1.05	1.05	1.05	1.05	1.05
June 26	.21	.38	.49	.61	.79	1.03	1.17	1.21	1.27	1.29	1.33	1.36
Lincoln												
May 26	.34	.53	.61	.65	.72	.82	.85	.85	.87	.87	.87	.87
May 29	.21	.32	.38	.40	.42	.43	.45	.49	.50	.51	.61	.72
June 6	.19	.36	.51	.58	.63	.65	.66	.66	.66	.66	.66	.67
June 27	.32	.46	.54	.55	.61	.78	.82	.86	.90	.97	.98	.98
July 15	.31	.52	.64	.74	.86	1.00	1.09	1.11	1.11	1.11	1.11	1.11
July 18	.25	.43	.51	.56	.56	.56	.56	.56	.56	.56	.56	.56
July 31	.24	.45	.58	.73	1.03	1.08	1.09	1.09	1.09	1.09	1.09	1.09
Aug. 8	.26	.38	.41	.44	.45	.46	.46	.46	.46	.47	.49	.49
Aug. 18	.37	.71	.98	1.17	1.46	1.67	1.72	1.78	1.79	2.26	2.28	2.30
Sept. 5	.18	.33	.41	.53	.81	1.06	1.36	1.70	1.89	1.96	2.17	2.23
Norfolk Airport												
May 29	.20	.34	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
June 5	.40	.65	.95	1.00	1.12	1.13	1.14	1.14	1.14	1.14	1.14	1.14
June 26	.30	.50	.74	.82	.92	.95	1.00	1.02	1.06	1.14	1.26	1.33
June 29	.16	.31	.36	.38	.39	.40	.40	.40	.40	.40	.40	.40
July 4	.35	.60	.80	1.10	1.25	1.30	1.35	1.37	1.40	1.40	1.44	1.44
July 11	.65	.85	.95	1.01	1.10	1.11	1.11	1.11	1.11	1.11	1.11	1.11
Aug. 16	.20	.32	.35	.50	.54	.77	.90	.92	.94	.95	.96	.98
North Platte AP												
June 5	.32	.41	.51	.56	.64	.66	.67	.68	.68	.68	.68	.68
June 16	.32	.58	.79	1.02	1.10	1.45	1.60	1.77	1.83	1.89	2.05	2.08
June 18	.28	.51	.68	.85	1.06	1.15	1.18	1.25	1.29	1.30	1.31	1.31
July 17	.19	.35	.45	.49	.59	.61	.66	.68	.80	.85	.85	.85
Aug. 1	.24	.31	.31	.32	.32	.32	.32	.33	.34	.34	.34	.34
Oct. 29	.28	.40	.49	.65	.92	.92	.92	1.01	1.13	1.25	1.27	1.27
Omaha Airport												
Apr. 2	.25	.31	.35	.38	.45	.52	.61	.61	.61	.61	.61	.61
July 7	.28	.45	.57	.85	1.22	1.38	1.38	1.38	1.38	1.38	1.38	1.38
July 11	.25	.35	.38	.50	.60	.78	.82	1.20	1.25	1.28	1.29	1.29
July 13	.31	.55	.75	.85	1.10	1.25	1.60	1.60	1.61	1.61	1.61	1.61
July 31	.32	.63	.80	.83	.88	.90	.91	.93	.94	.95	.95	.95
Aug. 7	.28	.45	.56	.61	.64	.66	.67	.68	.69	.70	.73	.73
Aug. 16	.16	.28	.33	.48	.49	.50	.50	.50	.53	.55	.56	.56
Aug. 18	.21	.42	.57	.61	.63	.73	.93	.95	.95	.95	.97	.97
Oct. 13	.23	.38	.39	.41	.54	.60	.63	.63	.63	.64	.71	1.02
Scottsbluff												
July 2	.26	.46	.64	.80	.90	.92	.93	1.11	1.33	1.47	1.57	1.66
Valentine Airport												
May 27	.22	.33	.43	.53	.66	.68	.68	.68	.68	.68	.68	.68
July 3	.40	.79	1.13	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Aug. 10	.55	.79	.85	.86	.87	.87	1.00	1.04	1.04	1.05	1.13	1.15
NEVADA												
Elko Airport						None						
Ely Airport						None						
Reno Airport						None						
Winnemucca Airport						None						
NEW HAMPSHIRE												
Concord												
July 9	.32	.45	.57	.60	.62	.70	.71	.71	.71	.71	.71	.71

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
NEW HAMPSHIRE (Cont'd.)												
Concord (Cont'd.)												
Aug. 8	0.39	0.41	0.49	0.53	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56
Sept. 2	.23	.34	.39	.44	.60	.81	1.01	1.06	1.08	1.24	1.46	1.48
NEW JERSEY												
Atlantic City												
July 5	.30	.59	.73	.78	.83	.88	.91	.95	.98	1.02	1.05	1.07
July 8-9	.30	.46	.54	.57	.59	.67	.68	.70	.71	.72	.72	.83
Aug. 12	.24	.37	.48	.66	.94	1.22	1.26	1.26	1.26	1.26	1.26	1.26
Sept. 17	.37	.42	.45	.46	.48	.50	.50	.50	.51	.51	.51	.51
Dec. 14	.20	.30	.34	.38	.43	.47	.47	.47	.47	.48	.48	.50
Dec. 15	.17	.30	.36	.36	.37	.37	.38	.39	.40	.42	.44	.61
Newark Airport												
June 23	.27	.33	.39	.45	.59	.91	.99	1.03	1.05	1.06	1.07	1.07
July 27	.16	.31	.40	.52	.56	.57	.58	.64	.65	.65	.65	.96
Sept. 6	.25	.28	.31	.32	.34	.36	.41	.46	.50	.55	.78	.78
Nov. 1	.23	.38	.45	.48	.50	.51	.51	.51	.51	.51	.51	.51
Trenton												
June 10	.30	.33	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
June 17	.34	.53	.55	.55	.63	.69	.72	.73	.74	.74	.84	1.23
Sept. 6	.21	.37	.39	.41	.50	.54	.56	.59	.60	.61	.66	.69
NEW MEXICO												
Albuquerque						None						
Raton Airport												
May 24	.17	.30	.37	.37	.38	.39	.42	.45	.50	.55	.55	.59
July 18	.36	.46	.64	.82	.96	.97	.97	.97	.97	.97	.97	.97
July 30	.35	.60	.67	.69	.73	.75	1.00	1.13	1.18	1.18	1.18	1.18
Roswell Airport						None						
NEW YORK												
Albany Airport												
May 30	.42	.47	.50	.58	.67	.74	.78	.90	.92	.92	.92	.92
June 27	.25	.45	.47	.48	.48	.48	.48	.48	.48	.48	.48	.48
July 13	.15	.17	.29	.55	.68	.73	.77	.80	.83	.83	.87	.88
Aug. 31	.28	.54	.73	.90	1.24	1.43	1.43	1.43	1.43	1.43	1.43	1.43
Sept. 23	.32	.54	.75	.76	.77	.78	.78	.78	.78	.83	.94	1.18
Binghamton Airport												
May 27	.28	.43	.45	.47	.52	.52	.52	.52	.52	.52	.52	.52
May 31	.23	.31	.43	.50	.54	.54	.54	.54	.54	.54	.54	.54
June 14	.22	.36	.41	.42	.47	.50	.53	.55	.56	.64	.66	.67
June 23	.27	.36	.38	.38	.71	.72	.72	.77	.77	.77	.77	.77
July 23	.23	.32	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
July 25	.25	.39	.48	.49	.49	.49	.49	.51	.84	.84	.84	.84
Aug. 28	.21	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
Aug. 30	.50	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65
Aug. 31	.28	.48	.54	.55	.56	.57	.58	.60	.60	.60	.60	.60
Buffalo Airport												
May 30	.15	.30	.40	.45	.47	.63	.65	.65	.65	.65	.65	.65
July 13	.32	.55	.58	.74	.88	1.07	1.08	1.30	1.39	1.43	1.52	1.58
Aug. 29	.33	.39	.40	.42	.44	.50	.62	.72	.76	.78	.79	.80
Aug. 30	.36	.50	.54	.57	.60	.61	.61	.61	.63	.63	.63	.63
Aug. 31	.20	.31	.46	.57	.60	.62	.63	.63	.63	.63	.63	.63
New York												
June 24	.22	.35	.44	.48	.52	.56	.58	.62	.65	.65	.65	.65
July 27	.16	.26	.36	.42	.47	.50	.52	.54	.54	.54	.54	.56
Oct. 22	.10	.19	.27	.46	.53	.53	.53	.53	.53	.53	.53	.53
Oct. 31	.16	.24	.32	.41	.53	.64	.78	.90	.94	.96	.98	1.09
New York Airport												
June 27	.25	.26	.29	.31	.34	.34	.35	.35	.61	.61	.61	.62
Aug. 13	----	----	----	----	.79	.79	.79	.79	.79	.79	.79	.79
Oct. 31	.19	.34	.37	.44	.50	.52	.57	.73	.73	.73	1.12	1.12
Rochester Airport												
July 8	.33	.43	.54	.60	.64	.68	.72	.77	.83	.87	.87	.88
Aug. 9	.40	.68	.75	.77	.77	.77	.77	.77	.78	.79	.81	.84
Aug. 23	.23	.38	.38	.38	.38	.38	.51	.51	.51	.65	.65	.65
Aug. 28	.42	.49	.53	.53	.54	.55	.57	.57	.57	.57	.57	.57
Aug. 30	.36	.44	.51	.53	.55	.55	.63	.63	.64	.80	.85	.85
Aug. 31	.31	.33	.33	.33	.33	.34	.66	.66	.66	.66	.66	.66
Sept. 1	.29	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
Syracuse Airport												
June 15	.25	.38	.45	.48	.49	.49	.49	.49	.49	.62	.69	.69
Aug. 19	.27	.41	.47	.72	.85	.97	1.03	1.07	1.34	1.54	1.67	1.70
Aug. 30	.25	.46	.69	.81	.92	1.04	1.22	1.56	1.72	1.88	1.96	2.37
Aug. 31	.30	.50	.75	.80	.95	1.06	1.13	1.21	1.23	1.24	1.25	1.25
Sept. 1	.30	.42	.65	.75	1.04	1.22	1.28	1.28	1.28	1.28	1.28	1.28
NORTH CAROLINA												
Asheville												
June 23	.21	.40	.49	.62	.63	.65	.65	.67	.67	.67	.67	.67
June 30	.20	.31	.37	.40	.40	.40	.40	.40	.40	.40	.40	.40
July 6	.25	.38	.41	.45	.49	.50	.50	.50	.50	.50	.50	.50
July 16	.20	.40	.54	.63	.74	.77	.79	.82	.84	.85	.85	.85
Sept. 6	.30	.37	.44	.47	.68	.90	1.12	1.32	1.46	1.61	1.67	1.73
Sept. 6	.21	.42	.53	.58	.72	.78	.81	.83	.84	.86	.88	.89
Charlotte												
May 3	.15	.24	.35	.50	.66	.78	.84	.88	.90	.95	1.04	1.08
May 7	.45	.55	.57	.57	.58	.59	.59	.60	.60	.60	.60	.60
June 10	.19	.32	.38	.48	.54	.57	.59	.59	.59	.59	.59	.59
July 19	.15	.30	.35	.40	.40	.45	.47	.52	.52	.52	.52	.52
Greensboro AP												
May 3	.13	.22	.33	.42	.57	.79	.96	1.14	1.27	1.36	1.38	1.42
May 3	.26	.42	.52	.65	.75	1.26	1.47	1.48	1.50	1.53	1.54	1.54
June 26	.32	.50	.57	.60	.61	.61	.61	.61	.61	.62	.74	.78
July 6	.20	.30	.32	.38	.45	.70	.78	.85	.87	.96	.97	.97
July 9	.17	.24	.33	.41	.55	.65	.69	.76	.79	.83	.85	.87
July 24	.32	.53	.78	.98	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Aug. 2	.19	.32	.45	.58	.78	.82	.83	.84	.85	.85	.85	.85
Aug. 18	.17	.31	.39	.46	.50	.51	.52	.52	.52	.52	.52	.55
Aug. 20	.43	.75	.90	.99	1.07	1.33	1.33	1.50	1.50	1.51	1.51	1.51

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
NORTH CAROLINA (Cont'd.)												
Greensboro AP (Cont'd.)												
Aug. 21	0.18	0.32	0.37	0.38	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Aug. 28	.35	.53	.60	.65	.68	.69	.69	.69	.69	.69	.69	.69
Sept. 19	.23	.33	.41	.52	.69	.79	.80	.80	.81	.81	.81	.81
Sept. 24	.20	.37	.41	.53	.70	.78	.79	.79	.80	.82	.84	.84
Dec. 22	.21	.33	.41	.58	.79	.97	1.03	1.08	1.15	1.21	1.24	1.26
Hatteras												
Jan. 23	.13	.24	.32	.40	.61	.85	1.04	1.19	1.32	1.36	1.42	1.43
Feb. 11	.25	.48	.66	.75	.89	.97	.99	1.01	1.04	1.08	1.18	1.32
June 5	.13	.24	.32	.43	.55	.66	.68	.70	.72	.76	.79	.80
June 7	.15	.26	.40	.45	.62	.84	.96	1.03	1.22	1.24	1.28	1.36
June 30	.11	.20	.33	.41	.53	.61	.76	.81	.81	.81	.81	.81
July 7	.35	.62	.72	.81	.99	----	1.75	2.43	2.60	2.62	2.62	2.62
Aug. 2	.35	.62	.82	.96	1.19	1.43	1.86	1.97	2.03	2.06	2.10	2.11
Aug. 15	.26	.47	.55	.79	.86	.98	1.24	1.37	1.39	1.39	1.39	1.39
Sept. 26	.23	.35	.39	.42	.42	.42	.42	.42	.42	.42	.44	.44
Oct. 29	.35	.50	.54	.55	.56	.57	.58	1.02	1.31	1.38	1.42	1.48
Oct. 29	.21	.36	.45	.48	.69	.77	.86	.96	1.00	1.00	1.01	1.03
Dec. 24	.18	.34	.45	.52	.59	.59	.59	.59	.59	.59	.62	.62
Raleigh Airport												
Apr. 6	.24	.33	.36	.40	.45	.60	.73	.74	.74	.75	.76	.79
Apr. 30	.25	.35	.38	.40	.40	.40	.40	.42	.68	.68	.68	.68
May 22	.24	.47	.70	.72	.76	.79	.80	.80	.80	.80	.80	.80
June 2	.17	.26	.40	.51	.57	.66	.70	.72	.76	.84	.89	.95
June 18	.32	.60	.69	.72	.81	.84	.84	.84	.84	.84	.84	.84
July 7	.30	.45	.50	.51	.52	.53	.53	.53	.53	.53	.53	.53
July 20	.24	.44	.64	.64	.64	.64	.75	.93	1.06	1.06	1.16	1.22
July 28	.24	.47	.70	.77	.79	.80	.80	.89	.90	1.10	1.10	1.10
Sept. 20	.25	.35	.39	.40	.41	.43	.44	.45	.45	.45	.45	.45
Wilmington AP												
May 3	.21	.38	.51	.58	.71	.84	.84	.84	.84	.87	.88	.88
May 3	.20	.33	.44	.59	.78	.97	1.30	1.40	1.41	1.41	1.42	1.42
May 7	.22	.43	.60	.78	.97	1.12	1.22	1.32	1.37	1.42	1.46	1.54
May 20	.20	.40	.54	.63	.86	1.16	1.49	1.73	1.76	1.82	1.82	1.82
May 20	.15	.30	.39	.47	.58	.63	.65	.67	.67	.67	.67	.67
May 23	.18	.33	.37	.47	.56	.62	.67	.69	.71	.77	.77	.77
June 18	.27	.44	.46	.48	.52	.63	.64	.67	.67	.67	.68	.69
June 30	.22	.38	.58	.64	.70	.70	.70	.70	.70	.70	.70	.70
July 25	.18	.31	.48	.57	.61	.67	.67	.68	.93	.98	1.02	1.02
July 25	.28	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38
July 27	.39	.58	.65	.75	.94	.96	.96	.96	.96	.96	.96	.96
Aug. 2	.20	.35	.49	.51	.65	.68	.69	.71	.83	.91	1.31	1.58
Aug. 2	.22	.30	.37	.43	.50	.60	.77	.85	.88	.88	.88	.88
Aug. 16	.28	.45	.52	.55	.58	.60	.61	.61	.62	.77	.81	.85
Oct. 17	.19	.32	.38	.40	.51	.72	.89	1.14	1.23	1.26	1.42	1.46
NORTH DAKOTA												
Bismarck Airport												
May 8	.60	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65	.65
June 3	.30	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
Devils Lake												
June 5	.24	.32	.36	.46	.69	.94	1.28	1.47	1.53	1.57	1.63	1.78
June 18	.24	.40	.52	.68	.85	1.00	1.24	1.39	1.43	1.44	1.45	1.45
June 25	.15	.25	.35	.38	.41	.45	.47	.48	.48	.48	.48	.51
Aug. 5	.18	.35	.48	.55	.56	.57	.57	.57	.57	.57	.57	.57
Fargo Airport												
June 3	.12	.24	.33	.34	.53	.59	.59	.60	.60	.68	.68	.68
June 6	.14	.28	.33	.42	.59	.63	.64	.64	.64	.64	.66	.66
June 25	.24	.44	.50	.52	.54	.56	.60	.60	.60	.60	.61	.61
July 17	.24	.43	.50	.57	.80	.86	.88	1.14	1.18	1.22	1.27	1.34
July 18	.52	.86	.96	1.06	1.13	1.14	1.14	1.15	1.16	1.17	1.18	1.18
Aug. 7	.14	.24	.36	.39	.40	.42	.45	.47	.50	.51	.51	.51
Williston												
May 25	.32	.35	.36	.38	.38	.38	.38	.38	.38	.38	.38	.38
June 18	.41	.64	.86	.88	.89	.89	.89	.91	.91	.91	.92	1.20
June 18	.38	.62	.80	.85	1.03	1.04	1.04	1.04	1.04	1.04	1.17	1.17
OHIO												
Akron Airport												
Apr. 28	.30	.39	.39	.41	.42	.46	.51	.56	.59	.64	.66	.66
July 4	.15	.25	.33	.40	.53	.65	.87	1.02	1.07	1.25	1.30	1.30
July 5	.20	.31	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
July 8	.25	.37	.38	.39	.40	.42	.42	.43	.43	.43	.43	.43
July 12	.25	.28	.33	.34	.39	.40	.42	.43	.44	.45	.45	.45
July 24	.25	.37	.45	.60	.87	1.08	1.22	1.22	1.22	1.22	1.22	1.22
Aug. 13	.18	.26	.30	.42	.63	.70	.84	.90	.96	1.05	1.11	1.11
Aug. 23	.42	.43	.50	.55	.61	.68	.70	.81	.95	.95	.95	.95
Aug. 27	.32	.58	.70	.83	.98	1.11	1.15	1.18	1.20	1.20	1.20	1.20
Sept. 5	.37	.69	.94	1.08	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
Oct. 6	.28	.31	.36	.39	.43	.48	.50	.50	.50	.50	.50	.50
Cleveland Airport												
May 11	.20	.25	.33	.45	.61	.75	.91	.92	1.18	1.21	1.22	1.25
June 23	.20	.40	.60	.80	.97	1.02	1.02	1.05	1.08	1.12	1.15	1.15
June 24	.27	.33	.40	.40	.40	.48	.51	.51	.51	.52	.53	.53
July 8	.30	.57	.77	.94	1.16	1.18	1.20	1.36	1.38	1.40	1.40	1.40
July 17	.17	.21	.30	.36	.57	.62	.64	.65	.88	.90	.90	.90
Aug. 5	.14	.28	.39	.42	.44	.46	.46	.48	.50	.52	.53	.53
Aug. 5	.26	.43	.45	.46	.47	.49	.51	.53	.53	.53	.53	.53
Aug. 11	.20	.36	.45	.50	.55	.74	.79	.83	.83	.83	.83	.83
Aug. 18	.14	.22	.31	.40	.58	.58	.58	.58	.58	.58	.58	.58
Aug. 27	.22	.43	.55	.60	.70	.82	.84	.88	.90	.91	.92	.92
Oct. 6	.20	.35	.40	.42	.48	.51	.52	.56	.56	.56	.56	.56
Columbus Airport												
Apr. 28	.20	.36	.36	.37	.37	.37	.37	.47	.58	.60	.60	.60
June 13	.16	.28	.39	.46	.51	.52	.52	.52	.52	.52	.52	.52
June 18	.22	.34	.40	.46	.63	.70	.75	.82	.84	.85	.90	.91
June 21	.25	.29	.30	.30	.30	.30	.30	.31	.32	.32	.36	.36
July 2	.27	.40	.61	.79	.93	.97	.98	.98	.98	.98	.98	.98
July 13	.27	.39	.47	.47	.47	.47	.47	.47	.47	.48	.48	.48
July 20	.30	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
July 28	.23	.42	.57	.68	.72	.72	.73	.76	.78	.80	.82	.82
Aug. 4	.28	.39	.44	.54	.60	.61	.61	.61	.61	.61	.61	.61
Aug. 23	.19	.30	.37	.43	.47	.48	.50	.53	.54	.54	.54	.55
Sept. 1	.28	.38	.40	.41	.42	.44	.45	.45	.45	.45	.45	.45
OHIO (Cont'd.)												
Dayton Airport												
May 27	0.24	0.30	0.39	0.47	0.60	0.67	0.72	0.78	0.82	0.85	0.87	0.97
June 18	.18	.30	.41	.45	.68	.78	.83	.89	.95	.99	1.09	1.14
July 3	.26	.38	.43	.45	.54	.57	.61	.70	.76	.80	.83	.84
July 20	.34	.49	.50	.52	.62	.63	.65	.66	.68	.70	.71	.72
July 28	.32	.48	.52	.61	.69	.69	.70	.70	.70	.70	.75	1.10
July 28	.21	.31	.36	.39	.40	.40	.40	.40	.40	.40	.40	.40
Aug. 13	.20	.35	.46	.47	.62	.63	.65	.80	.80	.80	.80	.80
Sandusky												
May 11	.30	.40	.53	.55	.66	.85	1.35	1.37	1.38	1.40	1.42	1.51
Aug. 4	.27	.37	.43	.45	.47	.49	.50	.50	.50	.58	.59	.60
Aug. 5	.58	.80	.96	1.03	1.07	1.08	1.10	1.10	1.10	1.10	1.10	1.10
Aug. 11	.30	.45	.50	.51	.56	.58	.61	.68	.68	.68	.68	.68
Aug. 18	.29	.55	.68	.80	.80	.81	.81	.81	.82	.82	.82	.82
Aug. 30	.33	.43	.62	.71	.90	.91	.92	.92	.93	.93	.93	.93
Sept. 1	.28	.36	.38	.39	.40	.40	.40	.40	.40	.40	.42	.47
Oct. 6	.14	.26	.32	.42	.45	.45	.45	.45	.45	.45	.45	.45
Toledo Airport												
Apr. 29	.25	.39	.47	.52	.64	.77	.93	1.27	1.47	1.48	1.52	1.57
May 11	.40	.65	.70	.76	.89	.96	.96	.96	.96	.96	.96	.97
June 17	.37	.49	.68	.81	.92	1.05	1.07	1.07	1.13	1.20	1.22	1.22
July 16	.32	.40	.41	.41	.42	.47	.50	.50	.85	.92	.99	.99
July 20	.35	.41	.43	.45	.45	.45	.45	.46	.46	.46	.46	.46
Aug. 13	.35	.60	.70	.85	1.07	1.24	1.27	1.37	1.62	1.68	1.71	1.72
Aug. 18	.43	.50	.65	.90	1.03	1.05	1.05	1.08	1.08	1.08	1.08	1.16
Aug. 18	.25	.28	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
Aug. 31	.36	.47	.48	.48	.48	.48	.48	.48	.48	.48	.48	.48
Youngstown AP												
Apr. 3	.19	.30	.36	.45	.48	.52	.58	.66	.77	.83	1.00	1.11
Apr. 28	.28	.29	.30	.30	.30	.32	.33	.37	.45	.52	.55	.55
May 31	.21	.36	.50	.70	.85	.88	.90	.95	.95	.95	.95	.97
June 13	.23	.33	.41	.45	.51	.54	.54	.54	.54	.54	.54	.54
June 21	.28	.38	.39	.39	.41	.66	.69	.80	.86	.88	.88	.88
June 24	.51	.82	.90	.93	.94	.95	.96	1.00	1.02	1.05	1.09	1.13
July 16	.23	.34	.48	.61	.69	.80	1.26	1.40	1.40	1.40	1.48	1.57
July 17	.21	.34	.45	.56	.86	.93	1.00	1.03	1.03	1.03	1.03	1.07
July 20	.25	.38	.45	.54	.57	.60	.61	.61	.61	.61	.61	.61
July 26	.37	.63	.74	.79	.87	.91	.96	1.09	1.12	1.12	1.12	1.12
Aug. 5	.50	.80	.91	.95	1.00	1.03	1.09	1.15	1.64	1.80	1.81	1.81
Aug. 23	.32	.61	.72	.80	1.03	1.17	1.23	1.26	1.28	1.28	1.28	1.28
Aug. 27	.21	.31	.37	.40	.43	.45	.49	.56	.58	.59	.60	.61
OKLAHOMA												
Oklahoma City AP												
May 14	.25	.34	.35	.35	.35	.35	.37	.38	.38	.40	.55	.55
May 25	.20	.32	.33	.34	.35	.38	.43	.43	.46	.47	.51	.53
May 26	.21	.42	.52	.56	.69	.70	.72	.82	.83	.84	.87	.92
May 31	.43	.81	.96	1.02	1.07	1.26	1.41	1.45	1.47	1.47	1.47	1.47
June 24	.17	.32	.40	.51	.68	.69	.69	.69	.70	.70	.76	.76
Oct. 14	.23	.39	.60	.68	.86	1.10	1.26	1.50	1.78	1.97	2.08	2.08
Tulsa Airport												
Apr. 2	.33	.38	.39	.39	.39	.41	.42	.43	.43	.43	.45	.45
Apr. 28	.23	.30	.30	.30	.30	.33	.33	.33	.43	.65	.68	.71
May 14	.25	.40	.47	.51	.58	.63	.78	.81	.85	.87	.99	1.42
June 27	.20	.32	.43	.59	.83	.87	.94	.98	1.02	1.05	1.10	1.18
Oct. 14	.15	.29	.37	.42	.49	.54	.61	.72	.80	.86	.91	.97
Nov. 20	.35	.46	.48	.48	.48	.48	.50	.52	.53	.55	.82	.83
OREGON												
Astoria Airport												
Jan. 15	.15	.27	.32	.40	.43	.52	.57	.59	.61	.63	.70	.75
Burns						None						
Eugene						None						
Meacham Airport						None						
Medford Airport												
May 18	.36	.70	.90	1.02	1.27	1.36	1.40	1.47	1.49	1.50	1.59	1.67
July 12	.10	.19	.28	.38	.55	.69	.74	.74	.74	.74	.76	.82
Pendleton Airport						None						
Portland												
June 4	.27	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
Roseburg Airport						None						
Sexton Summit												
July 12	.25	.39	.49	.65	.75	.90	.99	1.03	1.04	1.14	1.19	1.19
PENNSYLVANIA												
Allentown Airport												
May 6	.35	.47	.95	1.00	1.08	1.10	1.10	1.12	1.25	1.37	1.50	1.55
June 23	.40	.65	.80	1.05	1.18	1.25	1.31	1.65	2.23	2.37	2.53	2.59
June 27	.30	.35	.37	.37	.37	.37	.37	.40	.42	.47	.57	.57
July 3	.29	.40	.52	.70	1.00	1.30	1.45	1.60	1.68	1.73	1.76	1.77
Harrisburg Airport												
July 2	.20	.34	.36	.36	.38	.38	.38	.39	.40	.40	.40	.40
Sept. 6	.15	.27	.37	.42	.51	.54	.58	.63	.67	.70	.72	.72
Dec. 15	.23	.31	.41	.43	.44	.45	.46	.48	.48	.48	.48	.48
Philadelphia AP												
May 6	.45	.75	.80	.90	.98	1.65	1.97	2.00	2.04	2.07	2.07	2.07
June 10	.27	.53	.60	.67	.74	.82	.83	.83	.83	.83	.83	.83
June 16	.22	.42	.55	.67	.78	.82	.92	.98	.98	.98	.98	.98
July 28	.22	.33	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
Sept. 2	.27	.29	.32	.35	.36	.37	.47	.48	.48	.48	.48	.48
Sept. 6	.45	.70	.95	.99	1.15	1.26	1.33	1.37	1.38	1.43	1.53	1.57
Pittsburgh AP												
May 6	.17	.33	.38	.39	.40	.61	.66	.78	.93	.95	.98	1.00
June 17	.31	.49	.56	.59	.63	.65	.77	.78	.78	.78	.80	.82
June 24	.15	.25	.40	.45	.55	.58	.67	.67	.69	.73	.78	.80
July 9	.54	.67	.67	.67	.67	.67	.67	.67	.69	.70	.70	.70
July 20	.36	.60	.71	.91	.98	1.12	1.13	1.13	1.13	1.13	1.13	1.14
July 26	.55	.82	1.01	1.15	1.20	1.26	1.26	1.26	1.26	1.26	1.26	1.26

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
PENNSYLVANIA (Cont'd.)												
Pittsburgh AP (Cont'd.)												
Aug. 5	0.26	0.42	0.50	0.56	0.63	0.68	0.71	0.75	0.75	1.21	1.50	1.50
Aug. 5	.30	.50	.57	.58	.60	.61	.62	.66	.71	.75	.77	.81
Aug. 5	.16	.21	.37	.42	.45	.47	.51	.56	.60	.62	.64	.64
Aug. 9	.17	.38	.38	.38	.38	.38	.38	.40	.40	.40	.40	.40
Pittsburgh												
June 16	.22	.31	.34	.39	.63	.74	.79	.79	.85	.87	.88	.92
June 18	.21	.30	.37	.51	.60	.62	.63	.63	.65	.65	.65	.65
July 9	.32	.42	.46	.46	.46	.46	.46	.46	.46	.46	.46	.46
July 22	.32	.54	.55	.55	.59	.60	.60	.60	.60	.60	.60	.60
July 26	.34	.51	.65	.74	.77	.77	.78	.78	.78	.78	.78	.78
Aug. 5	.27	.45	.54	.57	.58	.59	.60	.61	.66	.88	1.09	1.09
Aug. 5	.29	.50	.62	.69	.87	.92	.92	.96	1.00	1.03	1.06	1.06
Aug. 5	.22	.37	.42	.43	.47	.49	.53	.81	.85	.90	.99	1.04
Sept. 23	.34	.34	.34	.34	.34	.34	.34	.34	.34	.36	.38	.38
Reading												
Feb. 25	.18	.31	.38	.40	.41	.49	.52	.52	.52	.55	.56	.56
May 6	.24	.29	.32	.35	.51	.55	.58	.60	.62	.62	.62	.62
June 10	.26	.38	.43	.44	.52	.88	.95	1.00	1.00	1.02	1.02	1.02
June 17	.27	.47	.67	.81	.85	.85	.85	.85	.85	.85	.85	.85
June 23	.23	.35	.43	.52	.59	.66	.68	.70	.70	.70	.70	.70
Sept. 17	.28	.32	.40	.48	.51	.52	.52	.52	.52	.52	.52	.52
Oct. 23	.20	.35	.41	.49	.54	.62	.68	.76	.81	.85	.92	.99
Nov. 2	.20	.26	.33	.36	.43	.65	.71	.75	.80	.81	.82	.88
Scranton Airport												
Apr. 28	.18	.33	.37	.38	.39	.43	.43	.43	.43	.43	.43	.43
Apr. 29	.28	.38	.41	.43	.44	.46	.46	.46	.62	.64	.64	.64
June 1	.30	.37	.40	.40	.40	.41	.44	.45	.46	.47	.55	.55
June 21	.21	.36	.41	.42	.45	.48	.49	.55	.57	.59	.60	.74
June 23	.38	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41
June 27	.27	.38	.44	.50	.55	.59	.61	.62	.64	.64	.64	.64
Aug. 31	.28	.43	.47	.47	.47	.47	.47	.47	.47	.53	.55	.85
RHODE ISLAND												
Providence Airport												
Oct. 7	.34	.42	.56	.66	.87	1.32	1.58	1.65	1.74	1.87	2.12	2.30
SOUTH CAROLINA												
Charleston												
Mar. 11	.35	.62	.83	.89	.94	1.01	1.31	1.33	1.35	1.37	1.37	1.37
May 5	.15	.25	.36	.43	.51	.55	.55	.55	.56	.56	.57	.57
June 1	.29	.44	.53	.61	.80	.97	1.25	1.38	1.65	1.66	1.70	1.75
June 5	(.20)	(.30)	(.40)	(.50)	(.55)	(.55)	(.55)	(.56)	(.57)	(.57)	(.58)	(.58)
June 24	(.30)	(.41)	(.49)	(.60)	(.87)	.96	.97	1.00	1.02	1.02	1.02	1.02
June 30	.25	.37	.56	.65	.71	.74	.75	.77	.78	.78	.78	.78
July 1	.25	.32	.39	.49	.67	.76	.79	.79	.79	.80	.81	.81
July 17	.44	.83	1.03	1.11	1.13	1.17	1.65	1.82	1.84	1.84	1.84	1.86
July 17	.23	.35	.44	.44	.44	.44	.46	.46	.49	.61	.64	.64
July 27	.15	.29	.43	.56	.64	.68	.69	.69	.69	.69	.69	.69
July 30	.20	.34	.42	.46	.47	.47	.47	.47	.47	.47	.47	.47
Aug. 2	.28	.35	.36	.37	.38	.38	.38	.38	.38	.39	.40	.40
Aug. 15	.40	.65	.89	1.09	1.29	1.80	2.00	2.14	2.25	2.28	2.32	2.35
Sept. 4	.35	.53	.59	.62	.64	.64	.64	.64	.64	.64	.64	.64
Sept. 18	.29	.47	.66	.90	1.17	1.44	1.69	1.76	1.76	1.76	1.78	1.81
Sept. 25	.29	.32	.40	.42	.44	.44	.44	.44	.44	.44	.56	.64
Columbia Airport												
Apr. 11	.20	.37	.56	.65	.83	.90	1.00	1.12	1.20	1.28	1.48	1.84
May 2	.30	.43	.44	.45	.45	.45	.45	.45	.45	.45	.45	.49
June 30	.17	.34	.50	.63	.77	.95	1.00	1.05	1.15	1.18	1.20	1.25
July 21	.18	.31	.39	.41	.42	.43	.54	.61	.62	.76	.79	.79
July 27	.40	.55	.72	.92	1.01	1.50	1.60	1.63	1.64	1.67	1.68	1.69
Sept. 1	.31	.60	.89	1.00	1.40	2.00	2.56	2.70	2.72	2.72	2.72	2.72
Florence Airport												
Feb. 3	.22	.29	.35	.54	.57	.75	.80	.89	.91	.91	.95	.96
May 3	.35	.52	.54	.54	.55	.55	.55	.55	.55	.56	.56	.56
June 1	.32	.50	.57	.67	.96	1.19	1.21	1.21	1.21	1.22	1.27	1.30
June 29	.19	.26	.35	.40	.48	.73	.75	.81	.84	.86	.92	.96
July 19	.35	.70	.83	1.03	1.13	1.17	1.20	1.20	1.20	1.20	1.20	1.20
July 20	.32	.46	.66	.80	.87	.91	.91	.91	.92	.92	.92	.92
Aug. 2	.26	.32	.42	.42	.42	.43	.43	.43	.43	.43	.72	.73
Aug. 19	.18	.25	.60	.72	.87	.90	.92	.92	.92	.92	.92	.92
Aug. 20	.15	.22	.33	.40	.41	.42	.44	.45	.51	.55	.60	.62
Aug. 21	.45	.75	.95	1.12	1.22	1.22	1.22	1.22	1.22	1.23	1.25	1.25
Sept. 4	.35	.49	.60	.66	.76	.77	.78	.78	.78	.78	.80	.80
Oct. 19	.25	.31	.41	.45	.55	.58	.65	.70	.70	.71	.71	.71
Nov. 1	.20	.35	.44	.48	.50	.50	.50	.50	.50	.50	.50	.50
Dec. 15	.20	.29	.42	.44	.46	.54	.54	.54	.54	.54	.54	.60
Greenville Airport												
Feb. 6	.31	.57	.71	.80	.84	.89	.94	1.02	1.09	1.11	1.17	1.23
Apr. 6	.42	.57	.63	.66	.88	.93	.93	.94	.95	.95	.95	1.00
Apr. 15	.34	.45	.55	.67	.85	.97	1.13	1.74	1.80	1.87	1.99	2.10
May 2	.25	.44	.55	.58	.62	.68	.69	.75	.88	.88	.88	.88
May 4	.25	.41	.49	.50	.65	.75	.79	.88	.95	.97	1.01	1.05
June 29	.25	.38	.53	.61	.67	.68	.68	.68	.68	.68	.68	.68
July 2	.32	.45	.51	.57	.62	.64	.65	.66	.66	.67	.67	.68
July 4	.80	1.27	1.52	1.82	2.29	2.57	2.69	2.72	2.72	2.73	2.73	2.73
July 19	.31	.45	.57	.65	.74	.77	.78	.78	.79	.79	.79	.79
July 20	.16	.25	.39	.49	.60	.61	.61	.67	.67	.68	.68	.68
Aug. 20	.28	.38	.44	.48	.49	.81	.89	.92	.93	.93	.93	.93
Oct. 22	.24	.32	.34	.37	.41	.43	.45	.45	.45	.45	.45	.45
Spartanburg AP												
Apr. 6	.50	.63	.69	.71	.71	.72	.74	.75	.75	.75	.75	.75
Apr. 15	.21	.38	.47	.56	.71	.87	1.17	1.46	1.27	1.59	1.70	1.85
May 1	.26	.29	.30	.33	.35	.39	.40	.40	.40	.40	.40	.42
May 4	.26	.32	.34	.38	.43	.46	.80	.81	.81	.81	.81	.81
June 1	.35	.58	.91	1.03	1.09	1.10	1.10	1.10	1.10	1.10	1.10	1.40
July 2	.24	.48	.66	.78	.87	.89	.89	.89	.89	.89	.89	.89
July 6	.23	.40	.50	.66	.89	.90	.90	.90	.95	1.14	1.33	1.35
Aug. 15	.22	.32	.34	.34	.35	.42	.45	.45	.46	.47	.50	.50
Aug. 19	.20	.30	.40	.50	.57	.64	.81	.81	.82	.82	.82	.82
Aug. 20	.35	.58	.71	.83	.93	1.02	1.02	1.02	1.02	1.02	1.02	1.02
SOUTH DAKOTA												
Huron Airport												
June 28	.32	.56	.69	.78	.80	.81	.81	.81	.81	.81	.81	.81
SOUTH DAKOTA (Cont'd.)												
Huron AP (Cont'd.)												
July 1	0.15	0.25	0.31	0.42	0.52	0.63	0.85	0.97	0.98	0.98	0.98	1.02
Aug. 3	.60	1.00	1.31	1.35	1.68	2.06	2.12	2.16	2.27	2.39	2.42	2.42
Rapid City AP												
July 2	.16	.28	.37	.44	.56	.65	.95	1.09	1.10	1.10	1.10	1.12
Aug. 11	.18	.30	.37	.40	.40	.41	.41	.41	.45	.45	.45	.45
Sioux Falls AP												
June 3	.28	.43	.53	.68	1.04	1.21	1.23	1.23	1.23	1.23	1.23	1.23
June 4	.65	.97	1.26	1.44	1.62	1.71	1.73	1.73	1.73	1.73	1.74	1.78
June 17	.32	.58	.89	1.05	1.20	1.85	2.28	2.31	2.31	2.31	2.31	2.31
July 6-7	.21	.31	.35	.38	.40	.44	.47	.51	.59	.66	.69	.70
July 7	.15	.30	.38	.43	.54	.64	.67	.71	.73	.73	.73	.73
July 30	.22	.31	.37	.54	.57	.59	.60	.61	.64	.78	.80	.80
Aug. 6	.32	.40	.44	.46	.50	.55	.79	.80	.90	.90	.90	.92
Aug. 8	.29	.39	.46	.49	.54	.58	.59	.59	.60	.60	.60	.60
Aug. 12	.38	.50	.54	.57	.60	.63	.63	.63	.63	.65	.88	.92
TENNESSEE												
Bristol Airport												
May 28	.20	.35	.47	.62	.78	.80	.82	.85	.85	.86	.88	.88
Aug. 20	.15	.30	.40	.45	.55	.60	.70	.75	.80	.90	.92	.92
Oct. 5	.20	.35	.40	.45	.55	.58	.60	.62	.68	.71	.74	.74
Chattanooga AP												
Apr. 4	.27	.36	.39	.43	.51	.60	.68	.77	.81	.88	.89	.89
July 12	.37	.58	.70	.76	.78	.78	.78	.79	.79	.79	.79	.79
Aug. 18	.41	.72	.90	1.04	1.29	1.40	1.46	1.46	1.46	1.46	1.47	1.49
Knoxville Airport												
June 1	.23	.33	.35	.39	.39	.39	.39	.39	.39	.39	.39	.41
June 15	.33	.59	.73	.91	1.04	1.07	1.07	1.07	1.07	1.07	1.07	1.07
June 24	.23	.43	.52	.55	.57	.58	.58	.58	.59	.62	.65	.66
July 6	.24	.42	.43	.43	.43	.50	.54	.56	.80	.96	1.00	1.00
July 9	.32	.46	.50	.51	.53	.59	.63	.73	.77	.79	.79	.79
July 28	.21	.32	.38	.42	.47	.50	.52	.52	.52	.52	.52	.52
Dec. 13	.16	.22	.28	.34	.47	.69	.81	.90	1.22	1.35	1.72	1.85
Memphis Airport												
Jan. 29	.24	.30	.34	.41	.54	.68	.79	.94	1.05	1.14	1.29	1.31
Feb. 15	.26	.38	.43	.47	.54	.58	.65	.68	.68	.69	.71	.74
Feb. 16	.29	.39	.41	.43	.46	.56	.60	.60	.61	.63	.66	.74
Feb. 17	.23	.29	.33	.38	.56	.57	.58	.59	.73	.79	.83	.86
Feb. 27	.27	.27	.27	.27	.28	.28	.28	.28	.29	.29	.29	.29
Apr. 3	.51	.66	.78	.81	.83	.88	.89	.90	.99	1.05	1.06	1.07
May 15	.24	.35	.40	.43	.48	.53	.54	.58	.67	.76	.78	.78
June 15	.25	.35	.37	.39	.41	.46	.66	.69	.74	.75	.75	.75
June 29	.20	.28	.38	.48	.55	.56	.56	.63	.71	.71	.71	.71
July 19	.33	.43	.44	.44	.60	.69	.70	.72	.73	.73	.74	.74
July 24	.36	.55	.63	.66	.67	1.24	1.30	1.31	1.31	1.32	1.32	1.32
Aug. 20	.19	.29	.40	.51	.58	.60	.61	.61	.61	.63	.66	.67
Aug. 31	.22	.40	.57	.71	1.00	1.33	1.40	1.43	1.44	1.45	1.47	1.48
Oct. 25-26	.26	.48	.58	.61	.66	.71	.75	.79	.82	.82	.84	.85
Dec. 19	.18	.30	.34	.37	.39	.41	.42	.45	.48	.49	.51	.62
Nashville AP												
Jan. 29	.12	.24	.32	.41	.46	.75	.80	1.00	1.05	1.14	1.29	1.40
Jan. 29	.25	.46	.48	.51	.63	.70	.74	.77	.85	.89	1.03	1.08
Feb. 17	.17	.24	.35	.43	.54	.65	.65	.70	.72	.73	.74	.81
Mar. 3*	.35	.45	.50	.63	.77	.93	.96	.96	.96	.96	.96	.96
May 6	.39	.57	.82	.92	.94	.95	.95	.96	.98	.99	1.00	1.00
TEXAS												
Abilene Airport												
Oct. 30	.23	.36	.40	.48	.56	.61	.67	.68	.69	.73	.78	.82
Amarillo Airport												
May 29	.15	.30	.35	.40	.50	.63	.63	.65	.65	.65	.65	.66
June 17	.39	.66	.69	.74	.92	1.01	1.10	1.15	1.16	1.20	1.21	1.22
July 2	.32	.40	.42	.42	.42	.42	.42	.45	.45	.45	.45	.61
July 13	.24	.37	.44	.46	.50	.70	.76	.77	.84	.85	.86	.87
Aug. 4	.19	.26	.37	.45	.48	.49	.50	.50	.50	.50	.50	.50
Sept. 24	.23	.33	.37	.38	.38	.40	.42	.43	.43	.43	.43	.43
Austin Airport												
Feb. 8	.19	.36	.44	.48	.55	.94	.98	1.13	1.20	1.40	1.43	1.43
Apr. 23	.20	.25	.36	.39	.41	.42	.42	.43	.43	.44	.44	.45
May 1	.20	.34	.40	.44	.66	.91	1.20	1.43	1.51	1.55	1.85	2.03
June 19	.25	.34	.38	.41	.43	.43	.43	.47	.47	.47	.47	.47
Dec. 18	.17	.28	.34	.40	.50	.72	.88	.95	1.06	1.12	1.24	1.39
Brownsville AP												
Apr. 23	.63	.91	1.02	1.19	1.39	1.65	1.76	2.23	2.31	2.34	2.57	2.63
June 17	.25	.39	.52	.70	1.01	1.50	1.70	2.04	2.21	2.35	2.36	2.36
June 23	.30	.40	.42	.44	.55	.67	.80	.82	.82	.83	.90	.90
June 24	.17	.25	.36	.43	.49	.53	.54	.54	.54	.55	.56	.56
Sept. 10	.19	.33	.49	.59	.63	.63	.63	.63	.63	.63	.63	.66
Sept. 10	.20	.27	.33	.41	.46	.62	.65	.67	.67	.67	.67	.67
Corpus Christi AP												
Apr. 23	.62	1.09	1.31	1.37	1.60	2.08	2.43	2.75	3.23	4.14	4.73	5.35
May 15	.38	.67	.95	1.21	1.75	2.24	2.52	2.63	2.71	2.73	2.78	2.82
July 10	.24	.36	.41	.45	.51	.52	.52	.52	.52	.52	.52	.53
Sept. 5	.19	.29	.38	.39	.40	.40	.40	.72	.73	.73	.73	.73
Nov. 15	.13	.19	.26	.33	.51	.63	.77	.84	.89	.91	.93	.93
Dallas Airport												
Apr. 14	.38	.62	.75	.81	.81	.81	.81	.81	.81	.81	.81	.81
Apr. 29	.20	.33	.48	.61	.83	1.03	1.17	1.28	1.57	1.79	2.18	2.22
May 1	.26	.50	.60	.75	.90	1.40	1.53	1.63	1.73	1.80	1.82	1.85
May 1	.28	.45	.51	.63	.91	.93	.94	.95	.95	.95	.95	.95
Aug. 30	.28	.47	.58	.63	.75	.76	.77	.79	.81	.82	.82	.82
Nov. 3	.20	.31	.36	.37	.38	.39	.40	.49	.51	.56	.72	.73
Del Rio Airport												
Sept. 6	.32	.39	.40	.45	.53	.54	.55	.65	.76	.78	.82	.85
Oct. 18	.51	.89	1.06	1.11	1.14	1.20	1.33	1.36	1.38	1.38	1.38	1.38
El Paso Airport						None						

( ) Estimated data

* Triple register record; others weighing gage record.

EXCESSIVE SHORT DURATION RAINFALL

YEAR 1956

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
TEXAS (Cont'd.)												
Fort Worth AP												
Feb. 8	0.15	0.24	0.32	0.43	0.54	0.76	0.80	0.86	0.94	0.99	1.08	1.10
Apr. 14	.33	.40	.50	.52	.53	.53	.53	.53	.53	.53	.53	.54
Apr. 29	.23	.40	.48	.53	.63	.75	.82	1.01	1.36	1.54	1.62	1.69
May 1	.22	.32	.42	.46	.53	.81	.88	1.04	1.24	1.30	1.37	1.38
May 1	.13	.19	.27	.32	.50	.56	.57	.57	.57	.57	.57	.57
May 31	.25	.38	.53	.66	.85	.91	.96	.97	.97	1.01	1.05	1.05
Galveston												
Jan. 21	.22	.37	.40	.43	.53	.56	.59	.64	.69	.73	.78	.85
Feb. 8	.19	.30	.40	.45	.50	.50	.50	.50	.50	.50	.50	.50
Aug. 26	.27	.35	.55	.64	.68	.74	.95	1.02	1.06	1.06	1.06	1.06
Dec. 17	.23	.43	.64	.78	1.11	1.39	1.51	1.56	1.60	1.61	1.70	1.72
Dec. 19	.13	.25	.34	.40	.51	.60	.65	.72	.85	1.18	1.33	1.36
Houston												
Jan. 21	.17	.32	.44	.54	.67	.71	.75	.79	.82	.86	.87	.89
Feb. 8	.22	.37	.51	.57	.65	.70	.75	.79	.79	.80	.80	.80
Apr. 9	.23	.40	.53	.64	.75	.91	1.00	1.10	1.17	1.21	1.21	1.23
May 1-2	.24	.31	.42	.55	.80	1.09	1.23	1.47	1.59	1.61	1.62	1.62
June 15	.22	.37	.51	.63	.78	1.00	1.19	1.33	1.36	1.38	1.40	1.40
June 16	.20	.40	.55	.68	.91	1.05	1.27	1.40	1.46	1.48	1.49	1.49
June 17	.16	.28	.38	.46	.67	.93	1.12	1.25	1.27	1.27	1.27	1.27
July 10	.35	.62	.85	1.00	1.20	1.28	1.31	1.39	1.44	1.46	1.47	1.52
Aug. 19	.24	.36	.46	.49	.54	.55	.56	.57	.57	.57	.57	.57
Oct. 2	.41	.76	1.08	1.18	1.24	1.26	1.27	1.27	1.27	1.27	1.27	1.27
Oct. 3	.45	.66	.77	.80	.81	.81	.95	.96	.96	.96	.96	.96
Oct. 20	.31	.43	.49	.51	.55	.59	.61	.62	.66	.70	.74	.76
Nov. 15	.24	.45	.63	.73	.90	1.14	1.42	1.99	2.05	2.11	2.32	2.45
Dec. 17	.29	.41	.50	.56	.68	.71	.72	.72	.73	.73	.73	.73
Dec. 18	.25	.41	.55	.64	.69	.72	.77	.82	.87	.91	.96	.98
Dec. 22	.34	.40	.40	.40	.41	.42	.50	.60	.64	.64	.64	.65
Laredo Airport												
Apr. 9	.26	.34	.42	.48	.82	1.10	1.10	1.10	1.10	1.10	1.10	1.10
May 15	.35	.60	.85	1.10	1.55	2.25	2.60	2.94	2.96	2.96	2.96	2.96
Sept. 1	.30	.55	.63	.67	1.07	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Oct. 18	.20	.35	.47	.53	.65	.70	.82	.97	.99	1.00	1.03	1.03
Midland Airport												
June 22	.35	.50	.75	.96	1.05	1.24	1.24	1.24	1.24	1.24	1.24	1.24
Aug. 19	.26	.45	.53	.65	.84	1.01	1.07	1.21	1.24	1.32	1.39	1.43
Port Arthur AP												
Jan. 21	.42	.56	.64	----	----	----	.96	1.02	1.04	1.05	1.10	1.12
Feb. 8	.26	.44	.57	.65	.76	.80	.83	.85	.85	.86	.87	.87
Feb. 14	.36	.58	.78	.97	1.19	1.46	1.56	1.57	1.57	1.57	1.62	1.64
Mar. 15	.32	.42	.45	.57	.61	.63	.63	.63	.63	.63	.63	.79
Mar. 21	.47	.64	.67	.69	.72	.85	.89	.90	.90	.90	.90	.90
Apr. 23	.17	.27	.40	.50	.63	.73	.85	.94	.99	1.04	1.26	1.41
May 2	.41	.67	.94	1.19	1.63	2.06	2.15	2.23	2.27	2.33	2.33	2.34
May 29	.43	.78	1.06	1.20	1.36	1.39	1.39	1.40	1.40	1.40	1.40	1.40
June 12	.23	.40	.54	.55	.55	.55	.55	.55	.55	.55	.56	.56
June 18	.23	.39	.49	.50	.52	.52	.52	.52	.52	.53	.53	.53
Aug. 1	.13	.22	.30	.38	.51	.69	.75	.77	.77	.97	.98	1.00
Oct. 20	.22	.39	.48	.56	.59	.63	.70	.70	.71	.71	.72	.72
Nov. 15	.30	.49	.54	.58	.60	.60	.63	.66	.67	.68	.68	.87
Dec. 13	.23	.34	.36	.36	.45	.66	.73	.73	.79	.85	1.15	1.29
Dec. 13	.23	.40	.49	.63	.73	.75	.77	.78	.82	.85	.92	1.11
Dec. 21	.37	.44	.49	.65	.69	.72	.72	.73	.90	1.22	1.25	1.25
Dec. 22	.31	.50	.69	.82	.91	1.28	1.58	1.89	2.34	2.54	2.81	3.47
San Angelo												
Aug. 19	.18	.30	.38	.44	.55	.72	----	----	----	----	----	----
Oct. 17	.18	.34	.38	.46	.70	.75	.81	.86	.92	.93	.94	.94
San Antonio AP												
May 15	.44	.77	1.00	1.20	1.48	1.58	1.61	1.61	2.06	2.20	2.22	2.22
Aug. 20	.40	.60	.81	.93	1.11	1.16	1.27	1.83	1.93	2.00	2.04	2.09
Aug. 27	.31	.48	.60	.68	.82	.85	.86	.86	.86	.87	.88	.88
Nov. 3	.23	.35	.37	.38	.39	.41	.42	.42	.42	.42	.42	.43
Victoria												
Apr. 9	.30	.32	.33	.35	.35	.37	.50	.55	.65	.68	.76	.76
May 2	.15	.25	.35	.45	.65	.75	.90	.95	1.00	1.07	1.40	1.67
Oct. 18	.25	.45	.65	1.00	1.35	2.16	2.18	2.32	2.35	2.50	2.70	2.85
Dec. 18	.15	.25	.37	.45	.58	.73	.87	.96	1.05	1.22	1.40	1.44
Waco Airport												
Apr. 5	.20	.32	.37	.38	.40	.40	.40	.40	.40	.40	.40	.40
May 1	.15	.26	.34	.44	.64	.72	.83	.84	.85	.85	.85	.85
May 1	.35	.70	.90	1.20	1.47	1.60	1.67	1.68	1.70	1.71	1.80	1.87
May 29	.27	.42	.45	.47	.47	.48	.49	.49	.49	.49	.49	.49
Nov. 2	.25	.36	.45	.48	.49	.50	.52	.53	.53	.53	.53	.53
Wichita Falls												
May 2	.25	.35	.45	.49	.55	.81	.89	1.03	1.15	1.27	1.40	1.45
May 23	.35	.60	.82	1.00	1.25	1.75	2.02	2.06	2.07	2.07	2.08	2.10
May 25	.15	.27	.36	.41	.45	.45	.45	.45	.45	.45	.45	.45
June 15	.25	.42	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45
June 18	.20	.30	.40	.50	.63	.73	.73	.73	.73	.73	.73	.73
Aug. 18	.35	.55	.75	1.00	1.35	2.03	2.16	2.26	2.38	2.38	2.38	2.38
Oct. 15	.40	.70	.85	.90	1.17	1.35	1.43	1.50	1.66	1.71	1.80	1.93
UTAH												
Milford Airport						None						
Salt Lake City AP												
June 15	.25	.32	.34	.37	.42	.42	.42	.43	.43	.43	.43	.43
VERMONT												
Burlington Airport												
July 23	.49	.67	.83	.95	1.30	1.47	1.49	1.49	1.49	1.49	1.49	1.49
VIRGINIA												
Lynchburg AP												
May 30	.52	.70	.77	.80	.83	.83	.84	.84	.84	.84	.85	.85
July 3	.23	.35	.45	.55	.69	.87	.91	.93	.93	.93	.93	.93
July 20	.23	.28	.36	.45	.57	.78	.92	1.04	1.41	1.53	1.60	1.67
July 24	.21	.30	.36	.38	.67	.71	.71	.71	.71	.71	.71	.71
Norfolk Airport												
Feb. 25	.25	.31	.34	.35	.38	.42	.46	.50	.52	.52	.52	.52
VIRGINIA (Cont'd.)												
Norfolk Airport (Cont'd.)												
May 23	0.36	0.49	0.54	0.54	0.54	0.55	0.55	0.55	0.55	0.55	0.55	0.55
June 1	.57	.66	.83	1.00	1.12	1.18	1.22	1.26	1.30	1.32	1.35	1.39
July 5	.24	.39	.44	.56	.64	.78	.96	.99	1.28	1.47	1.49	1.52
July 6	.30	.37	.38	.38	.39	.39	.39	.39	.43	.54	.93	.94
Aug. 10	.27	.50	.52	.55	.61	.69	.72	.73	.73	.73	.73	.73
Aug. 20	.37	.65	.75	.93	1.10	1.27	1.32	1.35	1.41	1.41	1.45	1.48
Aug. 27	.25	.38	.41	.41	.42	.42	.42	.42	.42	.48	.49	.49
Aug. 31	.34	.63	.85	.98	1.16	1.18	1.18	1.18	1.19	1.19	1.19	1.19
Oct. 17	.21	.38	.53	.61	.86	1.07	1.21	1.36	1.41	1.44	1.53	1.66
Richmond AP												
May 7	.32	.52	.61	.66	.71	.73	.77	.81	.84	.85	.86	.86
May 23	.41	.60	.69	.70	.71	.71	.71	.71	.71	.71	.71	.71
May 30	.22	.31	.33	.33	.35	.38	.41	.45	.46	.46	.46	.46
June 2	.19	.36	.44	.48	.56	.74	.83	.89	.93	.95	.98	1.06
July 5	.41	.72	.90	1.11	1.25	1.37	1.61	1.66	1.66	1.71	2.07	2.11
July 6	.26	.33	.38	.39	.44	.45	.46	.46	.48	.63	.70	.70
July 17	.39	.69	.84	1.03	1.27	1.34	1.36	1.41	1.43	1.43	1.43	1.43
July 20	.37	.64	.83	.91	1.01	1.27	1.61	1.71	1.84	1.85	1.88	1.90
July 24	.43	.60	.68	.68	.73	.81	.89	.90	.90	.90	.92	.93
Aug. 19	.23	.38	.48	.56	.64	.66	.67	.67	.67	.69	.73	.73
Oct. 22	.16	.27	.36	.43	.68	.85	.94	1.00	1.04	1.07	1.19	1.24
Nov. 1	.21	.37	.50	.66	.78	.87	.96	.97	.97	.97	.98	.98
Nov. 1	.22	.43	.53	.60	.74	.99	1.17	1.34	1.35	1.36	1.37	1.38
Dec. 14	.18	.30	.34	.41	.46	.47	.47	.47	.48	.48	.48	.49
Roanoke Airport												
Aug. 16	.21	.41	.62	.80	.85	.87	.90	.93	.96	.97	.97	.97
Sept. 5	.16	.30	.36	.43	.46	.48	.48	.48	.48	.48	.48	.48
WASHINGTON												
Seattle						None						
Spokane Airport						None						
Tatoosh Island												
Oct. 19	.30	.45	.55	.64	.75	.84	.95	1.08	1.19	1.29	1.39	1.52
Walla Walla						None						
Yakima						None						
WEST VIRGINIA												
Charleston AP												
June 16	.17	.22	.26	.43	.55	.58	.59	.60	.60	.60	.60	.60
July 23	.23	.30	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
Aug. 2	.17	.31	.36	.37	.38	.38	.40	.43	.43	.43	.43	.43
Aug. 2	.30	.50	.58	.68	.75	.82	.85	.90	.95	.98	.98	.99
Aug. 14	.22	.35	.37	.39	.43	.46	.46	.48	.48	.50	.52	.61
Sept. 15	.25	.30	.40	.55	.63	.65	.65	.65	.65	.65	.89	.98
Elkins												
June 23	.20	.35	.45	.54	.79	1.09	1.39	1.50	1.60	1.63	1.64	1.65
July 20	.20	.27	.33	.40	.43	.48	.51	.84	.93	.94	.95	.96
July 27	.19	.34	.43	.45	.55	.75	.77	.78	.79	.81	.81	.81
Aug. 14	.40	.53	.65	.70	.80	.84	.91	.97	1.03	1.04	1.05	1.05
Aug. 28	.38	.50	.53	.54	.55	.55	.55	.55	.55	.55	.55	.55
Huntington												
Mar. 7	.20	.30	.32	.37	.38	.40	.41	.45	.52	.60	.63	.65
Mar. 7	.28	.32	.32	.32	.33	.47	.48	.49	.50	.53	.54	.55
May 31	.22	.27	.38	.39	.39	.39	.39	.40	.42	.42	.43	.54
June 18	.45	.63	.81	.83	.86	.86	.86	1.28	1.31	1.31	1.31	1.31
July 9	.25	.40	.42	.50	.75	.76	.77	.77	.77	.77	.77	.77
July 16	.25	.33	.38	.39	.43	.43	.43	.43	.43	.43	.43	.43
Aug. 14	.40	.70	.74	.75	.79	.80	.80	.80	.81	.87	.90	1.02
Aug. 31	.23	.32	.44	.50	.53	.53	.53	.53	.53	.53	.53	.53
Sept. 1	.28	.30	.31	.31	.32	.36	.39	.40	.40	.40	.40	.40
Sept. 14	.34	.35	.37	.54	.63	.63	.63	.63	.63	.63	.63	.63
Sept. 23	.40	.54	.58	.62	.70	.73	.74	.75	.76	.79	.80	.80
Parkersburg												
Apr. 29	.29	.33	.36	.38	.41	.44	.47	.50	.50	.51	.51	.51
May 30	.25	.26	.26	.27	.27	.27	.27	.27	.27	.27	.27	.27
June 21	.29	.40	.55	.65	.71	.91	.94	.95	.95	.95	.95	.95
July 17	.35	.62	.90	.93	.95	.95	.95	.95	.95	.95	.95	.99
Sept. 1	.21	.35	.52	.56	.72	.80	.96	.98	.99	.99	1.04	1.04
Sept. 23	.51	.71	.75	.91	.93	.93	.93	.93	.96	1.01	1.03	1.03
WISCONSIN												
Green Bay AP												
May 29	.16	.30	.42	.46	.54	.63	.63	.65	.65	.69	.73	.74
May 29	.43	.66	.95	1.20	1.53	1.60	1.81	1.91	1.92	1.92	1.92	1.92
June 17	.14	.27	.40	.51	.62	.66	.71	.76	.80	.82	.88	.93
June 22	.23	.45	.55	.62	.75	.81	.82	.82	.82	.82	.82	.82
July 1	.46	.69	.73	.74	.76	.79	.84	.91	1.01	1.02	1.03	1.03
July 11	.39	.42	.42	.42	.42	.42	.42	.42	.42	.42	.45	.47
La Crosse AP												
May 27	.28	.47	.65	.81	1.20	1.65	1.95	2.06	2.08	2.12	2.13	2.13
June 22	.42	.69	.88	.95	1.00	1.07	1.11	1.16	1.26	1.28	1.28	1.28
July 1	.48	.73	.78	.80	.83	.85	.88	.88	.88	.88	.88	.88
Madison Airport												
Apr. 27	.36	.48	.49	.50	.58	.61	.64	.66	.69	.69	.70	.71
May 12	.55	1.09	1.32	1.52	1.57	1.58	1.58	1.58	1.58	1.58	1.58	1.58
June 16	.27	.40	.52	.74	.74	.74	.74	.74	.74	.74	.74	.74
June 17	.22	.41	.57	.63	.89	.92	.92	.92	1.15	1.27	1.31	1.32
July 7	.26	.32	.34	.35	.42	.43	.44	.45	.45	.45	.45	.45
July 12	.25	.36	.36	.37	.47	.50	.50	.50	.50	.50	.50	.50
July 20	.26	.51	.68	.82	.82	.98	.99	.99	.99	.99	.99	.99
July 31	.14	.22	.31	.36	.50	.60	.68	.72	.79	.86	.95	1.00
Aug. 29	.27	.50	.61	.71	.87	.92	.99	1.01	1.22	1.73	1.76	1.76
Milwaukee Airport												
May 12	.22	.32	.35	.37	.39	.39	.39	.39	.39	.39	.39	.39
May 13	.20	.32	.33	.34	.35	.36	.36	.36	.36	.36	.36	.36
June 16	.14	.24	.30	.42	.59	.76	.87	.92	.92	.93	.96	1.32
June 20	.40	.66	.94	1.00	1.20	1.32	1.32	1.32	1.32	1.33	1.36	1.36
July 11	.34	.46	.54	.57	.61	.61	.61	.61	.61	.61	.61	.61
July 12	.22	.30	.33	.34	.34	.34	.35	.36	.36	.36	.36	.36
July 12	.22	.40	.54	.70	.92	1.13	1.15	1.19	1.22	1.37	1.41	1.47

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
WISCONSIN (Cont'd.)												
Milwaukee AP (Cont'd.)												
Aug. 30	0.35	0.68	1.02	1.23	1.50	1.57	1.58	1.58	1.58	1.58	1.58	1.58
WYOMING												
Casper Airport												
Aug. 12	.25	.33	.38	.41	.42	.42	.42	.42	.42	.42	.42	.42
Cheyenne Airport												
May 28	.18	.29	.41	.45	.53	.55	.55	.55	.55	.56	.61	.61
Lander Airport						None						
Sheridan Airport												
May 20	.49	.85	1.11	1.20	1.20	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Aug. 27	.27	.49	.58	.79	.92	.96	.96	.96	.97	.97	.97	.97
ALASKA												
Anchorage Airport						None						
Annette Airport						None						
Cordova Airport						None						
Fairbanks Airport						None						
Juneau Airport												
Aug. 3	.19	.28	.32	.40	.44	.56	.72	.83	.86	.94	1.16	1.35
Yakutat Airport						None						
PUERTO RICO												
San Juan												
Feb. 1	.27	.38	.39	.40	.60	.75	.80	1.06	1.24	1.24	1.24	1.24
Mar. 25	.40	.75	1.06	1.45	2.15	2.86	3.45	4.25	4.60	4.70	4.95	5.01
May 15	.20	.37	.55	.60	.75	.95	1.02	1.12	1.35	1.40	1.67	1.91
May 28	.33	.56	.70	.72	.76	.77	.80	.87	.87	.97	1.14	1.21
May 30	.20	.31	.38	.45	.55	.60	.80	.90	1.04	1.05	1.05	1.05
June 3	.20	.37	.42	.44	.44	.44	.44	.44	.44	.44	.44	.44
June 4	.27	.42	.50	.53	.53	.53	.53	.53	.53	.53	.53	.53
June 5	.37	.65	.82	.98	1.17	1.27	1.37	1.39	1.40	1.40	1.40	1.40
June 15	.25	.47	.60	.67	.81	.85	.90	.93	.94	1.00	2.30	2.50
July 13	.27	.42	.66	.87	1.12	1.78	1.84	1.85	1.88	1.92	1.99	2.48
Aug. 12	.41	.42	.43	.44	.45	.50	.75	.94	1.10	1.25	1.45	1.60
Sept. 3	.35	.42	.42	.43	.44	.44	.44	.44	.44	.44	.44	.44
Sept. 5	.22	.32	.51	.54	.54	.97	.98	1.26	1.27	1.27	1.30	1.30
Oct. 22	.30	.50	.63	.67	.67	.67	.71	.73	.73	.73	.73	.73
Nov. 4	.25	.44	.54	.60	.68	.80	.95	1.04	1.11	1.15	1.18	1.24
San Juan Airport												
Jan. 15	.20	.33	.38	.42	.51	.53	.53	.53	.54	.54	.54	.54
Feb. 1	.34	.59	.74	.80	.93	1.01	1.08	1.10	1.10	1.10	1.15	1.18
Mar. 10	.28	.47	.55	.56	.56	.56	.56	.56	.56	.56	.58	.60
Mar. 25	.20	.34	.46	.57	.77	.98	1.05	1.40	1.53	1.57	1.64	1.70
May 9	.16	.30	.37	.39	.46	.47	.48	.48	.48	.48	.48	.48
May 16	.39	.75	1.08	1.26	1.32	1.33	1.33	1.33	1.33	1.33	1.33	1.33
May 28	.17	.32	.45	.51	.53	.54	.54	.80	.80	.82	1.01	1.08
May 30	.18	.28	.38	.41	.44	.46	.52	.57	.57	.57	.57	.59
June 5	.29	.34	.41	.55	.57	.57	.57	.60	.63	.63	.64	.64
June 15	.19	.33	.38	.49	.69	.79	.94	.97	1.00	1.00	1.05	1.21
June 16	.22	.36	.41	.45	.47	.48	.49	.50	.50	.57	.57	.62
June 17	.22	.36	.45	.60	.64	.78	.81	.81	.84	.85	.89	.92
July 13	.21	.34	.37	.51	.74	.81	.90	1.16	1.24	1.24	1.41	1.56
Aug. 3	.20	.27	.31	.41	.43	.43	.44	.44	.44	.44	.44	.44
Sept. 5	.37	.65	.86	1.05	1.16	1.18	1.18	1.18	1.18	1.18	1.18	1.18
Sept. 30	.27	.47	.64	.75	.90	1.00	1.01	1.01	1.11	1.12	1.12	1.12
Oct. 18	.30	.55	.62	.68	.87	.92	1.23	1.27	1.35	1.40	1.65	1.94
PACIFIC AREA												
Hilo, T.H. AP												
Jan. 12	0.32	0.55	0.66	0.76	1.00	1.23	1.34	1.57	1.67	1.74	1.81	1.89
Feb. 11	.17	.26	.30	.37	.54	.60	.65	.73	.80	.87	.97	1.04
Feb. 16	.25	.40	.50	.63	.85	1.23	1.58	1.80	2.02	2.15	2.35	2.60
Feb. 17	.25	.48	.61	.71	.95	1.34	1.50	1.50	1.54	1.92	2.25	2.27
Feb. 18	.25	.35	.35	.35	.36	.36	.36	.37	.37	.39	.44	.70
Feb. 23	.18	.31	.40	.42	.43	.43	.43	.44	.45	.47	.52	.65
Feb. 25	.40	.47	.66	.70	.73	.81	.84	.85	1.06	1.17	1.18	1.23
Feb. 25	.35	.67	.95	1.21	1.61	2.14	2.70	3.25	3.91	4.27	4.53	4.62
Feb. 26	.14	.23	.31	.34	.49	.69	.94	1.08	1.28	1.48	1.71	1.94
Feb. 26	.32	.50	.53	.54	.55	.56	.57	.58	.59	.93	1.02	1.11
Mar. 18	.17	.26	.38	.42	.43	.50	.67	.89	1.01	1.04	1.06	1.09
Mar. 19	.15	.29	.38	.42	.51	.80	.92	1.20	1.26	1.53	1.61	1.70
Mar. 30	.20	.38	.50	.61	.75	.91	1.09	1.35	1.49	1.68	1.77	1.81
May 6	.30	.43	.61	.76	.94	1.05	1.10	1.17	1.23	1.32	1.38	1.47
May 13	.21	.30	.35	.36	.46	.56	.78	.87	.87	.87	.87	1.02
May 7	.21	.31	.38	.40	.58	.74	.85	1.13	1.26	1.31	1.51	1.68
June 30	.20	.34	.42	.43	.60	.60	.60	.60	.60	.65	.72	.73
Aug. 16	.17	.29	.36	.41	.50	.51	.55	.63	.73	.75	.76	.87
Aug. 17	.31	.55	.80	.92	1.15	1.36	1.73	2.09	2.60	2.98	3.29	3.41
Oct. 15	.16	.24	.34	.43	.62	.79	1.01	1.18	1.28	1.43	1.66	1.90
Oct. 15	.22	.43	.62	.74	.90	1.12	1.18	1.22	1.28	1.28	1.28	1.28
Oct. 25	.20	.30	.32	.32	.32	.32	.32	.34	.34	.42	.42	.43
Nov. 16	.17	.22	.26	.43	.62	.67	.71	.73	.73	.73	1.01	1.33
Nov. 17	.15	.26	.35	.47	.48	.50	.58	.63	.63	.63	.65	.96
Nov. 18	.12	.23	.34	.42	.52	.71	.88	1.18	1.38	1.62	1.85	1.88
Nov. 19	.24	.37	.41	.50	.66	.79	.92	.95	1.05	1.13	1.17	1.22
Nov. 19	.21	.36	.45	.58	.71	.88	1.03	1.14	1.28	1.38	1.52	1.68
Dec. 15	.20	.34	.45	.60	.65	.75	.77	.80	.86	.88	.88	.88
Honolulu, T.H. AP												
Jan. 12	.15	.27	.35	.41	.62	.80	.87	.96	1.18	1.24	1.27	1.29
Nov. 16	.35	.58	.74	1.15	1.29	1.38	1.80	2.44	2.72	2.73	2.80	3.08
Dec. 6	.33	.52	.59	.68	.78	.92	1.01	1.12	1.18	1.29	1.42	1.53
Canton Island												
Apr. 17	.13	.23	.35	.35	.38	.40	.40	.40	.42	.42	.43	.43
May 12	.25	.35	.39	.41	.42	.42	.50	.52	.52	.53	.53	.55
Nov. 23	.38	.48	.49	.69	.90	1.24	1.32	1.37	1.38	1.39	1.43	1.53
Lihue, T.H. AP												
Jan. 11	.26	.42	.54	.62	.74	.84	.91	1.06	1.17	1.29	1.39	1.56
Jan. 24	.65	1.16	1.65	1.93	2.26	2.33	2.36	2.69	3.43	4.04	5.12	5.82
Jan. 25	.26	.36	.37	.37	.40	.41	.41	.41	.41	.42	.44	.44
Feb. 25	.32	.54	.74	.77	.81	.87	.94	1.25	1.40	1.61	1.83	1.99
Mar. 29	.19	.31	.34	.35	.40	.42	.42	.42	.43	.43	.43	.43
Apr. 27	.19	.31	.35	.37	.42	.46	.55	.62	.65	.65	.67	.67
Aug. 10	.33	.34	.35	.37	.38	.38	.39	.39	.39	.39	.39	.39
Sept. 15	.20	.33	.40	.43	.44	.44	.44	.44	.44	.44	.44	.44
Oct. 21	.34	.64	.86	1.00	1.39	1.87	2.12	2.33	2.59	2.72	3.03	3.13
Oct. 23	.35	.56	.69	.87	1.00	1.18	1.39	1.53	1.64	1.80	2.64	2.73
Nov. 30	.15	.28	.38	.38	.39	.40	.41	.41	.45	.51	.61	.79
Wake Island AP												
July 1	.24	.35	.36	.36	.36	.36	.36	.38	.38	.48	.51	.51
July 5	.22	.37	.45	.57	.61	.61	.61	.61	.61	.61	.61	.61
July 13	.45	.66	.91	1.06	1.16	1.19	1.20	1.25	1.32	1.37	1.52	1.62
July 13	.17	.27	.36	.40	.44	.45	.45	.45	.45	.45	.45	.45
July 14	.19	.32	.37	.39	.40	.40	.40	.40	.40	.40	.40	.40
Aug. 15	.20	.28	.38	.42	.48	.49	.49	.56	.64	.64	.64	.64
Sept. 24	.25	.43	.45	.46	.46	.46	.51	.52	.56	.58	.58	.58
Oct. 5	.18	.26	.30	.35	.56	.69	.82	.95	1.07	1.08	1.19	1.50
Nov. 4	.24	.40	.42	.43	.43	.44	.57	.64	.64	.64	.64	.64

SUNSHINE, AMOUNT AND PERCENT

YEAR 1956

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
ALABAMA																										
Birmingham	135	43	114	36	235	63	264	68	300	70	268	62	278	64	295	71	282	76	199	57	224	71	145	47	2739	61
Montgomery	143	45	117	37	227	61	266	68	279	65	270	63	274	63	298	72	259	70	205	58	223	71	176	56	2737	61
ARIZONA																										
Phoenix	273	86	269	84	358	96	341	87	399	93	415	97	390	89	401	97	366	99	342	97	306	98	298	96	4158	93
Prescott	180	57	276	87	354	95	315	80	395	91	395	91	321	73	350	84	346	93	304	87	300	96	270	88	3806	85
Tucson	259	81	283	88	356	96	361	93	419	98	388	91	347	80	359	87	358	97	328	93	300	95	288	92	4046	91
Yuma	247	77	297	93	364	98	360	92	401	93	404	94	387	89	402	97	356	96	333	95	296	94	290	93	4137	93
ARKANSAS																										
Ft. Smith	165	53	136	43	229	62	246	63	310	71	303	70	329	74	349	84	357	96	226	65	198	64	162	53	3010	67
Little Rock	157	50	126	40	244	66	233	60	283	65	296	68	345	78	335	80	343	92	258	74	220	70	136	44	2976	66
CALIFORNIA																										
Eureka (U)	68	23	132	43	215	58	200	50	203	45	308	68	190	41	211	49	223	60	193	56	146	49	127	44	2216	50
Fresno	84	27	251	80	353	95	312	79	344	79	437	100	441	99	419	100	365	98	282	81	298	97	221	73	3807	85
Los Angeles (U)	188	60	249	78	319	86	220	56	232	54	326	75	345	79	309	74	351	95	241	69	301	96	271	88	3352	76
Red Bluff	104	34	226	73	324	88	280	70	355	80	423	94	442	97	421	99	348	93	255	74	280	93	248	85	3706	83
Sacramento	82	27	236	75	329	89	288	73	365	83	437	98	441	98	411	97	339	91	279	80	287	94	213	72	3707	83
San Diego	166	52	235	74	281	76	202	52	233	54	279	65	309	71	273	66	324	87	247	70	285	90	274	88	3108	70
San Francisco (U)	87	28	237	76	294	79	269	68	304	69	393	89	239	53	285	68	279	75	243	70	270	89	254	85	3154	71
COLORADO																										
Denver	192	64	216	70	287	78	248	62	308	69	366	82	336	74	315	74	319	85	276	80	198	66	213	73	3274	73
Grand Junction	145	48	180	58	295	80	224	56	315	71	357	80	350	77	322	76	332	89	245	71	221	73	218	74	3204	72
Pueblo	219	72	256	82	320	86	313	79	353	80	366	82	367	81	326	77	353	95	303	87	241	79	251	85	3668	82
CONNECTICUT																										
Hartford	112	38	134	43	182	49	178	44	243	54	321	70	241	52	249	58	173	46	241	70	132	45	77	27	2283	51
New Haven	136	46	158	51	198	53	218	54	270	60	319	70	282	61	273	64	216	58	256	74	156	52	122	43	2604	57
FLORIDA																										
Apalachicola (U)	215	66	183	57	245	66	251	65	317	75	232	55	266	62	337	82	280	76	303	85	289	90	190	60	3108	70
Jacksonville	236	73	220	68	258	69	267	69	291	69	212	50	312	72	295	72	184	50	106	30	233	73	229	72	2843	64
Key West (U)	226	67	260	79	304	82	272	71	321	78	296	72	343	82	349	87	222	60	283	79	270	82	282	85	3428	77
Lakeland (U)	282	86	247	76	304	82	276	72	310	74	318	76	325	76	288	71	208	56	170	48	255	79	214	66	3197	72
Miami (U)	252	76	239	73	321	86	289	75	316	76	271	66	341	81	291	72	184	49	237	67	273	84	310	95	3324	75
Pensacola (U)	190	59	159	49	228	61	236	61	274	64	206	49	196	45	261	64	214	58	224	63	234	73	158	50	2580	58
Tampa	258	79	237	73	325	87	283	73	350	83	273	66	275	65	276	68	235	64	181	51	257	80	251	78	3201	72
GEORGIA																										
Atlanta	178	56	116	36	206	56	259	66	288	67	261	61	256	58	272	65	251	67	176	50	207	66	180	58	2650	59
Macon	220	69	159	50	230	62	276	71	292	68	280	65	293	67	328	79	256	69	181	51	272	87	217	70	3004	67
Savannah	207	65	180	56	269	72	286	73	290	68	295	69	317	73	314	76	271	73	176	50	242	76	201	64	3048	68
IDAHO																										
Boise	107	37	175	57	268	72	329	82	354	78	398	86	436	93	392	91	354	94	224	66	194	67	112	40	3343	75
Pocatello	98	33	150	49	269	73	270	67	319	70	400	87	397	86	356	83	330	88	199	60	196	67	121	43	3105	70
ILLINOIS																										
Cairo (U)	140	45	113	36	230	62	265	67	297	68	344	78	341	76	337	80	322	86	250	72	205	67	122	41	2966	65
Chicago	142	48	143	47	183	49	205	51	266	59	355	78	283	61	280	65	267	71	267	78	106	36	84	29	2581	58
Moline	142	48	151	49	220	59	230	58	273	61	342	75	307	67	318	74	294	79	268	78	126	42	75	26	2746	61
Peoria	112	38	140	45	240	65	226	57	280	63	328	73	267	58	316	74	292	78	274	79	141	47	72	25	2688	60
Springfield	110	37	143	46	235	64	218	55	331	74	349	78	305	67	305	72	315	84	272	79	143	48	89	30	2815	63
INDIANA																										
Evansville	125	41	120	38	229	62	238	60	303	69	320	72	295	66	289	69	293	78	252	72	170	56	74	25	2708	61
Ft. Wayne	135	45	123	40	166	45	176	44	262	58	306	68	237	52	266	62	265	71	241	70	106	35	72	25	2355	53
Indianapolis	147	49	128	41	266	72	225	57	287	65	314	70	260	57	295	69	299	80	203	59	135	45	97	33	2654	60
IOWA																										
Burlington	172	58	194	63	259	70	259	65	345	77	388	86	348	76	349	82	330	88	320	93	189	64	135	47	3288	73
Des Moines	117	39	199	65	255	69	276	69	286	63	369	81	324	70	303	71	289	77	262	76	161	54	133	46	2974	67
Sioux City	116	40	192	63	263	71	283	70	302	67	374	82	355	76	351	82	297	79	254	74	149	51	143	51	3079	69
KANSAS																										
Concordia (U)	183	61	184	59	287	77	285	72	244	55	390	87	385	85	319	75	339	91	289	84	247	82	217	74	3369	75
Dodge City	169	55	186	59	305	82	335	85	279	63	386	87	345	77	356	84	350	94	303	87	237	78	207	70	3458	77
Topeka	119	39	170	55	257	69	238	60	232	52	316	71	311	69	295	69	311	83	#258	74	192	64	#142	48	2841	63
Wichita	186	61	193	62	287	77	289	73	272	62	325	74	330	74	336	80	347	93	252	73	227	74	179	60	3223	73
KENTUCKY																										
Louisville	165	54	129	41	214	58	230	58	259	59	312	70	339	75	322	76	314	84	242	70	173	57	102	34	2801	63
LOUISIANA																										
New Orleans (U)	176	54	143	44	207	56	225	58	290	68	157	62	248	58	245	60	246	67	251	71	211	66	187	59	2586	60
Shreveport	205	64	148	46	225	60	221	57	321	75	328	77	360	83	331	80	350	94	292	83	236	75	177	57	3194	72
MAINE																										
Portland	123	43	182	60	221	60	243	60	296	65	299	65	299	64	290	67	199	53	248	73	151	52	88	32	2639	59
MARYLAND																										
Baltimore	154	51	166	53	212	57	274	69	266	60	277	62	243	54	316	75	244	65	185	53	141	47	120	41	2598	58
MASSACHUSETTS																										
Blue Hill Observatory	104	37	136	46	166	46	202	52	233	53	268	61	240	54	247	60	175	49	231	70	146	52	103	38	2251	52
Boston	115	39	186	60	211	57	251	62	302	67	331	72	308	67	294	68	227	61	261	76	187	64	133	47	2806	63
Nantucket	89	30	152	49	175	47	252	63	260	58	294	65	289	63	294	69	235	63	245	71	135	46	91	32	2511	56
MICHIGAN																										
Alpena (U)	121	42	156	51	214	58	211	52	271	59	332	71	299	63	276	63	205	54	243	71	62	22	62	23	2452	55
Detroit	99	34	137	44	175	47	198	49	262	58	299	65	252	54	272	63	264	71	256	75	124	42	66	23	2404	54
East Lansing	96	33	142	46	183	50	212	53	252	56	353	77	313	67	293	68	269	72	252	74	72	25	44	15	2481	56
Escanaba (U)	145	51	189	63	252	68	241	59	285	62	287	61	294	62	256	59	212	56	196	58	55	19	66	24	2578	55
Grand Rapids	97	33	152	50	191	52	221	55	267	58	335	73	274	59	218	51	244	65	229	67	89	31	65	23	2382	53
Marquette (U)	71	25	166	55	194	52	235	58	287	62	292	62	291	61	251	57	238	63	242	72	69	24	67	25	2403	54
Sault Ste. Marie	140	50	122	41	197	53	182	45	238	51	239	51	250	52	227	52	137	36	213	63	40	14	31	12	2016	43
MINNESOTA																										
Duluth	168	60	202	67	230	62	233	57	262	56	297	63	274	57	268	61	200	53	234	69	62	22	86	32	2516	56
Minneapolis	132	46	180	59	162	44	190	47	221	48	303	65	278	59	272	63	238	63	238	70	106	37	98	36	2418	53
MISSISSIPPI																										
Jackson	145	46	122	38	210	57	234	60	264	62	271	63	283	65	271	66	283	76	251	71	197	63	147	47	2678	60
Vicksburg (U)	177	55	150	47	236	64	237	61	308	72	304	71	313	72	319	77	320	86	272	77	219	71	154	49	3009	67
MISSOURI																										
Columbia	119	39	127	41	282	76	260	66	340	77	383	86	400	[illegible]	371	88	353	95	268	77	158	52	125	42	3186	71
Kansas City	124	41	169	54	262	71	232	58	199	45	367	82	356	79	361	85	343	92	272	79	173	57	125	42	2983	67

See reference notes at end of table.

SUNSHINE, AMOUNT AND PERCENT

YEAR 195

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
MISSOURI (Cont'd.)																										
St. Louis (U)	130	43	140	45	245	66	223	56	289	65	336	76	289	64	347	82	337	90	281	81	186	62	111	38	2914	[illegible]
Springfield	182	59	147	47	247	66	243	62	282	64	271	62	307	69	340	81	346	93	249	71	195	64	144	48	2953	66
MONTANA																										
Billings	145	51	223	74	271	73	230	57	218	47	378	80	380	80	337	77	313	83	238	70	193	68	169	62	3095	69
Great Falls	277	67	195	65	225	61	218	53	237	51	356	75	393	82	356	81	326	86	298	89	224	80	182	69	3287	71
Havre (U)	152	56	177	60	196	53	237	58	257	54	310	64	325	67	257	58	203	54	209	63	197	71	110	42	2630	59
Helena	137	49	172	57	224	61	253	62	270	58	330	70	364	76	304	69	284	75	196	58	170	60	120	45	2824	63
Missoula	89	32	125	42	225	61	266	65	266	57	306	64	374	78	305	69	276	73	136	40	49	17	88	33	2505	56
NEBRASKA																										
Lincoln (U)	154	52	215	69	306	83	257	64	264	59	387	86	355	78	343	80	314	84	292	85	217	73	196	68	3300	73
North Platte	137	46	182	59	262	71	251	63	282	63	375	83	338	74	304	71	310	83	291	84	211	71	221	77	3164	71
Omaha	108	36	198	64	251	68	253	63	237	53	364	80	321	70	310	72	329	88	272	79	172	58	145	50	2960	66
Valentine	163	56	218	71	285	77	240	60	295	65	377	82	341	73	286	66	286	76	296	86	193	66	193	69	3173	71
NEVADA																										
Ely	139	46	231	74	298	80	249	63	284	64	395	88	345	76	353	83	309	83	226	65	269	89	221	76	3319	74
Las Vegas	217	70	290	92	351	95	335	85	400	92	425	97	382	86	406	97	356	96	306	88	301	98	273	90	4042	91
Reno	218	72	297	95	346	93	353	89	389	87	445	99	403	89	415	98	355	95	262	76	278	93	260	89	4021	90
Winnemucca	100	34	182	59	238	64	225	56	326	50	384	85	392	86	380	89	319	85	182	53	222	75	202	70	3152	68
NEW HAMPSHIRE																										
Concord	119	41	154	50	185	50	208	52	244	54	280	61	242	52	264	61	168	45	247	72	163	56	94	34	2368	52
Mt. Washington Obs.	113	39	84	26	143	38	126	31	194	42	197	42	113	24	127	29	107	28	217	63	125	42	60	21	1606	36
NEW JERSEY																										
Atlantic City (U)	123	41	149	48	171	46	181	46	285	64	295	66	236	52	270	64	205	55	166	48	199	66	112	38	2392	54
Trenton (U)	142	47	143	46	188	51	226	57	300	67	289	64	237	52	276	65	204	55	195	56	149	50	115	40	2464	55
NEW MEXICO																										
Albuquerque	199	64	254	80	343	92	346	88	389	90	354	82	358	81	352	84	352	95	292	83	284	91	261	85	3784	85
NEW YORK																										
Albany	125	43	139	45	211	57	221	55	279	62	339	74	328	71	321	74	228	61	232	68	133	45	55	19	2611	56
Binghamton	92	31	110	36	182	49	204	51	239	53	312	68	251	54	272	63	186	50	205	60	99	33	31	11	2183	49
Buffalo	137	47	118	39	195	53	203	50	262	58	289	63	274	59	255	59	254	68	264	77	105	36	65	23	2422	54
New York (U)	150	50	157	51	199	54	241	60	192	43	305	68	260	57	298	70	230	61	252	73	176	59	137	47	2597	60
Rochester	104	36	110	36	208	56	202	50	261	57	296	64	280	60	256	59	222	59	242	71	137	47	52	19	2372	51
Syracuse	84	29	106	35	202	54	185	46	264	58	319	69	280	60	277	64	218	58	229	67	94	32	20	7	2278	51
NORTH CAROLINA																										
Asheville (U)	128	41	138	44	246	66	283	72	271	62	287	66	272	61	317	76	240	65	186	53	222	72	165	54	2755	62
Charlotte	176	56	134	42	249	67	253	65	255	59	310	71	308	70	283	68	216	58	158	45	202	65	183	60	2727	61
Greensboro	205	66	156	49	237	64	264	67	317	73	295	67	316	71	319	76	242	65	161	46	213	69	186	62	2911	65
Hatteras (R)	116	38	173	54	188	51	282	72	305	70	269	62	351	80	315	76	---	--	---	--	198	64	181	59	----	--
Raleigh	182	59	162	51	236	64	267	68	334	77	330	76	329	74	319	76	237	64	169	48	204	66	169	56	2938	65
Wilmington	189	60	198	62	264	71	283	72	302	70	304	70	318	72	305	73	264	71	161	46	236	76	227	74	3051	68
NORTH DAKOTA																										
Bismarck	161	57	177	59	244	66	265	65	254	54	375	79	327	68	319	73	281	75	266	79	153	54	127	48	2949	65
Devils Lake (U)	160	58	207	70	230	62	286	70	298	63	366	77	342	71	312	71	227	60	234	70	119	43	113	43	2894	65
Fargo	148	53	202	68	238	64	277	68	245	52	260	55	212	44	231	53	191	51	200	59	99	35	123	46	2426	54
Williston (U)	169	61	178	60	204	55	241	59	268	57	326	68	327	68	301	68	277	73	252	75	132	47	121	46	2796	62
OHIO																										
Cincinnatti Obs.	149	49	125	40	184	50	170	43	239	54	356	80	339	75	314	74	262	70	209	60	167	55	101	34	2615	61
Cleveland	64	22	95	31	164	44	191	48	242	54	240	53	224	49	227	53	208	56	236	68	116	39	48	17	2055	45
Columbus	113	38	116	37	182	49	163	41	256	57	276	62	281	62	296	69	292	78	253	73	180	60	75	26	2483	54
Dayton	142	47	120	39	204	55	205	51	254	57	304	68	284	62	295	69	301	81	266	77	163	54	92	32	2630	59
Sandusky (U)	111	37	138	45	203	55	260	65	314	70	310	68	270	59	260	61	225	60	236	69	135	46	60	21	2522	56
Toledo	138	47	131	42	195	53	219	55	287	64	333	73	316	69	288	67	285	76	260	76	124	42	74	26	2650	59
OKLAHOMA																										
Oklahoma City	154	49	162	51	278	75	263	67	305	70	358	82	347	78	376	90	345	93	258	74	247	80	174	57	3267	73
Tulsa	177	57	167	53	268	72	245	62	249	57	282	64	312	70	337	81	343	92	220	63	245	79	168	56	3013	68
OREGON																										
Portland	42	15	47	15	106	29	257	63	255	55	176	37	305	64	225	52	189	50	47	14	115	40	33	12	1797	40
Roseburg	60	21	72	23	148	40	219	54	229	50	266	58	363	78	317	74	295	79	139	41	54	18	51	18	2213	50
PENNSYLVANIA																										
Harrisburg	137	46	140	45	202	55	223	56	317	71	314	70	270	59	309	73	209	56	194	56	154	52	102	35	2571	58
Philadelphia	147	49	141	46	187	51	218	55	273	61	292	65	229	50	273	64	203	54	203	59	170	57	103	37	2444	55
Pittsburgh (U)	69	23	79	25	176	48	173	43	175	39	204	45	219	48	225	53	220	59	187	54	135	45	49	17	1911	43
Pittsburgh	127	42	128	41	281	76	154	39	208	47	314	70	258	56	257	60	275	74	198	57	162	54	55	19	2417	54
Reading (U)	117	39	119	38	186	50	215	54	274	61	267	59	193	42	287	67	176	47	189	55	119	40	97	33	2239	50
Scranton	82	28	101	33	151	41	178	45	220	49	275	61	203	44	234	55	159	43	197	57	125	42	71	25	1996	44
RHODE ISLAND																										
Providence	125	42	161	52	185	50	226	56	265	59	303	67	285	62	269	63	212	57	258	75	168	57	129	45	2586	58
SOUTH CAROLINA																										
Charleston (U)	200	63	207	65	274	74	290	74	325	76	317	74	345	79	328	79	264	71	160	45	273	87	238	76	3221	72
Columbia	195	62	165	52	270	73	299	77	351	81	353	82	355	81	344	83	262	71	191	54	235	75	238	77	3258	73
Greenville	191	61	145	46	257	69	281	72	307	71	290	67	278	63	285	69	226	61	181	52	207	67	168	55	2816	63
SOUTH DAKOTA																										
Huron	141	49	186	61	206	56	246	61	274	60	373	80	355	76	313	72	278	74	269	79	157	54	180	65	2978	67
Rapid City	146	51	169	56	230	62	225	56	201	44	353	76	315	67	265	61	284	76	262	77	165	57	150	54	2765	61
TENNESSEE																										
Chattanooga	112	36	113	36	208	56	253	64	283	65	321	74	297	67	285	68	264	71	183	52	175	56	140	46	2634	58
Knoxville	103	33	101	32	215	58	241	61	273	63	287	66	273	61	270	64	256	69	230	66	171	55	120	40	2540	58
Memphis	155	49	98	31	221	60	258	66	284	65	307	71	373	84	311	75	325	87	256	73	224	72	140	46	2952	66
Nashville	129	42	117	37	275	75	295	75	311	71	341	78	354	79	330	79	319	86	236	67	186	60	116	38	3009	66
TEXAS																										
Abilene	203	64	202	63	265	71	258	66	340	79	337	79	313	72	325	79	350	94	255	72	---	--	---	--	----	--
Amarillo	213	68	214	67	331	89	339	86	347	80	361	83	328	74	354	85	348	94	300	86	284	91	256	84	3675	82
Austin	183	57	172	53	225	61	170	44	281	66	300	71	353	82	313	76	308	83	250	70	210	66	206	65	2971	67
Brownsville	212	64	152	47	224	60	202	53	324	78	299	73	372	88	328	81	250	68	271	76	186	57	151	46	2971	66
Corpus Christi	221	67	192	59	272	73	207	54	360	86	393	94	408	96	368	91	311	84	277	78	261	81	241	75	3511	79
Dallas	177	56	147	46	239	64	234	60	284	66	332	77	367	84	365	88	358	97	245	70	229	73	205	66	3182	71
Del Rio	208	64	173	53	283	76	207	53	256	61	330	78	362	85	359	88	276	75	280	79	222	69	235	74	3191	71
El Paso	229	71	231	72	335	90	337	87	402	94	372	87	333	77	344	83	341	92	325	92	267	84	239	76	3755	84
Galveston (U)	180	55	146	45	170	46	230	59	369	87	379	90	398	93	326	80	329	89	310	87	232	72	187	58	3256	72
Houston (U)	170	52	149	46	172	46	195	50	301	71	326	77	359	84	320	78	311	84	305	86	221	69	202	64	3031	67
Port Arthur	176	54	135	42	177	48	173	45	282	67	278	66	301	70	271	66	302	82	270	76	199	62	148	47	2712	61
San Antonio	198	61	210	65	266	72	217	56	312	74	342	81	372	87	334	82	314	85	278	78	218	68	196	62	3257	73

See reference notes at end of table.

SUNSHINE, AMOUNT AND PERCENT

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
UTAH																										
Salt Lake City	102	34	164	53	266	72	223	56	269	60	415	92	398	87	341	80	317	84	215	62	239	81	174	60	3123	70
VERMONT																										
Burlington	76	27	168	55	208	56	180	45	261	57	283	61	268	57	257	59	222	59	224	66	114	39	78	28	2339	51
VIRGINIA																										
Lynchburg	155	50	146	46	204	55	225	57	279	63	271	61	264	59	283	67	199	53	150	43	136	45	141	47	2453	55
Norfolk	138	45	159	51	187	50	276	70	296	68	307	70	297	66	304	72	256	69	140	40	193	63	157	52	2710	61
Richmond	151	49	161	51	210	57	256	65	332	75	323	73	322	72	310	74	217	58	153	44	141	46	117	39	2693	60
Washington Nat'l. Airport	152	50	174	56	207	56	244	61	292	66	306	69	237	52	264	62	228	61	179	52	156	52	84	29	2523	57
WASHINGTON																										
Seattle (U)	115	41	66	22	140	38	287	70	297	63	138	29	329	68	281	64	175	47	86	25	110	39	53	20	2077	46
Spokane	63	23	77	26	210	57	290	71	295	63	281	59	380	79	327	74	284	75	131	39	102	37	45	17	2485	55
Tatoosh Island (R)	59	22	50	17	108	29	195	48	248	53	134	28	210	43	131	30	151	40	104	31	117	42	45	17	1552	35
Walla Walla (U)	67	24	57	19	163	44	300	73	283	61	*	--	---	--	---	--	346	92	219	65	111	39	75	28	----	--
WEST VIRGINIA																										
Parkersburg (U)	98	32	93	30	146	40	188	47	284	64	297	67	274	60	274	65	189	51	207	60	167	56	78	27	2295	50
WISCONSIN																										
Green Bay	172	60	187	61	215	58	208	52	283	62	319	69	274	58	237	55	242	65	240	70	82	28	66	24	2525	55
Madison	143	49	176	58	240	65	258	64	314	69	403	88	362	78	326	76	286	76	257	75	109	37	89	32	2963	68
Milwaukee	134	46	169	55	192	52	231	57	243	54	334	73	268	58	248	58	276	74	267	78	113	39	79	28	2554	57
WYOMING																										
Cheyenne	169	57	202	65	276	74	214	53	246	55	329	73	269	59	265	62	284	77	253	74	150	50	177	62	2834	63
Lander	183	62	255	83	317	86	271	67	284	63	401	88	300	65	285	66	324	86	254	74	197	68	218	77	3289	74
Sheridan	134	47	149	49	216	58	206	51	223	48	371	80	348	74	286	66	273	73	240	70	169	59	141	52	2756	62
ALASKA																										
Anchorage	115	57	130	49	253	69	222	50	208	38	226	39	218	38	195	40	187	49	129	41	78	36	85	49	2046	46
Juneau	74	33	74	27	134	37	150	35	156	30	172	32	180	33	65	14	139	36	54	17	11	5	43	21	1252	28
Nome	141	83	148	59	167	46	258	56	299	52	407	64	206	34	120	24	69	18	110	37	94	49	66	51	2085	45
PUERTO RICO																										
San Juan	206	60	219	65	280	75	232	62	207	51	254	64	334	82	307	78	310	84	235	65	247	73	193	57	3024	68
PACIFIC AREA																										
Hilo, T. H.	183	53	92	28	148	40	125	33	45	11	133	33	193	47	111	28	122	33	87	24	72	21	160	47	1471	33
Honolulu, T. H.	191	56	162	49	220	59	243	64	299	73	270	67	325	80	311	78	340	93	277	77	216	65	227	68	3081	69
Lihue, T. H.	123	36	94	28	100	27	138	36	86	21	171	42	229	55	234	59	238	65	186	52	150	45	183	55	1932	43

Data from airport unless otherwise specified.
"U" indicates Urban, "R" indicates Rural, sites.
* Data for 1st through 23rd; instrument inoperative from 24th.
# Estimated.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Monthly	Temperature: Extremes: Highest	Temperature: Extremes: Date	Temperature: Extremes: Lowest	Temperature: Extremes: Date	Degree days	Precipitation: Total	Precipitation: Greatest in 24 hrs	Precipitation: Date	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Greatest in 24 hrs	Precipitation: Snow, Sleet: Date	Relative humidity: 1:30a E.S.T.	Relative humidity: 7:30a E.S.T.	Relative humidity: 1:30p E.S.T.	Relative humidity: 7:30p E.S.T.	Wind: Average hourly speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear	Number of days: Sunrise to sunset: Partly cloudy	Number of days: Sunrise to sunset: Cloudy	Number of days: Precipitation .01 inch or more	Number of days: Snow, Sleet 1.0 or more	Number of days: Thunderstorms	Number of days: Heavy fog	Number of days: Max temp: 90° and above	Number of days: Max temp: 32° and below	Number of days: Min temp.: 32° and below	Number of days: Min temp.: Zero and below
ALABAMA																																				
Birmingham	74.8	52.0	63.4	100	Aug. 10+	21	Jan. 14+	2446	53.64	3.02	Apr. 5-6	T	T	Dec. 29+	79	82	52	62	8.1	S	56	SW	Apr. 15	61	5.7	98	126	142	108	0	60	7	71	0	51	0
Mobile	77.6	57.3	67.5	97	Aug. 9+	25	Nov. 23+	1419	73.77	5.79	Sep. 23-24	.0	.0	----	86	87	57	74	9.4	S	--	---	---	--	5.5	120	97	149	106	0	89	46	64	0	16	0
Montgomery	77.1	54.1	65.6	100	Aug. 7	22	Jan. 1	1953	61.32	8.76	Sep. 24-25	.0	.0	----	84	89	53	65	6.8	S	46	SW	Dec. 15	61	5.5	109	120	137	106	0	50	24	88	0	33	0
ARIZONA																																				
Flagstaff	62.1	28.9	45.5	91	Jun. 27	-8	Feb. 17	7088	10.37	2.79	Jun. 29-30	39.7	5.0	Dec. 7+	--	70	33	--	---	--	--	---	---	--	3.5	213	74	79	49	13	41	0	2	12	217	7
Phoenix	84.2	55.4	69.8	110	Jul. 8	27	Dec. 24	1476	2.82	.61	Jul. 13	.0	.0	----	40	51	29	22	5.0	E	‡50	WNW	Mar. 6	93	3.0	236	65	65	24	0	17	4	152	0	11	0
Prescott	71.4	39.9	55.7	100	Jul. 9+	9	Feb. 3	4336	5.75	.82	Jul. 24-25	2.2	1.2	Jan. 16	--	51	27	24	9.4	SSW	65	SW	Feb. 16	85	3.3	207	94	65	42	2	37	4	53	0	138	0
Tucson	83.7	53.8	68.8	109	Jun. 11	25	Feb. 4+	1635	7.04	1 37	Jul. 12-13	2 0	1.0	Apr. 2+	35	44	24	20	7.1	ESE	37	SE	Aug. 12	91	3.4	219	68	79	36	2	32	1	155	0	22	0
Winslow	71.7	38.6	55.2	103	Jul. 9	-5	Feb. 10	4786	5.75	.79	Aug. 15-16	14.2	6.5	Feb. 8	38	48	26	22	8.8	WSW	*45	WSW	Feb. 24	--	3.6	212	70	84	48	4	40	2	90	4	145	3
Yuma	89.9	58.1	74 0	117	Jun. 12	28	Feb 17	897	.30	.20	Jul. 24	.0	.0	----	51	40	21	14	7.7	SSE	43	N	Mar. 12+	93	2.3	263	62	41	5	0	2	1	195	0	3	0
ARKANSAS																																				
Fort Smith	74.7	50.2	62.5	109	Aug. 16	15	Jan. 20	3193	30.68	2.39	Jan. 31-Feb. 1	3.9	3.0	Jan. 18	75	83	52	55	8.1	NE	56	W	Feb. 25	67	4.7	157	94	115	75	1	49	11	105	3	66	0
Little Rock	74.0	52.8	63.4	104	Aug. 17+	23	Nov. 30+	2797	52.34	3.63	Jan. 28-29	2.8	2.0	Jan. 18	74	81	53	58	9.3	SSW	58	SSW	Oct. 30	66	5.1	143	95	128	91	1	58	11	91	3	42	0
Texarkana	76.9	54.4	65.7	104	Aug. 10+	23	Jan. 9	2310	31.44	2.25	Nov. 2-3	1.0	1.0	Jan. 18	--	83	--	--	---	---	--	---	---	--	---	---	---	---	85	1	55	12	106	1	33	0
CALIFORNIA																																				
Bakersfield	77.8	51.1	64.5	109	Jul. 23+	26	Dec. 9	2205	4.40	1.20	Oct. 6	.0	.0	----	56	68	46	36	5.4	NW	*27	NNW	Mar. 31	--	3.3	218	70	78	27	0	3	23	108	0	18	0
Bishop	75.2	36.4	55.8	105	Jun. 28	11	Dec. 21+	4159	4.61	1.47	Apr. 12-13	11.8	8.8	Apr. 12-13	--	--	25	20	---	---	--	---	---	--	2.8	239	80	47	21	3	20	1	104	0	153	0
Blue Canyon	58.3	41.5	49.9	88	Jul 17	9	Mar. 6+	5673	58.41	4.31	Oct. 29-30	258.7	31.4	Feb. 19-20	--	--	47	51	---	---	--	---	---	--	4.3	186	66	114	77	39	16	66	0	15	103	0
Burbank	76.3	51.2	63.8	106	Aug. 23	32	Feb. 17	1525	12.31	4.66	Jan. 25-26	.0	.0	----	67	73	47	43	4.0	S	*30	NNW	Mar. 6+	--	3.8	190	104	72	24	0	2	31	49	0	1	0
Eureka (U)	56.8	45.9	51.4	77	May 16	30	Dec. 7	4905	38.47	2.22	Jan. 14-15	T	T	Dec. 6+	--	--	--	--	6.8	†N	44	S	Feb. 20	50	6.5	87	95	184	106	0	3	33	0	0	6	0
Fresno	75.1	47.7	61.4	107	Jun. 28	25	Dec. 24+	2760	6.64	.75	Jan. 26-27	.0	.0	----	65	80	53	38	6.0	NW	29	S	Jan. 26	85	3.2	221	69	76	43	0	5	39	94	0	39	0
Los Angeles	71.0	54.2	62.6	97	May 16	37	Feb. 17	1435	11.71	6.19	Jan. 25-26	.0	.0	----	76	78	55 b	63	6.8	W	‡51	N	Mar. 6	--	4.3	164	127	75	22	0	1	51	8	0	0	0
Los Angeles (U)	74.6	54.9	64.8	102	Sep. 9	38	Dec. 9+	1236	13.62	6.11	Jan. 25-26	.0	.0	----	70	72	44	51	5.8	†W	36	W	Jan. 16	76	3.6	212	91	63	20	0	1	15	25	0	0	0
Mount Shasta (R)	62.0	35.9	49.0	97	Jul. 23	5	Feb. 1	5980	30.02	3.53	Feb. 20-21	94.0	29.1	Feb. 19-20	65	74	53	46	---	---	--	---	---	--	4.5	174	86	106	74	16	22	10	13	7	136	0
Oakland	65.0	47.1	56.1	94	May 16	30	Dec. 8+	3277	13.14	2.43	Jan. 13-14	.0	.0	----	81	85	68	60	8.1	WNW	*32	SW	Jan. 7	--	4.3	172	101	93	53	0	2	15	5	0	7	0
Red Bluff	75.0	49.8	62.4	112	Jul. 18	25	Dec. 9+	2649	16.49	2.25	Jan. 13-14	T	T	Jan. 25	54	64	44	34	9.1	SSE	61	SE	Feb. 21	83	3.8	200	70	96	54	0	13	8	94	0	27	0
												AP	AP	AP	AP	AP	AP	AP	AP	AP	AP	AP	AP	AP	AP	AP	AP	AP		AP	AP	AP				
Sacramento (U)	73.4	48.3	60.9	106	Jun. 28+	29	Dec. 27+	2560	15.30	1.60	Jan. 13-14	.0	.0	----	70	81	56	41	9.1	SW	52	S	Jan.25	83	3.5	213	74	79	47	0	7	29	64	0	15	0
Sandberg (R)	64.3	46.4	55.4	93	Jul. 22	16	Feb. 16	4237	5.95	2.01	Apr. 11-12	16.5	11.3	Apr. 12	--	--	39	40	---	---	--	---	---	--	3.2	229	61	76	31	3	3	62	16	2	53	0
San Diego	70.8	55.4	63.1	96	Nov. 9+	38	Feb. 17	1338	4.39	1.12	Jan. 26-27	.0	.0	----	75	75	56	59	6.7	WNW	32	S	Apr. 13	70	4.2	185	100	81	25	0	0	37	7	0	0	0
San Francisco	64.9	47.2	56.1	97	Jun. 27	32	Feb. 1	3251	15.60	2.07	Jan. 13-14	.0	.0	----	84	89	69 e	66	9.5	WNW	40	WNW	Oct. 22+	--	4.2	179	98	89	54	0	3	18	4	0	1	0
San Francisco (U)	62.8	50.2	56.5	91	May 16	38	Feb. 16	3097	15.14	3.49	Jan. 13-14	.0	.0	----	--	--	80	--	8.7	†W	34	W	Jun. 14	71	4.1	179	95	92	64	0	5	4	1	0	0	0
Santa Maria	67.7	44.2	56.0	94	Sep. 28	24	Feb. 17	3295	6.83	1.92	Jan. 25-26	.0	.0	----	84	85	56	62	6.7	WNW	*28	NE	Feb. 16	--	4.0	186	106	74	38	0	3	107	5	0	29	0
COLORADO																																				
Alamosa	60.6	23.1	41.9	88	Aug. 10	-17	Feb. 2	8375	3.40	.50	Aug. 18	22.2	7.4	Jan. 16-17	--	69	35	37	---	---	--	---	---	--	4.0	180	120	66	48	9	40	7	0	24	230	50
Colorado Springs	64.1	34.5	49.3	95	Jun. 29	-11	Mar. 12+	6157	10.93	.82	Jul. 30	43.2	8.4	Jan. 28-29	55	58	33	37	11.0	NNW	*43	SW	May 26+	--	4.6	151	118	97	75	11	50	22	21	23	178	7
Denver	65.1	37.8	51.5	96	Jun. 13	-5	Feb. 2	5609	13.72	1.64	Jul. 30-31	61.7	11.4	Nov. 18-19	52	58	32	35	12.1	SSW	49	W	Mar. 27	73	4.9	138	124	104	67	18	37	11	31	23	152	4
Grand Junction	66.1	40.4	53.3	98	Jun. 13	-2	Dec. 10	5428	4.41	.64	Jan. 16	25 5	5.4	Feb. 15-16	42	50	34	30	9.4	ESE	56	SW	Jun. 15	72	4.4	173	89	104	47	10	32	5	65	18	144	2

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T.	7:30p E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
COLORADO (Cont'd.)																																				
Pueblo	68.6	37.0	52.8	101	Jun. 29	-17	Feb. 3	5511	6.66	0.84	Apr. 14	38.6	7.3	Jan. 16-17	54	65	34	33	8.4	W	55	NW	Mar. 27	82	4.4	161	116	89	58	9	33	6	76	18	159	14
CONNECTICUT																																				
Bridgeport	59.2	42.8	51.0	95	July 2	8	Jan. 2	5682	40.44	2.23	Oct. 6-7	27.0	11.0	Mar. 18-19	--	77	59	71	---	---	--	---	---	--	6.2	101	106	159	130	5	28	21	6	13	106	0
Hartford	58.3	38.3	48.3	97	Jun. 14	1	Mar. 18+	6566	41.55	1.86	Jun. 2-3	78.4	14.0	Mar. 19	82	80	58	70	10.6	N	50	NE	Mar. 16	51	6.5	80	112	174	155	17	20	48	10	25	149	0
New Haven	57.8	41.4	49.6	94	Jul. 2	6	Jan. 2	6040	45.40	1.69	Jul. 5	47.1	13.2	Mar. 18-19	--	80	62	--	7.2	---	34	SW	Nov. 21+	57	6.4	92	105	169	157	13	34	22	3	20	121	0
DELAWARE																																				
Wilmington	63.0	44.4	53.7	96	Jun. 14+	14	Jan. 28+	4976	47.85	3.83	Nov. 1-2	22.1	7.7	Mar. 18-19	82	80	58	71	9.6	NW	46	WNW	Feb. 25	--	6.5	79	114	173	148	7	36	39	16	10	98	0
DIST. OF COLUMBIA																																				
Washington (U)	65.7	48.7	57.2	97	Aug. 31+	18	Jan. 28	4072	38.20	2.20	July 4-5	8.0	3.3	Jan. 19-20	AP 76	AP 75	AP 55	AP 63	7.4	AP S	38	NW	Feb. 25	57	6.4	AP 85	AP 110	AP 171	134	2	24	AP 17	33	2	61	0
Washington	64.7	47.9	56.3	95	Jun. 13	20	Nov. 24+	4261	35.20	1.96	July 4-5	8.7	2.6	Jan. 19-20	76	75	55	63	9.8	S	57	NW	Feb. 25	57	6.4	85	110	171	133	4	25	17	23	5	71	0
FLORIDA																																				
Apalachicola (U)	75.8	61.7	68.8	99	Aug. 8	30	Jan. 9	1134	46.23	5.26	Sep. 23-24	.0	.0	----	85	87	66	77	7 6	---	37	S	Sep. 24	70	4.5	164	104	98	92	0	70	29	20	0	3	0
Daytona Beach	80.3	58.8	69.6	99	Aug. 7	28	Dec. 30	1020	31.36	3.05	Oct. 15-16	.0	.0	----	86	85	56	75	10.0	SSW	39	WSW	Apr. 11	--	5.2	123	133	110	94	0	72	48	65	0	11	0
Fort Myers	84.0	61.3	72.7	97	Aug. 4+	33	Jan. 15	496	39.85	3.48	July 4-5	.0	0	----	91	89	54	77	8.3	E	38	WNW	Feb. 11	--	4.8	132	158	76	90	0	106	21	112	0	0	0
Jacksonville	80.2	59.0	69.6	100	Aug. 7	27	Jan. 9	1141	51.08	6.66	Oct. 15-16	.0	.0	----	83	86	51	71	9.2	SW	49	N	Jun. 26	64	5.3	126	123	117	95	0	57	37	90	0	10	0
Key West (U)	84.6	71.7	78.2	97	Aug. 26	51	Jan. 15	44	20.46	2.04	Sep. 27	.0	.0	----	--	81	64	75	8.1	†E	28	NE	Oct. 14	77	4.9	123	179	64	77	0	56	0	101	0	0	0
Lakeland (U)	81.8	62.5	72.2	96	Aug. 5+	32	Jan. 9	602	45.12	3.68	Sep. 17-18	.0	.0	----	--	--	--	--	6.7	†W	--	---	---	72	5.0	117	169	80	98	0	94	27	87	0	1	0
Miami (U)	80.1	68.4	74.3	94	Aug. 15	39	Jan. 14	279	33.75	2.67	Apr. 9-10	.0	.0	----	AP 83	AP 83	AP 57	AP 73	12.1	†S	60	†NE	Oct. 14	75	4.3	157	146	63	102	0	68	1	14	0	0	0
Miami Beach	80.9	70.6	75.8	98	Aug. 15	42	Jan. 14	154	26.65	2.09	Apr. 10-11	.0	.0	----	--	--	--	--	---	---	--	---	---	--	--	102	180	84	111	0	---	---	12	0	0	0
Orlando	82.6	60.5	71.6	97	Aug. 5+	31	Jan. 9	727	43.91	5.63	Oct. 15-16	.0	.0	----	89	88	53	71	8.7	S	50	NNE	Apr. 25	--	5.0	116	156	94	102	0	71	35	104	0	3	0
Pensacola (U)	75.7	60.6	68.2	101	Aug. 7	30	Nov. 23+	1288	66.39	8.51	Sep. 23-24	.0	.0	----	AP 85	AP 85	AP 59	AP 73	AP 9.5	AP SSE	40	NE	Sep. 24	58	--	---	---	---	111	0	64	---	30	0	7	0
Tallahassee	78.1	56.2	67.2	98	Aug. 7	23	Nov. 28+	1451	53.91	4.09	Sep. 24	.0	.0	----	88	88	54	73	6.1	NW	--	---	---	--	5.6	111	123	132	108	0	87	60	71	0	22	0
Tampa	81.4	61.9	71.7	94	Jul. 21	32	Jan. 14	650	28.89	1.89	May 8	.0	.0	----	86	86	54	73	9.3	ENE	43	WNW	Mar. 16	72	5.1	130	128	108	90	0	89	30	62	0	1	0
West Palm Beach	83.0	65.9	74.5	97	Aug. 7	31	Jan. 9	359	38.40	3.47	Sep. 8	.0	.0	----	84	81	59	75	11.2	ESE	51	ESE	Aug. 17	--	5.3	101	167	98	107	0	72	6	76	0	1	0
GEORGIA																																				
Athens	73.5	50.9	62.2	99	Jul. 28	20	Jan. 14	2692	45.71	5.34	Sep. 25	T	T	Dec. 29+	82	85	54	67	9.6	NW	40	SW	Feb. 25	--	5.6	120	116	130	102	0	56	36	66	0	50	0
Atlanta	73.1	53.3	63.2	98	Aug. 6	23	Jan. 9	2461	45.59	5.46	Sep. 24-25	T	T	Dec. 29+	78	83	54	63	11.6	NW	68	†SW	Apr. 15	59	5.6	116	109	141	115	0	44	29	58	0	37	0
Augusta	77.2	51.7	64.5	104	Aug. 6	17	Jan. 15	2240	32.85	2.70	Mar. 15-16	T	T	Jan. 22	84	85	52	69	7.1	W	46	WNW	July 15	--	5.7	112	112	142	91	0	65	26	92	0	55	0
Columbus	76.7	52.6	64.7	100	Aug. 11	19	Nov. 23	2157	43.78	4.41	Dec. 23-24	T	T	Nov. 27+	--	86	53	68	---	---	--	---	---	--	5.7	114	102	150	105	0	62	22	88	0	47	0
Macon	77.9	53.9	65.9	100	Aug. 12+	23	Nov. 28	1911	44.50	4.60	Sep. 24-25	.0	.0	----	79	83	48	61	9.3	WNW	57	†S	Apr. 15	67	5.4	123	113	130	112	0	65	28	100	0	30	0
Rome	74.0	48.3	61.2	101	Aug. 6	17	Dec. 1	2979	50.10	2.97	Aug. 18-19	T	T	Dec. 29+	--	86	52	69	---	---	--	---	---	--	5.9	106	110	150	119	0	83	21	78	0	80	0
Savannah	77.8	55.2	66.5	98	Jul. 18	23	Jan. 9	1686	43.16	3.24	Sep. 24-25	.0	.0	----	85	87	52	72	9.1	SW	43	SW	Sep. 24	68	5.4	117	123	126	87	0	54	44	75	0	[illegible]	0
IDAHO																																				
Boise	61.8	38.6	50.2	106	Jul. 9	-6	Feb. 1	6047	11.82	1.06	Apr. 26	24.7	4.0	Jan. 29-30	63	71	52	47	9.0	SE	47	W	May 26	75	5.3	143	86	137	90	11	16	22	36	28	143	5
Idaho Falls 46 W (R)	57.4	26.6	42.0	96	Jul. 10+	-30	Jan. 31	8565	5.81	.74	Oct. 27	26.4	4.4	Jan. 25-26	--	--	--	--	7.7	WSW	[d] 41	WSW	Mar. 26	--	---	---	---	---	72	7	19	---	24	64	209	37
Idaho Falls 42 NW (R)	58.1	25.4	41.8	100	Jul. 20	-35	Feb. 1	8654	4.37	.43	Oct. 26-27	----	---	----	--	--	--	--	8.6	---	[d] 50	---	Mar. 3	--	---	---	---	---	58	---	---	---	28	67	217	43
Lewiston	61.8	39.6	50.7	104	Aug. 14	-10	Feb. 1	5737	16.08	1.72	Jun. 15-16	30.1	7.5	Feb. 22-23	--	77	58	51	---	---	--	---	---	--	6.6	91	82	193	96	12	20	21	35	23	113	5
Pocatello	59.4	33.3	46.4	98	Jul. 10+	-27	Feb. 1	7146	8.59	.65	Jan. 14-15	40.3	5.0	Jan. 25	62	73	53	46	11.7	SW	61	S	Apr. 7	70	5.5	133	83	150	78	13	33	17	29	45	166	12

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

YEAR 1956

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min. temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T.	7:30p E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
ILLINOIS Cairo	70.0	51.2	60.6	103	Aug. 5+	17	Jan. 16	3482	40.22	2.89	Nov. 20-21	7.1	5.1	Jan. 18	--	82	59	--	8.8	†SW	56	SW	Feb. 25	65	4.8	156	94	116	114	2	49	4	64	5	50	0
Chicago	60.5	43.2	51.9	103	July 1	2	Jan. 22	5767	22.23	1.57	Aug. 29+	28.3	8.3	Feb. 11	73	76	55	61	9.3	W	46	SW	Mar. 10	58	6.4	86	120	160	115	9	39	21	21	33	126	0
Moline	61.3	39.6	50.5	103	July 1	-10	Jan. 21	6219	20.20	2.32	July 7-8	19.3	3.0	Feb. 1-2	76	81	56	60	11.2	W	69	SW	Apr. 3	61	5.9	108	96	162	101	8	50	20	27	40	146	6
Peoria	62.3	42.4	52.4	99	July 1	1	Jan. 23	5646	25.62	3.62	May 27-28	23.4	6.8	Dec. 8-9	--	80	56	60	11.7	S	65	W	Aug. 13	60	5.9	109	108	149	95	7	47	24	21	37	132	0
Springfield	64.0	43.1	53.6	97	July 27+	-1	Jan. 31	5324	31.21	4.79	Jul.31- Aug.1	22.4	3.1	Feb. 10-11	75	81	55	60	11.8	SSW	54	SW	Jun. 26	63	5.8	110	103	153	120	10	57	20	27	27	129	1
INDIANA Evansville	67.8	45.8	56.8	100	Aug. 5	2	Jan. 26	4323	34.31	2.16	Feb. 1-2	8.6	4.2	Jan. 18-19	80	82	55	62	9.2	SSW	59	W	Feb. 25	61	5.6	119	106	141	118	3	51	16	44	8	97	0
Fort Wayne	60.9	40.7	50.8	99	July 27	-1	Jan. 24	5986	31.92	2.08	May 30-31	42.1	4.6	Jan. 18-19	80	83	57	66	11.5	SW	54	SW	Nov. 15	53	6.6	68	119	179	133	15	53	24	17	34	140	2
Indianapolis	62.7	43.1	52.9	96	Aug. 5	-3	Jan. 31	5293	34.64	2.14	Apr. 2-3	31.1	5.2	Jan. 18-19	79	81	58	65	11.4	SW	60	W	Apr. 7	60	6.3	92	100	174	119	11	56	22	13	24	125	1
South Bend	59.7	40.0	49.9	99	July 1	-1	Jan. 23	6247	25.85	2.09	Aug. 12-13	58.1	7.5	Jan. 29-30	81	83	60	68	11.0	SSW	*38	SW	Nov. 21	--	6.7	64	121	181	136	19	52	34	15	39	141	1
IOWA Burlington	62.9	40.7	51.8	103	July 1	-7	Feb. 3	5898	22.87	2.45	Aug. 12-13	22.1	4.7	Feb. 8-9	74	79	54	60	10.3	SSW	56	SW	Apr. 3	73	5.8	97	129	140	99	7	59	13	33	40	142	5
Davenport	60.9	42.2	51.6	100	July 1	-9	Jan. 21	5997	22.12	1.68	July 7-8	20.6	3.0	Dec. 12+	--	--	--	--	---	---	--	---	---	--	---	---	---	---	114	8	50	39	23	42	135	6
Des Moines	61.5	40.0	50.8	103	July 26	-14	Jan. 21	6325	17.07	1.15	Oct. 13	24.2	4.1	Feb. 1	74	80	56	58	12.3	NNW	63	W	Jun. 19	67	6.1	100	102	164	97	9	57	14	37	49	148	7
Dubuque	57.4	36.9	47.2	95	July 15	-20	Jan. 21	7101	24.08	2.51	Aug. 30	24.4	4.8	Feb. 1-2	--	82	58	66	---	---	--	---	---	--	6.3	89	115	162	89	8	49	24	8	63	163	10
Sioux City	61.3	37.8	49.6	102	July 26	-17	Jan. 21	6766	17.76	2.74	July 11	26.9	5.3	Dec. 12	66	75	52	50	14.1	NNW	80	W	May 10	69	5.8	107	123	136	94	9	54	16	47	51	156	18
Waterloo	58.1	36.1	47.1	98	July 26+	-21	Jan. 23+	7277	22.81	2.46	July 30-31	19.4	6.0	Dec. 12	--	--	--	--	12.3	---	--	---	---	--	---	---	---	---	93	5	51	17	19	62	164	16
KANSAS Concordia	67.1	44.0	55.6	109	Jun. 30	-3	Feb. 3+	5[illegible]71	12.83	1.15	Jun. 21-22	20.8	5.2	Jan.31- Feb.1	62	71	48	47	8.3	†N	39	NW	Mar. 27	75	4.8	150	107	109	71	8	43	9	79	29	125	4
Dodge City	69.8	43.5	56.7	105	Aug. 6	-4	Jan. 30	4860	9.97	.96	Oct. 29	20.2	6.0	Jan. 29	57	66	40	39	15.1	SSW	63	S	Jun. 23	77	4.2	171	111	84	57	6	47	20	92	26	137	1
Goodland	66.9	36.7	51.8	104	Aug. 6	-6	Feb. 3	5911	9.19	.93	May 26-27	38.0	6.0	Nov. 1-2	72	42	42	64	12.1	S	*46	NNW	Feb. 28	--	4.7	158	100	108	60	16	45	18	75	27	173	8
Topeka	68.4	43.3	55.9	106	Aug. 16	-6	Feb. 3	5038	25.35	1.88	Apr. 27-28	22.3	3.6	Jan.31 Feb.1	70	76	50	51	11.9	S	63	NE	July 11	63	5.4	121	119	126	87	10	65	15	78	25	131	2
Wichita	70.6	45.9	58.3	107	Aug. 15+	4	Feb. 3+	4576	12.73	1.28	Oct. 29-30	13.6	3.3	Jan. 22-23	65	74	45	47	13.7	NNW	66	NW	July 5	73	4.8	147	116	103	66	6	54	15	100	22	116	0
KENTUCKY Lexington	65.5	45.8	55.7	95	July 27	11	Jan. 9	4455	5[illegible].15	2.40	Mar. 7-8	8.4	2.5	Jan. 25	81	84	60	69	10.6	S	--	---	----	--	6.1	99	99	168	141	3	53	26	17	12	94	0
Louisville	66.7	46.9	56.8	96	Aug. 5+	15	Jan. 24	4177	41.02	2.19	Feb. 1-2	13.8	5.4	Jan. 18-19	79	83	58	64	9.4	SE	59	W	Feb. 25	63	5.[illegible]	112	100	154	129	6	51	21	25	5	77	0
LOUISIANA Baton Rouge	79.4	57.4	68.4	99	Aug 10+	25	Nov. 30	1365	41.22	2.54	Apr. 9-10	.0	.0	----	86	89	56	66	8.6	SSE	--	---	----	--	5.8	108	106	152	103	0	66	35	94	0	19	0
Lake Charles	79.5	59.9	69.7	98	Jul. 17	31	Nov. 30+	1194	39.37	4.30	Dec. 21-22	.0	.0	----	85	88	57	67	7.4	S	*32	SSE	Dec. 22	--	5.4	120	106	140	81	0	54	36	95	0	5	0
New Orleans (U)	78.4	63.1	70.8	97	Aug. 8	35	Jan. 13	979	69.96	7.65	Sep. 23-24	.0	.0	----	80	84	[illegible]1	67	6.4	---	41	NE	Sep. 24	60	5.3	113	142	111	100	0	64	17	78	0	0	0
Shreveport	78.2	55.6	66.9	103	Sep. 19+	26	Nov. 30	1967	34.01	2.65	Apr. 5	T	T	Jan. 18	74	84	51	54	9.3	S	--	---	----	72	4.9	147	100	119	83	0	57	19	109	0	27	0
MAINE Caribou	47.0	28.4	37.7	91	Jun. 14	-17	Dec. 31	9928	30.75	1.40	Jun. 14-15	101.2	10.6	Dec. 29-30+	82	80	62	73	10.5	NW	*52	SW	Mar. 12	--	7.0	61	110	195	175	35	22	22	1	102	207	34
Portland	54.3	33.5	43.9	94	Jun. 15+	-9	Feb. 4+	7854	39.41	1.83	Nov. 26	150.1	8.3	Mar. 24	82	77	59	73	8.8	W	44	NE	Jan. 8	59	6.1	106	95	165	154	38	18	56	2	41	179	13
MARYLAND Baltimore	64.4	45.3	54.9	97	Jul. 2+	14	Jan. 25	4670	39.50	4.26	Jul. 20	16.8	6.0	Jan. 19-20	81	80	59	69	9 8	WNW	68	W	Feb. 25	58	6.3	80	124	162	126	5	30	42	32	9	89	0
Frederick	63.4	42.1	52.8	96	July 2+	2	Jan. 28	5238	40.79	3.28	July 20	19.7	5.7	Jan. 19-20	--	--	62	--	---	---	--	---	----	--	---	---	---	---	134	6	7	2	20	9	125	0
MASSACHUSETTS Blue Hill Obs.	56.6	3[illegible].4	47.2	93	Jun. 14	0	Jan. 2	6886	59.24	3.08	Jan. 8-9	121.6	19.5	Mar. 19-20	80	76	60	70	14.8	WNW	55	NW	Jun. 13	52	6.2	92	119	155	153	21	23	136	5	31	137	1

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T.	7:30p E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
MASSACHUSETTS (Cont'd.)																																				
Boston	58.2	43.1	50.7	97	Jun. 13	5	Jan. 1	5870	47.39	2.33	Oct. 23	72.6	13.3	Mar. 19-20	75	73	58	68	15.1	SW	*58	ENE	Apr. 8+	63	6.3	93	109	164	142	18	17	25	11	20	96	0
Nantucket	55.2	42.5	48.9	87	Jun 16	12	Dec. 30	6011	45.24	3.38	Aug. 6-7	42.6	11.2	Mar. 19	86	82	72	84	13.2	SW	73	N	Mar. 17	56	6.7	77	101	188	134	12	22	98	0	16	94	0
Pittsfield	53.7	34.2	44.0	90	Jun. 14	-10	Jan. 2	7854	41.71	1.67	Sep. 2	121.7	9.0	Mar. 16-17	--	--	--	--	---	---	--	---	----	--	---	--	---	---	167	31	24	---	1	77	175	6
Worcester	55.2	37.7	46.5	93	Jun. 14	-1	Jan. 2	7137	37.98	1.79	Jun. 3	96.7	10.2	Apr. 8	80	77	59	72	13.4	W	76	WNW	Mar. 9+	--	---	93	110	163	140	26	16	87	4	49	155	2
MICHIGAN																																				
Alpena	50.6	35.4	43.0	94	Jun. 13	2	Feb. 4	8134	22.42	1.12	July 20-21	59.5	4.8	Feb. 6	--	85	70	77	10.3	---	42	†SW	Nov. 21+	55	6.5	84	115	167	160	22	28	39	2	78	168	0
Detroit	57.8	41.3	49.6	96	Jun. 13	7	Jan. 23	6266	32.80	3.65	Aug. 4	47.7	5.3	Mar. 23	80	80	61	69	10.0	N	51	NW	Apr. 28+	54	6.8	72	98	196	133	18	47	18	7	45	130	0
Detroit (Willow Run)	58.6	40.1	49.4	97	Jun. 13	6	Jan. 23+	6340	31.43	3.13	Jun. 17-18	47.1	7.2	Mar. 23-24	80	82	57	67	11.3	SW	*44	W	Mar. 11	--	6.8	73	101	192	132	15	52	42	9	41	138	0
East Lansing	57.8	39.1	48.5	[illegible]5	Jun. 13	8	Jan. 24+	6626	27.48	1.90	Apr. 28-29	46.0	6.3	Mar. 23-24	--	80	58	--	5.0	†SW	26	†W	Nov. 16	56	---	--	---	---	147	15	44	15	8	49	143	0
Escanaba	49.5	33.9	41.7	94	Jun. 12	-14	Jan. 21	8553	24.29	1.79	Jun. 13	52.2	9.3	Mar. 7-8	--	--	--	--	10.2	---	49	N	Mar. 11	54	6.6	74	120	172	125	16	27	24	1	83	168	10
Flint	56.2	37.1	46.7	93	Jun. 13	-4	Jan. 24	7120	35.54	2.42	Aug. 4	41.5	4.2	Jan. 30	82	82	60	70	9.4	S	*81	NW	May 12	--	6.8	70	101	195	150	13	53	36	4	56	153	6
Grand Rapids	57.2	38.3	47.8	94	Jun. 13	-3	Feb. 23	6810	27.08	4.10	May 9	63.7	8.4	Mar. 23	82	83	61	68	9.7	W	52	NW	Mar. 6	53	7.1	65	87	214	135	18	46	26	7	49	154	2
Marquette	49.4	34.6	42.0	99	Jun. 13	-5	Jan. 21	8477	26.80	2.14	July 8-9	99.6	8.9	Nov. 21	--	76	66	72	8.1	---	38	†SW	Dec. 18	54	7.3	55	98	213	148	33	23	18	3	96	172	2
Muskegon	55.6	38.8	47.2	94	Jun. 11	1	Dec. 13+	68[illegible]0	24.51	1.83	May 5-6	67.7	7.7	Dec. 12-13	--	82	64	71	---	---	--	---	---	--	6.6	82	101	183	142	23	50	30	1	48	151	0
Sault Ste. Marie	47.8	30.4	39.1	90	Jun. 13	-11	Dec. 30+	[illegible]435	34.16	[illegible]	July 13	97.3	8.8	Jan. 28-2[illegible]	87	86	70	78	9.0	WNW	35	N	Mar. 11	43	7.0	62	114	190	164	32	27	62	1	106	196	18
MINNESOTA																																				
Duluth	47.5	28.2	37.9	90	Jun. 12+	-22	Jan. 20	9935	24.70	1.45	Aug. 3	68.0	6.7	Jan. 28	AP 81	AP 84	AP 63	AP 67	AP 13.3	AP WNW	AP 61	S	Oct. 13	AP 56	AP 6.8	AP 68	AP 111	AP 187	123	19	33	57	3	109	192	43
International Falls	47.8	23.7	35.8	98	Jun. 11	-26	Dec. 12+	10735	18.33	.87	July 25-26	71.5	6.2	Apr. 6-7	77	79	59	64	11.3	SE	*30	WSW	Feb. 24	--	6.7	71	105	190	145	25	36	26	3	114	213	70
Minneapolis	54.6	35.6	45.1	100	Jun. 13	-18	Jan. 20	7899	26.75	3.22	Aug. 2-3	31.0	5.4	Mar. 27-28	77	81	60	62	11.6	NW	47	NW	Dec. 11+	53	5.9	107	101	158	111	6	38	7	11	85	160	25
Rochester	54.7	[illegible]2.8	43.8	96	Jun. 13	-24	Jan. 23	8262	28.54	2.53	Aug. 28-29	47.3	10.9	Mar. 10-11	81	83	61	66	9.8	WNW	--	---	---	--	6.1	93	117	156	114	13	49	20	15	82	173	36
St. Cloud	52.5	30.0	41.3	97	Jun. 11	-25	Jan. 23	8971	30.4[illegible]	4.62	Aug. 2-3	40.7	6.7	Nov. 15	82	84	61	66	7.3	NW	63	W	Jun. 30	--	6.1	98	111	157	106	13	46	17	7	95	183	50
MISSISSIPPI																																				
Jackson	76.[illegible]	53.2	65.1	99	Aug. 9	19	Jan. 14	2100	46.77	2.97	Jun. 13	.0	.0	----	82	87	54	63	7.0	S	38	E	July 5	60	5.3	125	106	135	113	0	81	12	90	0	39	0
Meridian	77.9	51.9	64.9	100	Aug. 10+	18	Nov. 30	2098	40.20	3.60	Mar. 15-16	.0	.0	----	87	90	53	65	---	---	--	---	---	--	4.9	145	109	112	96	0	55	14	94	0	48	0
Vicksburg (U)	76.0	57.0	66.5	97	Aug. 17+	24	Jan. 13	1823	44.82	3.73	Apr. 4-5	.0	.0	----	--	--	--	--	8.2	†SW	34	E	Feb. 8	67	5.3	117	121	128	92	0	63	8	80	0	17	0
MISSOURI																																				
Columbia	67.3	44.6	56.0	101	Aug. 8+	3	Jan. 31	4786	26.54	3.23	July 2-3	20.5	4.8	Jan. 29	72	79	51	55	10.1	SSE	56	NW	Apr. 7	71	5.4	130	100	136	[illegible]8	7	59	18	60	22	109	0
Kansas City	67.8	47.4	57.6	104	Aug. 16	4	Feb. 3+	4635	25.92	1.77	Apr. 28	24.9	4.0	Jan. 29	64	71	50	49	11.7	S	56	W	May 22	67	5.4	120	120	126	87	11	46	6	71	23	101	0
St. Joseph	66.4	43.1	54.8	103	July 27	-6	Feb. 3	5306	21.99	2.11	Nov. 4-5	16.9	3.1	Feb. 5-6	--	--	--	--	11.7	S	*52	SSW	Aug. 28	--	5.4	128	100	138	87	8	65	13	69	36	134	2
St. Louis	66.7	49.0	57.9	100	Aug. 18	8	Jan. 16	4260	33.66	1.90	July 3-4	21.0	5.0	Jan. 29-30	AP 70	AP 76	AP 52	AP 56	11.3	S	61	NW	Feb. 25	65	5.3	134	111	121	117	8	73	9	41	18	89	0
Springfield	67.7	46.1	56.9	103	Aug. 17	2	Jan. 16	4435	28.72	2.76	May 14	16.3	3.2	Jan. 24	77	82	56	61	13.3	S	52	NE	May 30	66	5.3	133	98	135	96	6	56	17	56	18	108	0
MONTANA																																				
Billings	59.4	35.7	47.6	102	Jul. 24	-22	Feb. 16	6892	10.58	.64	Jul. 6	58.1	5.5	May 3	58	66	50	46	12.4	SW	61	NW	Mar. 3	69	5.7	109	123	134	84	22	32	13	28	43	160	17
Butte	52.7	24.0	38.4	90	Jul. 23	-36	Feb. 16	9665	10.50	.85	Aug. 16	31.4	5.0	Dec. 4	--	--	--	--	6.7	NW	*47	WNW	Mar. 26	--	6.0	98	109	159	97	14	50	7	1	63	223	43
Glasgow	53.8	29.1	41.5	99	Jul. 24	-33	Feb. 16	8937	9.19	.94	Jul. 3	19.5	5.0	May 5	68	75	54	51	9.9	ESE	*53	NW	Dec. 10	--	6.2	96	104	166	66	6	27	7	17	79	191	49
Great Falls	56.2	34.7	45.5	94	Jul. 24+	-23	Feb. 16+	7405	10.76	.97	Jun. 15-16	39.6	4.9	May 1-2	58	63	45	43	15.9	SW	82	SW	Dec. 10	71	5.9	107	103	156	83	13	27	12	15	41	156	23
Havre (U)	56.1	31.2	43.7	98	Jul. 24+	-32	Feb. 16	8122	9.33	1.09	Jun. 14-15	27.2	4.9	Dec. 16	66	73	51	47	8.5	†SW	42	W	Dec. 10	59	5.9	111	103	152	81	8	17	5	24	58	180	37

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

YEAR 1956

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max. temp		Min. temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs.	Date	Total	Greatest in 24 hrs.	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T.	7:30p E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
MONTANA (Cont'd.)																																				
Helena	56.2	30.7	43.5	95	Jul. 20	-31	Feb. 1	8011	9.13	1.00	Jun. 15-16	32.8	5.3	Jan. 15-16	63	72	52	47	8.5	W	50	S	July 13	63	6.1	91	120	155	90	12	39	3	14	49	185	24
Kalispell	53.7	31.6	42.7	91	Aug. 23+	-25	Feb. 16	8190	17.07	1.99	Jun. 15-16	53.7	5.0	Jan. 22-23	--	--	59	--	---	---	--	---	---	--	6.7	76	92	198	132	17	33	---	8	62	172	17
Miles City	59.1	33.4	46.3	105	Jul. 24	-26	Jan. 31	7596	9.55	1.19	May 9-10	16.5	3.0	Nov. 3	--	--	--	--	11.3	WNW	*46	W	Dec. 10+	--	5.7	105	121	140	84	8	36	5	38	51	170	37
Missoula	56.1	32.1	44.1	96	Jul. 24	-22	Feb. 1	7753	15.16	1.53	Apr. 24	43.5	6.3	Feb. 22-23	71	81	57	51	6.1	W	58	SW	Aug. 15	56	6.8	82	85	199	127	14	26	21	21	55	175	12
NEBRASKA																																				
Grand Island	63.0	38.8	50.9	102	Jul. 26	-13	Jan. 18	6328	13.63	1.37	Jun. 25-26	20.9	4.2	Jan. 16-17	70	77	52	53	13.3	SSE	--	---	---	--	5.0	146	104	116	77	9	51	15	47	42	159	6
Lincoln (U)	64.6	42.6	53.6	105	Jul. 27	-3	Jan. 16	5660	23.83	3.58	Sep. 4-5	24.2	4.6	Nov. 20	--	--	--	--	11.0	S	64	SW	Aug. 30	73	5.0	138	115	113	87	8	53	3	60	35	128	5
Norfolk	61.1	36.6	48.9	105	July 26	-17	Jan. 18	6917	16.36	1.47	Jun. 5-6	22.6	3.3	Jan.31- Feb.1	--	78	53	54	---	---	--	---	---	--	5.7	106	116	144	85	9	62	7	42	48	166	23
North Platte	63.7	34.8	49.3	100	July 26	-13	Feb. 2	6562	16.90	2.89	Jun. 16-17	27.9	7.7	Apr. 3	74	82	50	51	10.0	SE	72	SW	Oct. 29	71	5.1	138	113	115	81	8	44	6	44	32	183	12
Omaha	63.6	41.3	52.5	106	July 26	-8	Jan. 19	5939	23.27	2.09	July 7	20.0	5.1	Nov. 20	69	74	52	52	12.0	SSE	57	NW	July 7+	66	5.4	118	120	128	83	7	48	14	51	38	140	9
Scottsbluff	63.7	34.1	48.9	101	Jun. 13	-12	Mar. 12	6509	10.02	1.85	July 2-3	35.2	7.2	Nov. 1-2	73	43	44	65	10.8	WNW	*43	WNW	Mar. 8+	--	5.1	146	102	118	64	9	36	6	36	29	183	12
Valentine	61.2	33.4	47.3	104	July 26	-19	Feb. 2	7229	11.74	1.21	Aug. 10-11+	23.3	3.2	Apr. 28	--	--	--	--	11.2	---	65	†NW	Aug. 10	71	5.4	123	112	131	75	11	49	6	39	47	190	21
NEVADA																																				
Elko	61.7	27.9	44.8	98	July 9	-22	Feb. 1	7485	10.04	.90	Apr. 27-28	37.3	7.0	Jan. 25	64	75	47	40	4.9	WSW	*48	WSW	Apr. 7	--	4.6	172	79	115	64	11	21	6	35	27	207	21
Ely	61.3	26.8	44.1	93	Jun. 29+	-18	Feb. 1	7641	6.36	.65	Sep. 20-21	43.5	10.4	Feb. 23-24	52	61	36	33	11.4	S	50	SE	Jan. 7	74	4.4	165	104	97	54	13	27	1	8	28	213	21
Las Vegas	80.7	51.6	66.2	114	Jun. 28+	16	Dec. 9	2533	2.04	1.32	July 24	T	T	Oct. 31	23	30	17	13	10.6	SW	*50	NNW	Mar. 6	91	2.5	254	65	47	11	0	10	0	141	0	60	0
Reno	65.3	30.6	48.0	99	Jun. 28+	-9	Feb. 2	6348	7.09	1.08	Jan. 24-25	27.4	12.0	Jan. 24-25	61	75	42	33	6.1	WNW	59	SSW	Jan. 4	90	4.0	191	96	79	41	7	12	10	31	10	177	7
Winnemucca	64.9	30.6	47.8	99	July 19	-16	Dec. 8	6612	7.29	.67	Jan. 13-14	13.5	2.8	Dec. 4-5	58	68	42	35	7.7	W	56	W	Jan. 7	68	4.4	168	88	110	61	6	14	2	47	11	193	8
NEW HAMPSHIRE																																				
Concord	56.0	32.8	44.4	96	Jun. 15+	-15	Feb. 4	7774	36.75	1.63	Sep. 2	128.4	10.1	Dec. 14-15	85	81	57	71	6.4	NNW	42	SW	Sep. 14	52	6.2	94	108	164	141	30	15	63	7	45	194	12
Mt. Washington Obs.	32.7	19.8	26.3	66	Jun. 14	-33	Dec. 30	14086	81.53	2.71	Aug. 31	267.1	15.6	Mar. 16-17	90	88	87	88	32.7	W	140	W	Dec. 30	36	7.7	49	74	243	224	77	13	323	0	176	252	53
NEW JERSEY																																				
Atlantic City (U)	59.8	48.1	54.0	95	Jun. 13	15	Feb. 22	4724	43.58	2.96	Oct. 17-18	17.8	9.8	Mar. 18-19	--	80	70	77	15.9	SW	68	NW	Sep. 17	54	6.4	91	101	174	133	4	29	29	3	3	60	0
Newark	61.4	44.8	53.1	99	Jun. 14	12	Jan. 2	5167	42.26	2.20	Oct,Nov. 31 & 1	35.5	17.6	Mar. 18-19	76	76	57	66	10.1	NNE	40	W	Feb. 25	--	6.4	85	124	157	142	7	28	23	14	9	95	0
Trenton (U)	61.7	45.4	53.6	96	Jun. 14	14	Jan. 2	5019	43.65	2.05	Jun. 2-3	33.1	11.5	Mar. 18-19	--	--	--	--	9.3	S	43	W	Feb. 25	55	6.1	87	128	151	138	10	38	---	14	13	80	0
NEW MEXICO																																				
Albuquerque	72.0	44.1	58.1	100	July 8+	7	Feb. 3	4153	4.06	.72	July 18-19	7.4	3.5	Feb. 1	37	47	29	23	8.6	SE	65	W	Feb. 24	85	3.4	213	96	57	36	2	29	1	87	3	121	0
Clayton	69.9	38.5	54.2	98	Jun. 25	0	Jan. 29	4838	11.92	2.90	Aug. 18-19	4.5	1.8	Mar. 15	--	59	33	34	---	---	--	---	---	--	3.9	189	99	78	45	1	46	6	50	13	158	1
Raton	67.5	31.8	49.7	95	Aug. 10	-4	Dec. 9	5905	8.02	1.36	July 17-18	10.4	3.0	Jan. 28-29	--	61	[illegible]	31	---	---	--	---	---	--	4.2	166	122	78	53	4	68	4	25	10	188	5
Roswell	77.5	43.1	60.3	104	July 16	3	Feb. 6	3535	4.35	.80	Feb. 1-2	16.1	7.5	Feb. 1-2	44	58	30	27	9.7	---	65	W	Apr. 2+	--	3.5	208	92	66	33	4	34	2	133	4	116	0
NEW YORK																																				
Albany	56.2	36.6	46.4	95	Jun. 14	-7	Feb. 4+	7203	35.18	2.23	Sep. 23-24	106.7	15.9	Mar. 16-17	82 AP	81 AP	58 AP	70 AP	8.3 AP	S AP	43 AP	NW AP	Feb. 25	56 AP	6.8 AP	66 AP	114 AP	186 AP	144	25	22 AP	26 AP	6	45	162	7
Binghamton (U)	57.1	39.0	48.1	95	Jun. 14	-3	Feb. 4	6587	38.32	1.49	July 5	64.9	9.4	Mar. 16	83	83	64	73	11.5	NW	66	NW	Feb. 25	49	7.5	39	107	220	182	22	37	50	4	38	135	3
Buffalo	56.1	39.6	47.9	90	July 1+	6	Dec. 30	6642	41.93	2.05	Dec. 26-27	110.7	16.0	Dec. 26-27	80	80	63	73	12.7	SW	57	SW	Mar. 11	54	7.1	50	108	208	177	30	36	20	3	47	139	0
New York	61.1	47.2	54.2	99	Jun. 14	15	Dec. 30+	4872	41.21	3.30	Oct. 31	28.9	8.6	Mar. 18-19	72	71	56	64	13.4	---	64	N	Jan. 7	--	6.4	82	130	154	147	5	33	11	13	11	72	0
New York (U)	60.3	46.5	53.4	96	Jun. 14	14	Dec. 30	5038	40.58	2.21	Oct. 31	27.3	13.2	Mar. 18-19	[a] 71	75	[b] 61	65	13.1	†NW	61	NW	Dec. 18	60	6.0	99	123	144	140	7	28	15	6	8	78	0
New York (Central Pk.)	60.7	46.2	53.5	99	Jun. 14	14	Feb. 22+	5036	36.25	2.68	Oct.31- Nov.1	30.1	11.0	Mar. 18-19	--	75	60	66	9.5	†W	42	NE	Apr. 7	58	5.9	78	180	108	138	6	---	---	11	11	78	0
Rochester	55.5	38.1	46.8	92	July 1+	0	Mar. 18+	7006	34.40	1.20	July 8-9+	114.2	15.9	Mar. 16-17	85	84	64	74	12.2	WSW	66	W	Feb. 25	51	6.9	57	125	184	174	37	39	14	5	51	147	2

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs.	Date	Total	Greatest in 24 hrs	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T	7:30P E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
NEW YORK (Cont'd.)																																				
Syracuse	55.9	38.2	47.1	92	Jun. 15+	-7	Jan. 2	6933	42.01	3.90	Aug. 30-31	124.5	9.6	Mar. 14-15	79	79	61	70	8.5	WSW	57	W	Feb. 25	51	6.8	63	108	195	186	45	37	8	6	54	148	5
NORTH CAROLINA																																				
Asheville (U)	67.2	46.3	56.8	91	Aug. 13+	17	Jan. 9	3864	38.38	3.27	Sep. 5-6	6.9	3.0	Jan. 23-24	--	--	--	--	7.9	†NW	35	NW	Mar. 8	62	5.8	100	122	144	129	4	58	46	8	7	86	0
Charlotte	73.2	50.4	61.8	102	Aug. 13+	19	Nov. 25+	2858	37.13	3.15	Sep. 25-26	.5	.5	Jan. 24	80	83	52	65	9.1	SSW	52	†SW	Apr. 7	61	5.8	110	110	146	113	1	45	25	75	0	60	0
Greensboro	69.4	47.2	58.3	97	Aug. 13	16	Nov. 25	3753	44.05	3.84	Sep. 26-27	3.1	2.5	Jan. 23-24	81	82	52	66	8.9	SW	51	W	Feb. 25	65	6.0	106	99	161	112	1	45	32	53	0	84	0
Hatteras (R)	67.8	57.3	62.6	87	Sep. 4+	27	Jan. 8	2396	51.18	3.16	July 7	1.1	.8	Jan. 9	83	81	72	81	14.3	S	54	SW	Feb. 28	--	6.1	97	105	164	108	0	52	17	0	0	6	0
Raleigh	70.9	48.9	59.9	97	Sep. 16+	21	Jan. 22+	3312	39.88	3.03	Jun. 1-2	2.0	2.0	Jan. 23	81	83	53	68	9.2	*S	35	NW	July 28	65	5.8	106	113	147	110	1	52	32	51	0	71	0
Wilmington	74.1	53.7	63.9	97	Aug. 6	24	Nov. 28	2256	43.89	2.54	Oct. 16-17	.8	.8	Jan. 10	--	84	57	75	11.6	N	66	SW	Feb. 25	68	5.3	116	127	123	106	1	46	17	54	0	44	0
Winston-Salem	69.5	48.7	59.1	98	Aug. 13	16	Nov. 25	3566	42.66	5.69	Sep. 26-27	5.3	2.5	Jan. 23-24	77	78	52	63	8.8	*SW	46	WSW	Feb. 25	--	5.8	114	97	155	114	3	43	26	55	0	67	0
NORTH DAKOTA																																				
Bismarck	52.9	28.9	40.9	9[illegible]	Jun. 10	-28	Feb. 17	9144	16.86	1.34	Aug. 30-31	32.3	4.9	Mar. 27-28	7[illegible]	82	57	60	11.5	WNW	61	NW	Dec. 10	66	6.1	98	113	155	103	11	38	9	9	84	193	54
Devils Lake	47.5	27.0	37.3	93	Jun. 10	-26	Feb. 17	10345	21.16	3.41	Jun. 5-6	62.0	13.4	Mar. 27-28	--	84	65	67	8.6	†N	42	†N	Aug. 16	65	6.1	93	113	160	104	19	17	12	6	118	195	60
Fargo	50.6	29.6	40.1	99	Jun. 12	-26	Feb. 21	9482	16.95	1.55	July 16-17	27.3	7.0	Mar. 27-28	77	81	61	62	15.1	N	66	N	Nov. 25	54	6.3	88	107	171	92	10	28	11	9	107	187	55
Williston	52.4	30.3	41.4	99	Jun. 10+	-24	Dec. 6	8970	11.20	2.53	Jun. 18	15.2	4.1	Mar. 9-10	--	77	53	53	7.3	†SE	47	†NW	Dec. 10	62	6.5	84	99	183	92	5	19	4	11	83	182	43
OHIO																																				
Akron	58.4	39.6	49.0	91	Jun. 13	2	Jan. 23	6273	47.06	2.70	May 26-27	48.7	6.4	Dec. 9	83	83	62	73	11.5	SW	--	---	---	--	7.0	65	103	198	164	16	57	36	4	42	147	0
Cincinnati (Abbe Obs.)	64.4	45.8	55.1	96	Aug. 5	10	Jan. 26	4631	39.78	2.56	May 27-28	29.3	8.5	Jan. 18-19	AP 76	AP 80	AP 58	AP 64	5.9	†S	38	SW	Mar. 1	61	AP 6.7	82	86	198	137	8	50	AP 32	19	12	91	0
Cleveland	59.5	42.3	50.9	93	July 1	6	Jan. 23	5776	38.95	1.76	May 11-12	54.5	7.6	Jan. 30	80	81	62	71	13.3	S	65	W	July 8+	45	6.9	60	109	197	176	16	52	24	8	31	129	0
Columbus	63.4	42.8	53.1	96	Aug. 5+	4	Jan. 24	5197	35.93	1.50	May 26-27	28.0	6.7	Mar. 16	81	82	57	67	8.9	SSW	57	W	Feb. 25	54	6.7	66	110	190	145	7	54	32	22	16	112	0
Dayton	61.5	43.3	52.4	97	July 27	4	Jan. 24	5410	32.86	1.65	July 28	28.6	4.8	Mar. 16	77	81	58	66	11.3	S	56	NW	Feb. 25	59	7.0	68	92	206	126	9	50	29	11	31	122	0
Sandusky (U)	59.3	43.5	51.4	96	Jun. 13	5	Jan. 23	5766	34.89	1.75	May 11-12	40.6	5.8	Jan. 30	--	--	--	--	7.8	---	52	NW	Feb. 25	56	6.1	88	126	152	137	16	56	26	13	37	113	0
Toledo	59.3	39.7	49.5	95	July 27+	1	Jan. 23	6296	33.76	2.50	Jun. 16-17	40.2	5.3	Jan. 30	83	85	61	71	10.7	WSW	72	SW	Apr. 3	59	6.6	77	104	185	132	14	53	29	13	39	143	0
Youngstown	58.5	39.2	48.9	92	July 14	3	Jan. 23	6320	4[illegible].58	2.79	Aug. 5	65.6	6.6	Dec. 9	85	85	63	75	10.7	SW	*58	W	Feb. 25	--	7.0	58	108	200	181	16	54	34	4	39	148	0
OKLAHOMA																																				
Oklahoma City	73.2	49.3	61.3	107	Aug. 16+	10	Jan. 19	3639	22.56	2.59	Oct. 14-15	7.8	2.5	Feb. 10	66	73	49	48	14.2	SSE	56	NW	Feb. 24	73	4.2	184	84	98	69	4	49	21	101	10	83	0
Tulsa	73.8	50.8	62.3	109	Aug. 16+	9	Jan. 19	3500	23.24	3.14	May 13-14	4.2	1.5	Jan. 17-18	66	73	48	49	10.7	S	48	E	Sep. 17+	68	4.8	149	108	109	77	3	43	9	106	8	73	0
OREGON																																				
Astoria	56.8	42.5	49.7	89	Jul. 19	20	Feb. 16	5532	76.33	2.79	Jan. 14-15	6.9	2.2	Dec. 6-2+	89	90	79	75	7.2	SE	*40	SSW	Dec. 9+	--	7.6	52	81	233	193	3	13	41	0	0	48	0
Burns (U)	59.8	32.1	46.0	96	Jul. 24+	-18	Feb. 1	7180	12.65	.90	Oct. 25-26	+56.0	7.1	Jan. 26	61	70	52	42	---	---	--	---	---	--	5.1	137	104	125	88	24	21	11	18	25	177	11
Eugene	61.7	40.7	51.2	100	Jul. 19+	16	Feb. 16+	5116	40.50	2.20	Feb. 20-21	10.8	4.0	Dec. 6	--	--	71	61	7.8	---	--	---	---	--	6.7	78	82	206	129	6	3	56	10	5	62	0
Meacham	53.6	33.8	43.7	94	Aug. 22+	-14	Feb. 16+	7852	30.52	2.26	Dec. 10-11	149.4	10.6	Feb. 16-17	--	--	65	63	---	---	--	---	---	--	6.5	91	76	199	143	49	20	20	6	42	174	5
Medford	64.8	40.0	52.4	104	July 18	14	Feb. 16	5049	28.78	2.96	Feb. 20-21	23.3	7.9	Mar. 4-5	75	87	67	50	4.3	WNW	*48	SSE	Aug. 20	--	5.9	124	74	168	99	7	15	54	40	10	89	0
Pendleton	62.3	41.3	51.8	104	July 19	-11	Feb. 1	5486	11.98	1.29	Jan. 14-15	18.9	6.1	Feb. 16-17	64	71	55	49	10.4	SE	*63	WNW	Mar. 2	--	6.0	115	82	169	100	7	13	32	33	32	93	5
Portland (U)	61.4	46.1	53.8	106	July 19	17	Feb. 2	4416	43.21	2.71	Jan. 3-4	21.6	10.5	Jan. 26-27	AP 80	AP 88	AP 75	AP 64	AP 8.5	AP ESE	AP 52	AP S	AP Jan. 4	AP 40	AP 7.2	AP 74	AP 64	AP 228	161	6	AP 9	AP 40	11	6	33	0
Roseburg	63.7	40.5	52.1	101	July 18	13	Feb. 16	4878	37.25	3.24	Feb. 20-21	17.0	8.0	Jan. 6	--	--	70	58	4.5	---	34	SW	Jan. 15	50	6.6	88	79	199	128	2	7	55	21	0	74	0
Salem	62.4	40.8	51.6	106	July 19	12	Jan. 27	5030	39.17	2.91	Jan. 3-4	17.6	5.5	Jan. 26-27	83	90	70	61	7.7	S	*40	SSW	Jan. 4	--	6.8	90	64	212	147	6	9	31	15	5	64	0
Sexton Summit (R)	56.2	39.8	48.0	92	July 18	9	Feb. 16	6350	35.70	2.01	Oct. 29-30	151.9	16.9	Feb. 20-21	--	--	68	61	---	---	--	---	---	--	5.5	142	63	161	132	36	12	163	2	24	105	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T.	7:30p E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
PENNSYLVANIA																																				
Allentown	60.0	40.6	50.3	95	Jun. 13	8	Jan. 2	5902	46.42	2.70	Jun. 23	32.0	8.8	Mar. 18-19	83	82	59	71	10.6	WSW	*58	WSW	Feb. 25	---	6.6	70	125	171	149	9	40	38	10	19	134	0
Erie	56.1	40.5	48.3	91	July 1	6	Jan. 25	6484	43.43	----	-----	82.8	23.0	Nov. 22-23	--	--	--	--	9.3	---	---	---	---	---	7.1	58	100	208	170	23	54	18	1	44	136	0
Harrisburg	61.4	43.8	52.6	95	Jun. 14+	14	Jan. 2	5235	38.12	1.91	Oct. 22-23	31.9	10.3	Mar. 18-19	73	74	54	63	7.6	WNW	59	NW	Feb. 25	58	6.8	69	104	193	147	9	35	21	10	13	100	0
Philadelphia	62.7	45.6	54.2	95	Jun. 15+	17	Feb. 22+	4853	46.00	3.45	Nov. 1-2	19.2	8.3	Mar. 18-19	77	76	55	66	9.9	SW	59	NW	Feb. 25	55	6.8	70	114	182	134	6	33	31	15	8	81	0
Pittsburgh	59.9	42.0	51.0	91	Jun. 14+	9	Jan. 24+	5672	44.69	3.06	Aug. 5	42.9	10.2	Mar. 16-17	80	81	61	69	10.9	WSW	*51	WSW	July 9	54	7.1	51	113	202	172	12	46	26	2	28	123	0
Reading (U)	61.9	45.0	53.5	96	Jun. 13+	17	Nov. 25+	5026	45.54	2.09	Oct. 22-23	19.4	5.8	Mar. 18-19	--	76	--	--	10.2	†NW	58	NW	Sep. 17	50	6.7	63	125	178	150	5	42	6	14	9	90	0
Scranton	57.0	38.5	47.8	92	Jun. 14	5	Dec. 30	6620	31.87	1.47	Aug. 30-31	48.1	8.4	Apr. 7-8	75	78	58	68	8.2	WSW	60	W	Feb. 25	44	7.0	55	123	188	164	13	52	26	3	39	145	0
Williamsport	59.9	40.3	50.1	98	Jun. 13	8	Feb. 4+	5962	44.76	3.46	Nov. 1-2	42.3	7.1	Mar. 16	--	82	58	68	---	---	---	---	---	---	6.9	59	116	191	181	13	---	--	13	18	130	0
RHODE ISLAND																																				
Block Island	55.7	43.2	49.5	88	Jun. 16+	12	Jan. 2	5911	36.58	1.74	July 21-22	37.2	11.0	Mar. 16	--	83	71	--	---	---	---	---	---	---	6.2	89	116	161	122	7	24	72	0	16	87	0
Providence	58.3	40.5	49.4	94	Jun. 15+	3	Jan. 2	6164	42.67	2.54	Oct. 7	56.4	14.7	Mar. 19	79	76	57	71	11.0	SW	*51	SSW	Apr. 16	58	6.1	109	103	154	146	14	24	32	7	19	126	0
SOUTH CAROLINA																																				
Charleston (U)	74.3	59.4	66.9	99	Aug. 6	30	Nov. 25+	1571	35.13	2.51	July 17	0	.0	-----	AP 88	AP 87	AP 56	AP 78	9.9	AP SW	65	E	Apr. 10	72	5.4	139	94	133	91	0	58	25	36	0	5	0
Columbia	76.8	52.7	64.8	104	Aug 6	20	Nov. 25+	2272	38.42	3.66	Apr 10-11	T	T	Mar. 20+	84	85	50	66	7.9	SW	36	WSW	Apr. 16	73	5.4	123	111	132	95	0	56	27	92	0	56	0
Florence	76.1	53.0	64.6	100	Jun. 23	22	Nov. 25	2199	37.79	2.61	Sep. 25-26	T	T	Jan. 24	--	82	50	67	---	---	---	---	---	---	5.3	136	103	127	103	0	56	31	85	0	40	0
Greenville	71.5	51.2	61.4	98	Aug. 13	21	Nov. 25+	2892	54.58	5.79	Sep. 25-26	.1	.1	Jan. 24	74	77	51	59	10.5	NE	56	W	Apr. 7	63	6.0	100	108	158	117	0	61	31	58	0	48	0
Spartanburg	71.8	51.4	61.6	101	Aug. 6	21	Nov. 28+	2883	49.71	5.50	Sep. 25-26	1.0	1.0	Jan. 24	--	--	--	--	8.9	---	52	WSW	Feb. 25	---	---	---	---	---	107	1	44	23	61	0	46	0
SOUTH DAKOTA																																				
Huron	56.5	32.3	44.4	106	Jun. 13	-29	Feb. 17	8287	18.08	4.15	Aug. 2-3	40.2	5.5	Mar. 9-10	79	84	60	61	12.0	SSE	73	NW	July 6	67	5.8	109	112	145	88	14	43	16	27	81	181	41
Rapid City	60.1	35.0	47.6	101	Jun. 11	-12	Dec. 7+	7025	14.50	1.55	July 2-3	45.5	6.2	Nov. 2-3	67	48	50	64	10.1	NNW	49	N	Nov. 2+	62	5.6	114	119	133	94	16	47	16	34	48	173	17
Sioux Falls	57.6	33.2	45.4	101	Jun. 13	-21	Feb. 2	7931	22.74	3.48	Jun. 3-4	47.3	18.9	Mar. 9-10	70	74	51	53	11.4	SSE	*52	WNW	Aug. 12	---	5.8	117	107	142	92	11	53	20	31	73	177	36
TENNESSEE																																				
Bristol	67.9	45.9	56.9	94	Aug. 18	15	Jan. 9	3944	41.13	2.32	Apr. 15	10.0	4.9	Jan. 23-24	--	87	57	66	---	---	---	---	----	---	6.4	88	98	180	138	4	52	31	17	7	89	0
Chattanooga	72.6	49.5	61.1	102	Aug. 13	18	Jan. 1	3019	46.33	2.94	Feb. 2-3	T	T	Dec. 29+	83	87	52	63	6.8	S	57	W	Feb. 25	58	5.8	109	104	153	120	0	62	31	67	0	72	0
Knoxville	70.3	49.9	60.1	97	Aug. 18	17	Jan. 9	3223	47.36	3.76	Dec. 12-13	8.0	5.4	Jan. 23-24	78	82	55	62	8.1	WSW	69	W	Apr. 15	58	6.1	100	99	167	137	3	55	23	43	1	63	0
Memphis	73.3	52.1	62.7	103	Aug. 17+	20	Nov. 30+	2885	44.76	2.65	Apr. 29-30	5.2	5.2	Jan. 23	75	80	53	58	10.5	S	46	S	Feb. 25	66	5.4	130	99	137	91	1	46	13	79	2	49	0
Nashville	71.7	50.0	60.9	101	July 27	14	Jan. 28+	3225	43.94	4.23	Jan. 29-30	5.1	5.0	Jan. 23	79	84	56	63	8.6	S	47	NW	Feb. 17	66	5.8	112	100	154	126	1	64	11	74	2	62	0
Oak Ridge (R)	70.4	49.5	60.0	97	Aug. 18+	14	Jan. 9	3186	67.14	3.74	Apr. 15	6.6	5.6	Jan. 23-24	--	--	--	--	4.9	ENE	---	---	----	---	6.1	101	96	169	133	2	62	40	37	0	62	0
Oak Ridge Area	71.0	48.7	59.9	99	Aug. 18	16	Jan. 9	3288	61.51	4.32	Dec. 12-13	----	---	-----	--	--	--	--	4.6	SSW	---	---	----	---	--	---	---	---	129	---	---	---	55	0	69	0
TEXAS																																				
Abilene	78.8	54.0	66.4	105	Aug. 30	13	Jan. 19	2478	9.78	.93	Apr. 30 - May 1	11.7	4.5	Feb. 9-10	54	65	40	37	12.4	SSE	60	NW	Feb. 24	---	4.0	190	88	88	38	4	35	8	144	4	51	0
Amarillo	72.9	43.5	58.2	99	Sep. 13+	3	Jan. 18	4077	9.94	1.27	Jun. 17	15.7	10.9	Feb. 3-4	54	64	37	35	15.1	S	70	NW	Feb. 24	82	3.9	196	83	87	49	4	44	16	100	10	126	0
Austin	82.2	58.2	70.2	104	Aug. 16+	24	Feb. 5	1475	15.41	2.92	May 1-2	T	T	Feb. 2	67	78	45	44	10.6	S	52	NW	Feb. 17	67	4.7	155	106	105	52	0	29	11	152	1	11	0
Brownsville	82.6	64.1	73.4	96	Jun. 14	34	Feb. 3	475	16.74	3.69	Apr. 23	.0	.0	-----	89	92	59	72	13.3	SSE	45	N	Mar. 7	66	5.1	127	144	95	59	0	20	15	76	0	0	0
Corpus Christi	81.8	62.5	72.2	97	Aug. 19+	31	Mar. 8+	813	21.73	7.19	Apr. 23	.0	.0	-----	85	87	57	70	11.3	SSE	42	N	Mar. 7	79	5.3	134	113	119	52	0	22	22	113	0	5	0
Dallas	79.3	56.8	68.1	109	Aug. 5	15	Jan. 19	2179	21.75	3.29	Apr. 30- May 1	3.7	3.2	Jan. 18	63	74	47	46	11.0	SSE	54	W	Apr. 14	71	4.6	174	86	106	55	1	27	6	137	2	34	0
Del Rio	83.9	58.6	71.3	107	Jun. 15	23	Feb. 4	1349	4.34	2.18	Oct. 18	T	T	Feb. 3+	--	69	43	33	11.1	---	52	NW	Mar. 7	71	4.3	170	112	84	20	0	9	9	166	0	18	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs	Date	Total	Greatest in 24 hrs	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T.	7:30p E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
TEXAS (Cont'd.)																																				
El Paso	77.9	50.9	64.4	102	Jun. 26+	8	Feb. 4	2599	5.44	.87	Feb. 1-2	11.2	7.2	Feb. 2	43	27	22	34	11.8	SSE	57	W	Apr. 2	84	3.4	211	91	64	31	2	26	0	126	2	61	0
Fort Worth	79.2	55.9	67.6	107	Aug. 6+	14	Jan. 19	2290	18.55	2.75	Apr. 30-May 1	4.5	3.8	Jan. 18	61	72	44	43	12.7	S	*50	SE	Aug. 30	--	4.4	177	94	95	56	1	43	6	134	2	38	0
Galveston	75.8	65.8	70.8	91	Sep. 20+	33	Jan. 19	922	21.84	1.96	Dec. 17-18	.0	.0	-----	AP 78	AP 81	AP 67	AP 72	12.3	---	55	W	May 2	72	AP 5.0	AP 141	AP 113	AP 112	67	0	AP 48	AP 27	11	0	0	0
Houston	80.2	62.2	71.2	99	Aug. 10	33	Jan. 19	1053	31.56	3.17	Nov. 14-15	.0	.0	-----	AP 83	AP 87	AP 55	AP 64	9.8	†SE	50	†NE	Oct. 3	67	5.0	143	108	115	88	0	52	16	107	0	0	0
Laredo	86.9	63.1	75.0	106	Jun. 15	29	Feb. 5	748	9.95	2.96	May 15	.0	.0	-----	68	79	46	41	12.4	SE	*55	ESE	July 25	---	4.7	163	107	96	46	0	28	12	190	0	6	0
Lubbock	75.7	45.4	60.6	103	Jun. 16	4	Feb. 6	3494	10.83	1.05	Jun. 17-18	16.8	8.0	Feb. 3-4	56	68	39	36	14.3	S	*58	WSW	Apr. 2	---	3.8	200	97	69	49	5	48	11	122	6	114	0
Midland	78.4	51.0	64.7	106	Jun. 15	9	Feb. 4	2584	9.62	1.52	Aug. 19	2.3	1.3	Feb. 3	49	63	37	31	8.9	SSE	*40	WSW	Feb. 24	---	3.9	196	83	87	36	1	29	7	133	3	64	0
Port Arthur	79.2	59.4	69.3	98	Aug. 4	29	Nov. 27	1243	43.15	6.24	Dec. 21-22	.0	.0	-----	85	88	59	71	11.4	S	65	NW	Oct. 20	61	5.4	121	123	122	88	0	73	33	91	0	8	0
San Angelo	79.5	53.9	66.7	104	Jun. 15	12	Jan. 19	2232	7.41	1.27	Oct. 17-18	4.1	3.1	Jan. 18	53	67	39	34	10.8	S	*48	NW	Apr. 2+	---	3.8	194	92	80	38	1	29	7	159	3	42	0
San Antonio	82.1	58.5	70.3	103	July 16	25	Feb. 4	1353	14.31	2.32	Aug. 20	.0	.0	-----	68	77	45	43	9.5	SSE	43	NE	Dec. 8+	73	4.7	149	115	102	53	0	30	17	148	0	15	0
Victoria	82.3	60.9	71.6	100	Aug. 16+	31	Feb. 3+	1029	17.95	2.87	Oct. 18	.0	0	-----	--	85	52	59	11.3	SSE	‡57	SSE	Sep 2	---	5.2	128	121	117	64	0	28	21	137	0	4	0
Waco	80.8	56.6	68.7	105	Aug. 15	21	Jan. 19	1908	15.15	3.34	May 1	1.3	.9	Jan. 18	63	75	46	44	14.1	S	*43	S	Aug. 30	---	4.9	149	98	119	42	0	36	6	142	1	36	0
Wichita Falls	78.2	53.0	65.6	107	Aug. 30+	12	Jan. 19	2837	21.31	2.64	Oct. 14-15	6.8	3.8	Feb. 10	55	66	42	41	11.4	S	*52	NW	Feb. 24	---	4.0	190	96	80	55	2	49	17	141	5	65	0
UTAH																																				
Milford	66.9	32.5	49.7	101	July 9	-15	Dec. 9	6227	5.06	.73	Jun. 29-30	29.1	5.4	Apr 1-2+	--	63	36	31	----	---	---	---	----	---	4.1	183	89	94	45	10	30	1	66	18	181	11
Salt Lake City	64.6	38.2	51.4	101	July 10+	-3	Dec. 8	5829	12.39	1.06	May 11-12	59.2	10.5	Dec. 5-6	62	67	41	41	9.0	SE	42	SW	Mar. 31	70	4.9	153	91	122	76	17	37	3	61	22	141	5
VERMONT																																				
Burlington	53.0	34.4	43.7	92	Jun. 15+	-12	Jan. 2	8005	31.22	2.09	May 27	96.3	8.0	Feb. 6-7	78	75	58	67	8.3	S	47	W	Feb. 25	51	7.2	51	95	220	160	30	23	13	3	66	172	11
VIRGINIA																																				
Lynchburg	67.1	46.7	56.9	98	July 2	14	Nov. 25	4072	34.54	2.65	July 19-20	3.0	1.2	Jan. 16	--	78	53	65	8.5	SW	41	S	Mar. 8	55	6.1	89	125	152	128	2	40	44	40	2	81	0
Norfolk	68.6	51.5	60.1	97	July 2+	22	Jan. 28	3232	47.45	3.33	Oct. 29-30	.4	.4	Jan. 9	81	80	60	74	10.9	SSW	63	SW	July 9	61	6.1	96	109	161	136	0	47	28	44	1	46	0
Richmond	68.8	47.8	58.3	99	July 2	16	Jan. 28	3781	49.23	4.07	Nov. 1-2	1.1	1.0	Jan. 9	81	81	55	69	8.3	S	39	SW	May 23	60	6.1	91	121	154	129	1	46	24	50	0	76	0
Roanoke	67.7	46.6	57.2	98	July 2	14	Nov. 25	4041	35.83	3.17	Sep. 26-27	5.6	2.4	Feb. 1-2	75	76	51	62	8.4	W	---	---	----	---	6.4	75	125	166	134	2	65	20	54	3	78	0
WASHINGTON																																				
Olympia	59.3	39.4	49.4	100	July 19	7	Feb. 1	5734	51.44	3.83	Dec. 8-9	16.6	2.8	Feb. 16-17	80	88	71	59	7.8	SSW	*55	S	Jan. 5	---	7.5	52	80	234	153	10	5	105	7	3	86	0
Seattle-Tacoma	57.4	42.0	49.7	94	July 19	13	Feb. 16+	5602	36.85	1.93	Dec. 8-9	15.1	4.2	Feb. 14	82	90	77	67	12.2	SW	*51	SW	Mar. 2	---	7.5	52	85	229	150	5	5	48	1	4	59	0
Seattle (U)	58.8	45.8	52.3	94	July 19	17	Feb. 15	4723	32.11	1.18	Dec. 8-9	8.6	4 3	Dec. 4-5	AP 77	AP 85	AP 72	AP 62	9.5	†S	60	SW	Mar. 2	46	7.2	59	87	220	155	2	7	---	1	4	26	0
Spokane	56.6	37.3	47.0	96	Aug. 22+	-12	Feb. 1	6940	12.88	.97	Aug. 25-26	49.5	5.7	Jan. 14-15	69	79	62	55	8.4	SSW	51	SW	Dec. 9	55	6.5	91	91	184	105	20	10	51	17	45	138	6
Stampede Pass (R)	45.3	32.3	38.8	87	Aug. 22	-5	Feb. 15	9545	94.29	7.01	Dec. 9-10	416.0	17.5	Nov. 17-18	--	91	83	80	---	---	---	---	----	---	7.3	76	50	240	200	88	10	229	0	104	189	7
Tatoosh Island (U)	52.1	44.1	48.1	70	July 19+	20	Feb. 15	6071	79.42	3.82	Oct. 19-20	27.0	6.4	Feb. 16-17	87	88	84	83	14.5	E	73	S	Oct. 19	35	7.8	49	66	251	204	9	9	59	0	4	17	0
Walla Walla (U)	62.2	43.8	53.0	103	Aug. 22+	-8	Feb. 1	5195	14.99	1 32	Jan. 14-15	27.0	8.6	Feb. 17	--	-	57	--	----	---	---	---	---	---	6.4	100	74	192	107	10	13	17	33	34	72	3
Yakima	61.7	35.7	48.7	101	July 19	-20	Feb. 1	6376	8.21	1.21	Jun. 9-10	38.9	8.5	Jan. 14-15	70	77	53	47	6.6	WNW	*48	SW	Mar. 3+	---	6.1	112	83	171	55	12	15	19	36	39	145	9
WEST VIRGINIA																																				
Charleston	65.8	45.2	55.5	93	July 2	8	Jan. 18	4352	48.90	2.40	Sep. 15-16	16.9	3.1	Jan. 16	80	82	55	66	6.9	SW	*35	SSW	Sep. 1+	---	7.2	46	118	202	161	8	43	104	11	9	87	0
Elkins	61.7	38.8	50.3	89	Aug. 18	-3	Jan. 28	5666	48.85	1.95	Jun. 23-24	36.7	4.5	Jan. 9-10	--	--	--	--	6.7	WNW	*42	WSW	Apr. 4	---	7.5	40	109	217	186	12	51	78	0	25	142	3
Huntington (U)	67.4	46.2	56.8	95	Aug. 5	14	Nov. 24+	4093	48.82	2.32	Dec. 13-14	11.4	4.1	Jan. 15-16	--	--	--	--	----	---	---	---	---	---	---	---	--	---	140	6	---	---	31	8	77	0
Parkersburg (U)	64.7	44.6	54.7	93	Aug. 5+	10	Nov. 24	4637	44.52	1.74	Mar. 7-8	17.2	4.4	Jan. 15-16	--	--	--	--	5.7	SW	45	NW	Feb. 25	50	6.4	92	111	163	162	4	58	19	10	11	95	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

YEAR 1956

State and Station	Temperature							Degree days	Precipitation						Relative humidity				Wind					Percent of possible sunshine	Average sky cover sunrise to sunset	Number of days										
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset							Max temp		Min temp	
	Daily maximum	Daily minimum	Monthly	Highest	Date	Lowest	Date		Total	Greatest in 24 hrs.	Date	Total	Greatest in 24 hrs	Date	1:30a E.S.T.	7:30a E.S.T.	1:30p E.S.T.	7:30p E.S.T.	Average hourly speed	Prevailing direction	Speed	Direction	Date			Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 or more	Thunderstorms	Heavy fog	90° and above	32° and below	32° and below	Zero and below
WISCONSIN																																				
Green Bay	52.8	32.6	42.7	93	Jun. 13	-16	Jan. 21	8343	27.27	2.73	May 28-29	43.3	9.3	Mar. 10-11	82	82	63	72	10.4	SW	63	NW	July 1	55	6.2	97	99	170	123	16	52	39	2	82	179	25
La Crosse	55.8	36.1	46.0	97	Jun. 13	-19	Jan. 22+	7628	26.26	2.61	May 27-28	47.4	8.5	Mar. 10-11	--	82	60	64	9.0	S	•42	SSW	Apr. 3	--	6.2	90	120	156	102	11	53	29	13	74	158	29
Madison	57.8	36.1	47.0	96	Jun. 10	-11	Dec. 13+	7181	31.51	2.01	May 12-13	35.4	4.9	Mar. 23	80	81	58	65	10.0	NW	47	W	May 12	68	6.3	88	111	167	112	14	50	29	17	60	165	13
Milwaukee	55.9	38.1	47.0	95	Jun. 13+	-6	Jan. 22	7011	28.35	2.11	Apr. 27	37.0	6.6	Mar. 23	78	81	62	69	13.2	WNW	59	W	May 14	57	6.3	86	120	160	118	11	51	44	9	50	150	3
WYOMING																																				
Casper	59.3	33.4	46.4	95	July 24+	-13	Mar. 11	7183	8.93	.75	May 27-28	76.8	9.7	Nov. 2-3	57	62	38	38	14.7	WSW	•81	WSW	Mar. 3	--	5.2	135	101	130	78	23	41	9	22	46	175	18
Cheyenne	59.0	33.3	46.2	94	Jun. 13	-10	Feb. 1	7062	11.40	.85	May 26-27	39.9	8.0	Nov. 2-3	56	59	36	42	14.6	WNW	66	NW	Mar. 27	63	5.1	132	128	106	87	12	51	20	6	44	173	12
Lander	58.6	31.2	44.9	98	July 24	-21	Feb. 2	7678	10.34	1.88	May 28-29	85.5	12.0	Apr. 8	55	62	43	43	6.7	---	56	W	Dec. 10	74	4.9	138	130	98	53	20	25	6	18	48	180	27
Sheridan	59.4	32.0	45.7	102	July 24	-20	Feb. 16+	7414	15.42	2.04	May 27-28	65.4	8.9	Mar 5-6	61	73	48	51	8.3	WNW	57	W	Dec. 10	62	5.5	118	113	135	96	23	41	9	24	48	185	20
PACIFIC AREA																																				
Canton Island	87.6	77.5	82.6	91	Sep. 2+	72	Nov. 23+	0	16.34	2.45	May 9-10	.0	.0	----	76	80	80	65	----	---	---	---	----	--	6.1	88	148	130	73	0	0	0	10	0	0	0
Hilo	80.2	65.2	72.7	88	Nov. 30	57	Feb. 3	0	168.36	10.63	Feb. 25-26	.0	.0	----	85	88	82	69	8.4	WSW	•29	N	Feb. 2	33	7.9	29	94	243	302	0	7	0	0	0	0	0
Honolulu (U)	79.7	70.8	75.3	86	Sep. 23	62	Feb. 12	0	24.95	3.58	Nov. 16-17	.0	.0	----	AP 72	AP 76	AP 72	AP 58	AP 10.8	AP ENE	AP 57	AP NE	AP Mar.29	AP 69	AP 6.3	AP 68	AP 163	AP 135	149	0	AP 7	AP 0	0	0	0	0
Koror (R)	87.0	75.0	81.0	91	Oct. 26	71	Jun. 13	0	179.15	5.47	Jan. 23-24	.0	.0	----	78	89	91	82	----	---	--	---	----	--	9.1	0	53	313	284	0	40	0	17	0	0	0
Lihue	81.5	68.8	75.2	88	Oct. 11	56	Dec. 2	0	56.94	11.09	Jan. 24-25	.0	.0	----	80	84	80	67	10.9	ENE	36	SW	Jan. 12	43	7.0	38	155	173	216	0	16	0	0	0	0	0
Majuro	84.9	77.0	81.0	88	Nov. 28+	72	Aug. 6+	0	173.14	5.39	July 6	.0	.0	----	81	83	84	78	----	---	--	---	----	--	8.1	18	104	244	259	0	23	0	0	0	0	0
Ponape (R)	86.8	73.3	80.1	91	Nov. 28+	69	Aug. 21+	0	206.02	4.83	July 5-6	.0	.0	----	82	92	93	79	----	---	--	---	----	--	8.7	4	75	287	323	0	46	0	33	0	0	0
Truk (Moen Island)	85.4	76.1	80.8	89	Nov. 6+	72	Jun. 8+	0	163.61	5.13	Apr. 9-10	.0	.0	----	79	87	88	80	----	---	--	---	----	--	9.1	2	50	314	304	0	38	0	0	0	0	0
Wake Island	84.4	74.8	79.6	90	Sep. 30+	65	Feb. 10	0	30.16	2.71	Oct. 4-5	.0	0	----	73	78	78	68	15.3	ENE	•40	ENE	Nov. 14	--	5.3	117	152	97	190	0	10	0	2	0	0	0
Yap (R)	87.1	75.4	81.3	93	Nov. 21+	70	July 12	0	145.5[illegible]	5.27	Apr. 17-18	.0	.0	----	77	88	90	79	----	---	--	---	----	--	9.8	1	13	352	273	0	16	0	65	0	0	0
CARIBBEAN																																				
San Juan, P. R. (U)	82.5	73.3	77.9	92	Oct. 14+	66	Feb. 26+	0	69.62	5.26	Mar. 25-26	.0	.0	----	AP 86	AP 82	AP 67	AP 79	AP 9.7	AP ENE	AP 80	AP NE	Aug. 12	AP 68	AP 5.8	AP 72	AP 193	AP 101	209	0	31	0	14	0	0	0
ALASKA																																				
Anchorage	39.3	22.9	31.1	80	July 15	-26	Feb. 12+	12314	16.13	2.06	July 30-31	102.6	12.4	Feb. 8	62	65	61	55	5.6	S	•43	NNE	Feb. 19	46	7.2	69	63	234	112	33	3	22	#6	131	215	79
Annette	49.4	38.5	44.0	81	July 13	2	Feb. 14	7594	149.42	4.75	Apr. 17	72.4	11.7	Mar. 6-7	82	84	77	73	11.6	SE	•46	ENE	Jan. 5	--	8.1	35	66	265	232	19	2	18	#12	22	98	0
Barrow	12.6	1.4	7.0	66	July 10	-51	Jan. 1	21176	4.35	.51	Aug. 6	15.2	1.3	Jan. 6	71	71	70	70	12.0	NE	42	NE	Oct. 13+	--	---	c 54	c 57	c 188	78	1	0	69	#0	278	342	177
Bethel	32.4	17.1	24.8	84	July 13	-42	Mar. 1	14667	14.89	1.31	Aug. 5-6	52.2	11.3	Feb. 14	80	86	82	74	10.3	N	•38	SSW	Sep. 13	--	6.9	81	68	217	132	14	1	21	#13	161	229	122
Cold Bay	39.9	30.4	35.2	68	Aug. 9	-7	Mar. 4	10818	29.75	2.49	Feb. 13-14	46.0	6.0	Apr. 10-11	86	88	87	82	17.6	SSE	•62	SE	Mar. 9	--	8.8	11	53	302	190	12	0	41	#0	97	185	11
Cordova	43.1	26.6	34.9	80	July 14	-24	Mar. 3	10938	78.69	3.55	Nov. 26-27	222.3	14.0	Apr. 9-10	85	--	82	79	----	---	--	---	----	--	7.9	57	41	268	208	53	1	11	#6	72	214	36
Fairbanks	31.6	11.0	21.3	86	July 13	-53	Jan. 5	15974	11.37	.98	Sep. 13-14	71.4	6.3	Nov. 21	68	76	71	61	5.3	N	•29	ESE	Jun. 14	--	7.1	66	89	211	114	24	4	28	#45	166	229	136
Juneau	45.1	31.7	38.4	84	July 14	-11	Mar. 10+	9628	67.97	3.56	Dec. 27-28	173.5	15.1	Dec. 16-17	80	84	75	69	9.0	ESE	54	SE	Nov. 2	28	8.4	41	37	288	232	43	0	12	#13	65	161	18
King Salmon	36.2	18.9	27.6	81	July 14	-34	Mar. 1	13632	19.27	.94	Aug. 5-6	62.4	9 5	Mar. 20	79	83	78	70	11.4	N	•48	SSE	Feb. 14	--	7.2	66	64	236	150	16	1	28	#15	128	235	105
Kotzebue	24.0	9.7	16.9	68	Aug. 16+	-48	Mar. 1	17549	6.91	.98	Aug. 9	54.1	4.0	Nov. 26-27	79	81	80	76	11.6	E	•53	E	Jan. 6	--	6.1	110	76	180	77	23	0	24	#0	203	257	153
McGrath	30.2	11.0	20.6	85	July 14+	-55	Feb. 28	16208	20.56	1.15	Feb 14-15	85.7	11 3	Feb. 14-15	67	74	67	57	4.2	N	•29	S	Sep. 13	--	6.8	87	61	218	145	26	5	9	#28	171	230	134
Nome	29.1	15.5	22.3	71	Jun. 11	-37	Feb. 28	15557	16.87	2.[illegible]8	Aug. 8-9	40.0	4.4	Oct. 24-25	77	78	77	75	9.3	ENE	45	NE	Mar. 19	45	6.4	99	75	192	115	12	1	16	2	186	236	124
Northway	27.5	6.5	17.0	82	July 15+	-64	Dec. 11	17537	8.76	.72	Jun. 26-27	69.3	4.2	Oct. 27-28	65	--	63	54	----	---	--	---	----	--	7.4	54	77	235	109	23	12	15	#23	183	259	153
St. Paul Island	35.5	27.4	31.5	58	Aug. 12+	-13	Mar. 2	12151	21.62	1 33	July 3-4	34.3	3.0	Dec.31 Jan.1k	89	90	90	86	----	---	--	---	----	--	8.6	25	47	294	195	10	0	83	#0	118	224	17
Yakutat	44.0	30.9	37.5	81	Jul. 14	-13	Mar. 3	9987	157.31	7.13	Nov. 27-28	311.7	16.4	Jan. 30-31	88	89	84	79	9.7	ESE	•62	SE	Nov. 22	--	8.4	37	39	290	241	61	0	38	#3	58	190	11

Data from airport unless otherwise indicated.
U indicates Urban, R indicates Rural, sites. Where certain elements are from the airport, these are indicated by AP above each value.
• Data entered in column headed "Fastest Mile" is the fastest observed one minute wind speed and its direction. This station is not equipped with automatic recording wind instruments.
+ Also on earlier dates.
† Wind direction to 8 compass points only.
‡ Peak gust.

# Number of days maximum 70°F or above for Alaskan stations.
a Computed as of midnight local time.
b Computed as of noon local time.
c Sun below horizon November 19 - January 24.
d Maximum hourly average.
e Computed as of 8:00 am local time.
k Dec. 31, 1956 - Jan. 1, 1957.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F)								Normal degree days (1921-1950)		Precipitation (inches)									Relative humidity (percent)						Wind Speed (m.p.h.)			Sunshine (percent of possible)		Annual mean number of days									
		Normal (1921-1950)					Extremes					Normal (1921-1950)			Extremes			Snow, Sleet			January			July			Mean hourly					Sunrise to sunset							Temperature		
		January		July														Mean total		Extreme																			Max.	Min.	
		Daily maximum	Daily minimum	Daily maximum	Daily minimum	Annual	Length, yrs.	Record highest	Record lowest	January	Seasonal	Wettest month	Driest month	Annual	Wettest month	Driest month	Maximum in 24 hours	January	Seasonal	Maximum in 24 hours	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST	January	July	Fastest mile	January	July	Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet, 1.0 inch or more	Thunderstorms	Heavy fog	90° and above	32° and below	Zero and below
ALABAMA							73	112	-18							0.00	20.33																								
Anniston (1952)	599	56.6	34.9	91.2	68.2	62.5	47	105	-3	614	2820	6.09	2.58	52.20	16.25	0.02	6.98	0.9	1.8	11.0	82	65	78	83	57	67	6.8	3.9	54	50	69	143	114	108	120	*	61	6	54	51	*
Birmingham	610	55.5	34.9	90.2	69.0	62.5	61	107	-10	623	2780	6.31	2.71	53.72	20.12	.00	8.84	1.0	1.8	11.0	81	61	66	84	56	68	8.2	5.4	65	45	62	131	116	118	118	*	66	5	59	38	*
Mobile (U) (1952)	10	61.4	44.8	89.8	74.0	68.1	81	103	-1	412	1529	7.94	3.07	62.23	26.67	.00	12.98	.1	.2	6.0	--	--	--	--	--	--	10.1	8.0	98	51	59	110	138	117	119	*	64	15	47	12	*
Mobile	211	62.2	43.2	89.4	72.0	67.3	15	104	11	416	1612	8.97	3.75	67.75	19.29	.05	13.36	.2	.3	3.5	87	63	78	90	64	78	11.6	7.8	--	--	--	113	124	128	123	*	87	29	73	15	0
Montgomery (U)	201	59.1	41.5	90.6	72.4	66.3	c	c	c	483	1954	6.40	2.15	50.93	c	c	c	c	c	c	c	c	c	c	c	c	----	---	c	c	c	c	c	c	c	c	c	c	c	c	c
Montgomery	198	59.7	38.7	91.3	71.0	65.4	84	107	-5	517	2137	6.50	2.36	53.85	20.10	T	9.98	.2	.6	11.0	83	61	67	85	58	68	7.7	5.8	60	51	65	132	118	115	113	*	54	8	71	20	*
ARIZONA							62	127	-33							0.00	5.95																								
Flagstaff	6993	38.9	11.7	79.2	51.1	44.6	7	94	-16	1231	7525	2.60	.53	18.53	5.50	T	3.11	21.2	73.2	22.0	83	58	--	77	36	--	----	---	--	--	--	185	85	95	63	17	45	4	2	207	12
Phoenix (U)	1083	64.3	38.2	103.5	77.5	70.5	--	---	---	425	1492	.96	.06	7.12	----	----	----	----	----	----	--	--	--	--	--	--	----	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Phoenix	1114	64.8	34.5	105.1	75.1	69.4	19	118	17	474	1698	1.00	.06	7.19	5.56	.00	3.07	T	T	.6	75	47	39	53	31	23	4.2	5.9	75	76	83	211	86	68	36	0	19	2	164	21	0
Prescott	5014	50.2	20.4	90.9	61.0	55.2	14	102	-5	921	4533	3.70	.23	16.03	9.61	.00	3.08	7.2	18.9	12.4	71	49	46	60	32	33	7.1	8.0	72	69	72	186	96	83	57	5	47	3	45	134	*
Tucson	2558	63.1	36.3	99.4	73.0	67.6	16	110	16	474	1776	2.15	.21	10.69	7.93	.00	2.73	.5	1.2	3.5	64	40	35	56	33	30	6.8	7.0	59	78	74	193	91	81	49	*	38	*	147	22	0
Winslow	4880	46.2	19.2	92.6	61.8	55.0	25	104	-18	1001	4702	1.62	.29	7.84	2.72	.00	2.12	2.4	8.0	6.5	72	49	42	61	29	29	7.8	9.0	--	--	--	185	95	85	50	2	37	3	70	135	3
Yuma	199	67.2	43.3	107.7	81.5	74.7	6	117	28	318	951	.64	.01	3.40	1.31	.00	.90	.0	.0	.0	56	37	27	51	31	23	7.1	9.9	54	84	90	265	63	37	13	0	6	2	188	3	0
ARKANSAS							66	120	-29							0.00	12.00																								
Fort Smith	458	50.6	29.4	94.2	70.4	62.0	11	111	-9	775	3188	5.06	2.56	41.67	14.01	.06	5.90	2.0	4.2	5.5	82	64	68	87	52	53	8.6	6.4	58	42	73	140	94	131	91	3	62	10	87	69	*
Little Rock	257	51.1	32.4	92.7	71.1	62.4	15	107	-5	719	2982	5.16	2.81	47.53	12.53	T	7.71	2.2	3.2	4.0	80	67	68	85	55	59	9.1	7.2	61	42	69	126	103	136	101	1	59	15	75	46	*
Texarkana	361	56.3	35.5	94.6	71.1	65.1	14	106	-3	600	2362	5.30	2.79	50.74	15.33	.04	6.55	1.5	1.6	4.5	--	--	--	--	--	--	----	---	--	--	--	---	---	---	98	1	65	18	88	39	*
CALIFORNIA							72	134	-45							0.00	26.12																								
Bakersfield	489	57.3	36.5	101.1	67.3	65.0	19	115	21	561	2115	1.16	.01	6.40	4.61	.00	1.68	T	T	T	86	71	59	48	29	19	4.9	7.1	--	--	--	204	83	78	38	0	3	20	110	16	0
Beaumont (U) (1952)	2589	57.4	35.6	94.7	57.4	60.1	13	110	11	574	2840	3.67	.09	17.86	8.63	.00	4.16	1.9	2.4	7.1	63	44	44	63	26	25	8.7	6.8	--	--	--	184	95	86	49	*	9	51	83	32	0
Bishop	4108	53.6	22.2	96.9	54.1	56.0	9	109	-6	840	4222	1.12	.10	5.41	5.03	.00	3.32	5.9	10.0	9.0	47	39	--	19	15	--	----	---	--	--	--	205	86	74	27	3	13	*	100	151	1
Blue Canyon	5280	43.8	28.5	77.7	57.9	50.1	13	93	5	893	5719	9.83	.03	53.87	45.12	.00	9.31	54.9	255.3	38.5	--	67	74	--	30	30	----	---	--	--	--	176	65	124	87	42	10	71	1	107	0
Burbank	699	65.2	39.9	87.3	59.0	62.8	25	111	21	396	1808	3.17	T	13.99	13.84	.00	7.76	.3	.3	4.7	72	55	48	83	50	42	4.3	5.4	--	--	--	188	102	75	39	*	4	35	47	5	0
Eureka (U)	43	53.6	40.8	60.6	52.2	52.3	46	85	22	552	4632	6.20	.09	36.35	13.97	.00	5.83	.2	.2	3.0	87	--	77	92	--	80	7.0	6.9	56	39	52	81	103	181	118	*	4	50	0	4	0
Fresno	331	53.5	35.9	100.1	64.1	63.0	17	111	18	629	2532	1.72	T	9.37	6.73	.00	2.44	T	T	T	93	80	66	61	36	20	4.8	7.2	43	49	98	197	73	95	46	0	5	39	101	26	0
Los Angeles (U)	312	64.6	45.4	83.2	61.7	63.9	16	110	28	328	1451	3.47	T	14.64	12.42	.00	6.11	T	T	.3	63	N46	51	85	N50	54	6.9	5.4	49	71	80	186	107	72	37	0	7	18	15	*	0
Los Angeles	99	63.3	43.0	74.4	60.8	60.9	20	108	23	378	2015	2.85	T	12.47	8.14	.00	6.19	T	T	T	76	57	63	86	66	69	5.9	6.4	62	--	--	136	113	116	37	0	3	54	3	1	0
Mount Shasta (R)	3544	41.4	24.1	84.8	49.5	49.3	14	103	-2	998	5913	5.40	.13	33.89	17.48	.00	4.70	35.1	103.7	37.4	86	78	77	70	37	29	----	---	--	--	--	158	89	118	88	18	13	10	21	139	*
Oakland	3	56.0	38.4	72.0	53.4	56.5	28	102	23	552	3163	3.51	.01	17.74	11.29	.00	3.21	T	T	1.0	86	74	69	88	69	62	5.8	8.4	--	--	--	143	120	102	64	*	2	20	4	7	0
Red Bluff	341	53.3	36.9	98.9	67.4	63.2	78	115	17	617	2546	4.23	.02	21.68	20.71	.00	6.12	1.8	3.0	11.4	85	71	66	50	29	18	6.7	5.7	63	48	95	214	72	79	70	1	5	8	89	17	0
Sacramento (U)	25	52.1	38.3	92.0	58.6	60.9	23	112	22	614	2600	3.43	T	16.44	12.20	.00	3.52	T	T	T	90	82	70	76	46	28	10.5	10.5	70	39	96	204	65	96	59	0	5	34	65	10	0
Sacramento	17	52.4	36.2	92.0	57.2	60.0	16	---	--	642	2822	3.01	T	15.02	----	----	----	.2	.2	4.0	90	81	69	76	46	28	7.3	8.3	70	44	96	225	72	68	---	*	4	21	---	---	--
San Diego	19	64.3	45.5	75.5	63.1	62.4	16	104	29	317	1574	2.57	.01	10.94	7.60	.00	3.07	T	T	T	76	58	60	86	68	65	5.6	6.7	51	67	65	148	124	93	43	0	3	32	3	*	0
San Francisco (U)	52	55.4	44.8	64.4	53.4	56.7	20	97	30	462	3069	4.07	.01	20.63	11.47	.00	3.65	.0	T	T	84	N68	70	92	N75	78	6.8	11.3	47	53	64	134	113	118	68	0	2	7	1	*	0
San Francisco	8	55.8	39.9	69.2	51.5	55.6	29	104	20	530	3421	3.59	.01	17.54	12.30	.00	3.33	.0	T	T	87	77	69	91	70	68	6.9	14.0	62	--	--	160	108	97	62	0	2	22	3	7	0
San Jose (1950)	95	58.0	40.5	80.8	54.5	59.3	50	106	20	487	2410	2.53	T	12.69	12.38	.00	4.56	T	T	1.0	--	--	66	--	--	50	6.6	7.1	43	54	87	210	84	71	59	*	*	23	13	14	0
Sandberg (R)	4517	46.0	33.6	85.1	62.7	55.3	24	102	3	781	4243	2.85	.02	12.51	11.42	.00	4.09	9.7	27.0	38.5	--	58	59	--	25	26	17.9	13.2	--	--	--	210	82	73	40	5	6	84	21	57	0
Santa Catalina (1952)	1568	59.0	46.7	77.0	58.3	60.1	8	102	29	375	2249	2.97	T	12.88	7.81	.00	2.68	.4	.5	2.0	72	65	67	65	58	54	----	---	--	--	--	190	81	94	45	*	*	112	10	*	0
Santa Maria	238	62.7	38.0	72.6	51.7	57.1	14	104	22	453	2934	2.71	.03	13.56	5.88	.00	3.07	T	T	T	82	62	63	93	66	64	7.7	6.3	--	--	--	172	114	79	47	0	2	89	4	16	0
COLORADO							69	118	-60							0.00	8.05																								
Alamosa	7536	36.3	-2.5	81.3	46.8	41.4	11	91	-50	1491	8659	1.10	.17	6.24	1.77	T	1.33	4.4	22.8	7.4	75	58	58	82	37	37	----	---	--	--	--	157	138	70	60	11	46	13	1	227	48
Colorado Springs	6173	40.9	16.6	84.8	57.6	49.1	8	100	-27	1122	6254	2.72	.22	14.28	4.88	T	3.09	4.8	26.5	8.4	53	40	45	67	33	39	10.8	10.3	90	--	--	150	119	96	81	8	57	18	15	164	7
Denver (U)	5221	42.5	20.3	85.9	61.5	51.4	85	105	-29	1042	5673	2.06	.50	13.43	8.57	.00	6.53	5.9	54.6	23.0	54	37	41	55	27	30	7.6	6.9	65	67	68	146	151	68	84	15	42	4	23	137	7
Denver	5292	41.7	15.6	87.2	58.3	49.8	22	104	-30	1125	6132	2.20	.50	14.22	4.92	T	3.43	8.6	55.6	19.4	60	45	50	67	32	34	9.4	8.9	53	67	70	112	137	116	84	17	42	11	35	154	8
Grand Junction	4849	33.8	14.1	92.5	63.8	52.1	10	102	-14	1271	5796	1.20	.45	9.08	2.81	.00	1.16	7.5	29.2	8.6	77	64	64	48	27	22	5.4	9.6	66	53	76	142	107	116	71	10	42	7	55	142	4
Pueblo	4639	44.9	13.8	89.8	59.9	51.5	16	105	-31	1104	5709	1.81	.38	11.89	6.17	T	2.95	5.9	32.1	16.3	67	44	48	73	34	35	7.7	7.8	80	71	76	140	128	97	72	10	46	8	56	158	9
CONNECTICUT							69	105	-32							0.00	12.12																								
Bridgeport	7	36.6	21.8	81.6	63.9	50.5	56	102	-20	1110	5896	4.43	2.83	42.12	18.77	.09	5.84	9.0	35.2	13.8	76	65	70	78	58	72	9.9	7.5	62	--	--	100	120	145	124	5	29	29	3	93	0
Hartford	15	35.4	18.5	83.0	62.3	49.7	c	c	c	1178	6139	3.93	2.70	42.43	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Hartford Bradley Fld.	169	36.1	17.9	85.1	62.0	50.1	52	101	-24	1178	6068	3.81	2.66	40.57	21.87	.18	12.12	10.5	40.2	19.0	73	62	67	78	55	69	8.9	7.4	70	46	62	107	110	148	128	10	28	43	10	120	3
New Haven	6	37.0	21.2	80.1	62.3	49.7	84	101	-15	1113	6026	4.12	3.00	45.10	17.08	.12	8.73	9.6	37.4	28.0	75	65	69	77	64	74	9.2	7.1	62	52	65	125	117	123	131	11	25	28	5	108	2
DELAWARE							64	110	-17							T	7.83																								
Wilmington	78	41.8	34.7	86.7	65.0	54.2	9	102	2	983	4910	5.28	2.99	44.60	12.09	.16	6.24	6.0	17.4	11.9	77	62	70	80	52	69	8.9	7.2	--	--	--	96	107	162	124	5	33	47	24	100	0
DIST. OF COLUMBIA																																									
Silver Hill Obs. (1953)	284	43.4	27.4	84.6	66.2	55.3	2	101	8	918	4539	5.94	2.58	43.91	9.99	.66	3.03	2.4	11.9	7.5	--	--	--	--	--	--	----	---	--	--	--	---	---	---	120	5	37	--	27	44	0
Washington (U)	72	44.0	28.9	87.1	68.4	56.8	85	106	-15	884	4258	4.49	2.72	41.52	17.45	.14	7.31	6.0	19.4	25.0	73	56	64	78	52	64	7.8	5.8	62	46	64	124	118	123	124	6	33	12	27	82	*
Washington Nat'l AP	14	43.8	28.5	86.1	68.4	56.5	15	103	1	893	4333	4.75	2.53	40.57	14.31	.22	6.39	4.4	12.3	8.2	73	57	63	77	53	64	11.1	8.5	78	43	65	103	104	158	116	4	32	15	27	72	0
FLORIDA							67	109	-22							0.00	23.22																								
Apalachicola (U)	13	62.2	48.1	87.4	75.1	68.8	34	102	18	352	1307	7.65	2.45	56.18	27.73	.01	11.71	T	T	.2	87	69	80	84	72	76	8.3	6.7	67	58	64	140	112	113	106	0	76	24	21	4	0
Daytona Beach	31	69.3	49.6	89.8	71.7	70.5	22	102	18	245	868	7.11	2.10	51.18	19.89	.04	9.29	.0	T	T	91	59	82	90	67	82	9.3	7.8	--	--	--	90	155	120	117	0	85	34	64	5	0
Fort Myers	15	75.2	53.9	90.5	73.4	73.9	17	101	31	124	405	9.20	1.21	53.34	16.32	.00	10.85	.0	.0	.0	93	56	80	87	63	83	8.1	6.7	--	--	--	106	158	101	117	0	98	23	123	*	0
Jacksonville (U)	18	65.9	48.7	89.6	73.7	69.8	84	104	10	303	1113	7.89	1.57	52.30	23.32	T	9.86	----	----	----	--	--	--	--	--	--	----	---	--	--	--	---	---	---	122	*	--	--	61	5	0

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) Normal (1921-1950) January Daily maximum	Temperature Normal January Daily minimum	Temperature Normal July Daily maximum	Temperature Normal July Daily minimum	Temperature Normal Annual	Temperature Extremes Length, yrs.	Temperature Extremes Record highest	Temperature Extremes Record lowest	Normal degree days (1921-1950) January	Normal degree days Seasonal	Precipitation (inches) Normal (1921-1950) Wettest month	Precipitation Normal Driest month	Precipitation Normal Annual	Precipitation Extremes Wettest month	Precipitation Extremes Driest month	Precipitation Extremes Maximum in 24 hours	Snow, Sleet Mean total January	Snow, Sleet Mean total Seasonal	Snow, Sleet Extreme Maximum in 24 hours	Relative humidity (percent) January 7:30 a.m. EST	Relative humidity January 1:30 p.m. EST	Relative humidity January 7:30 p.m. EST	Relative humidity July 7:30 a.m. EST	Relative humidity July 1:30 p.m. EST	Relative humidity July 7:30 p.m. EST	Wind Speed (m.p.h.) Mean hourly January	Wind Speed Mean hourly July	Wind Speed Fastest mile	Sunshine (percent of possible) January	Sunshine July	Annual mean number of days Sunrise to sunset Clear	Sunrise to sunset Partly cloudy	Sunrise to sunset Cloudy	Precipitation .01 inch or more	Snow, sleet, 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max. 90° and above	Temperature Min. 32° and below	Temperature Min. Zero and below
FLORIDA (Cont'd.)																																									
Jacksonville	24	66.3	45.4	91.4	72.7	69.3	85	105	10	331	1243	7.64	1.62	52.18	23.32	T	10.17	T	T	1.9	89	56	75	85	57	76	8.8	8.3	76	57	62	123	141	101	122	*	74	35	61	5	0
Key West (U)	9	75.8	65.8	89.1	78.3	77.6	62	97	43	28	77	6.78	1.54	39.57	23.56	T	19.88	.0	.0	.0	84	68	78	78	68	74	10.3	8.2	91	68	68	140	157	68	112	0	58	*	29	0	0
Key West (1952)	6	75.4	65.1	89.2	77.5	77.2	c	c	c	c	c	6.75	1.50	39.16	c	c	c	c	c	c	84	70	79	77	69	74	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Lakeland (U)	214	71.5	52.5	90.2	72.2	72.2	16	101	28	185	649	8.16	1.39	51.52	15.57	.07	10.12	.0	T	T	--	--	--	--	--	--	6.6	5.4	--	70	60	104	156	105	120	0	100	17	87	*	0
Melbourne (1953)	26	71.3	53.8	89.1	73.0	72.4	16	100	22	169	537	7.68	2.11	52.40	19.68	.11	8.56	.0	.0	.0	92	62	82	87	67	82	---	---	--	--	--	81	155	129	119	*	88	14	60	*	0
Miami (U)	8	74.4	62.6	86.8	76.4	75.3	46	95	27	57	173	7.88	1.73	47.26	25.34	T	15.10	.0	.0	.0	87	59	75	83	64	76	13.4	10.4	132	66	65	105	154	106	130	0	71	2	6	*	0
Miami	8	77.9	58.6	91.0	74.1	75.7	16	---	---	58	178	8.33	1.65	56.41	23.02	.01	12.58	---	---	---	87	59	75	83	64	77	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Miami Beach	9	75.5	64.4	87.6	77.4	76.6	15	98	35	43	123	7.07	1.82	42.97	18.02	.01	6.64	.0	.0	---	--	--	--	--	--	--	---	---	--	--	--	174	95	96	124	0	--	--	11	0	0
Orlando	106	73.0	50.7	91.4	72.7	72.5	14	102	26	188	650	7.85	1.32	51.31	15.87	T	9.67	.0	.0	.0	91	54	74	90	60	79	8.5	7.7	--	--	--	106	152	107	117	0	85	31	110	1	0
Pensacola (U)	13	61.1	46.9	86.9	75.0	68.0	77	103	7	383	1435	7.59	3.84	61.77	21.43	T	17.07	T	.1	2.1	83	69	77	83	69	76	10.6	9.1	114	55	66	132	123	110	111	*	70	16	21	8	0
Pensacola	110	----	----	----	----	----	--	---	---	---	----	----	----	-----	-----	----	-----	---	---	---	83	69	77	83	69	76	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Tallahassee	64	65.2	42.0	91.0	71.0	67.7	17	103	15	385	1519	7.87	2.38	56.80	17.88	.02	7.07	T	T	.4	88	58	73	91	64	77	6.2	4.7	--	--	--	104	132	129	112	0	79	42	83	20	0
Tampa	19	70.8	52.1	89.5	73.8	72.3	67	98	19	201	674	8.11	1.04	50.04	18.93	T	10.41	T	T	.1	87	60	74	83	62	79	8.4	7.1	84	60	61	120	155	90	114	0	85	21	64	1	0
West Palm Beach	15	75.4	58.6	89.9	74.0	75.0	18	101	31	85	248	9.12	2.20	61.80	18.26	.12	15.23	.0	.0	.0	86	59	75	84	64	79	11.0	7.2	--	--	--	79	162	124	133	0	79	7	89	*	0
GEORGIA							65	112	-17							0.00	18.00																								
Albany (1953)	190	62.4	40.3	93.0	71.9	67.4	65	106	-2	446	1763	5.46	2.09	49.50	20.48	.00	7.60	T	T	1.0	88	57	70	85	55	70	7.0	4.9	60	--	--	116	118	131	111	*	66	25	100	18	0
Athens	798	54.6	34.8	92.4	69.1	62.7	13	105	7	629	2800	5.17	2.94	50.11	14.98	.09	5.34	.5	.9	5.0	77	48	61	88	57	75	11.0	8.0	--	--	--	110	110	145	115	*	52	--	58	48	0
Atlanta (U)	1054	52.5	36.6	87.3	70.0	62.0	c	c	c	632	2811	5.49	2.50	47.96	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Atlanta	975	53.3	35.9	89.4	69.6	62.2	78	103	-9	632	2826	5.67	2.60	49.34	15.82	.02	7.36	.8	2.1	8.3	80	64	69	83	57	68	11.5	7.8	70	48	62	126	111	128	122	*	51	21	34	38	*
Augusta	143	59.2	35.6	91.9	70.1	64.0	83	106	3	554	2407	5.21	2.44	43.31	14.00	T	9.82	.2	.8	10.5	84	59	69	83	55	69	5.7	4.8	48	56	67	135	120	110	112	*	42	12	64	28	0
Columbus	385	58.1	36.7	91.0	70.7	64.2	11	104	10	563	2396	5.92	2.04	49.17	12.53	.30	5.32	T	T	T	88	61	74	87	59	71	---	---	--	--	--	115	104	146	111	9	60	20	79	43	0
Macon	356	60.4	38.6	93.3	71.5	66.1	57	106	7	497	2049	5.34	2.27	46.47	20.52	T	8.36	.2	.6	6.9	83	57	64	84	55	68	6.9	5.5	65	54	67	127	107	131	113	*	59	13	65	30	0
Rome	637	53.6	31.8	92.2	67.7	61.3	11	106	3	700	3138	5.83	2.86	53.15	17.37	.36	7.53	.3	.6	2.0	--	--	--	--	--	--	---	---	--	--	--	99	125	141	121	0	64	23	69	77	0
Savannah	48	62.2	42.0	90.5	72.2	66.8	86	105	8	424	1710	7.09	1.51	45.86	22.88	T	11.44	T	T	2.0	83	58	72	85	61	80	9.5	8.1	90	54	60	129	128	108	114	*	53	17	50	11	0
Valdosta (1953)	200	65.4	41.7	92.0	70.5	67.8	6	103	18	386	1525	8.03	2.14	51.62	15.94	.05	4.85	.0	T	T	--	--	--	--	--	--	---	---	--	--	--	113	114	138	115	0	73	39	101	18	0
IDAHO							64	118	-60							0.00	7.17																								
Boise	2842	34.6	19.9	90.5	59.1	50.8	17	109	-17	1169	5890	1.39	.18	11.52	4.00	.00	1.51	7.2	22.2	13.0	82	75	74	54	34	23	9.2	8.9	61	39	88	122	99	144	91	9	16	17	40	128	2
Idaho Falls 46W (R)	4933	27.6	3.8	88.1	50.3	42.3	7	99	-30	1528	8556	1.02	.36	7.70	2.74	.00	1.73	6.3	23.3	6.5	--	--	--	--	--	--	7.2	8.0	51	--	--	---	---	---	65	9	12	--	26	215	35
Idaho Falls 42N (R)	4790	25.3	-.7	87.9	48.3	41.1	6	102	-35	1634	8925	1.08	.31	7.36	1.82	.00	1.33	---	----	---	--	--	--	--	--	--	5.6	8.0	46	--	--	---	---	---	69	--	--	--	29	219	40
Lewiston	1413	37.2	24.4	90.1	60.2	52.1	10	106	-22	1060	5483	1.75	.38	13.16	4.80	T	1.73	6.5	17.8	11.9	79	73	71	64	37	25	6.5	5.7	--	--	--	97	81	187	104	7	17	18	35	106	4
Pocatello	4444	31.0	13.0	89.4	55.9	47.2	18	103	-31	1333	6976	1.32	.72	12.47	3.80	.00	1.65	10.2	38.2	10.1	81	75	74	56	30	21	9.7	9.3	72	35	82	113	102	150	92	14	27	9	31	161	10
Salmon	3949	28.2	4.1	89.6	46.8	44.0	48	---	---	1513	7922	1.28	.42	8.64	3.88	.00	1.50	---	----	---	--	--	--	--	--	--	--	---	--	--	--	---	---	---	---	--	--	--	---	---	--
ILLINOIS							67	117	-35							0.00	10.25																								
Cairo (U)	314	44.9	29.8	90.7	71.7	59.8	14	104	-5	856	3756	4.72	2.60	43.76	14.95	.33	7.56	3.1	7.6	6.6	81	69	--	83	57	--	10.1	6.5	56	42	81	111	102	152	115	2	54	6	58	62	*
Chicago	610	32.7	17.1	85.3	63.9	50.1	14	104	-15	1243	6310	4.15	1.47	32.78	12.06	.30	5.63	6.5	35.1	11.8	81	70	75	78	51	55	10.9	7.6	60	42	71	95	105	165	120	10	38	16	28	124	6
Joliet (1952)	584	32.5	15.0	86.9	60.5	49.1	11	101	-20	1277	6578	4.14	1.51	34.25	9.23	.25	5.32	5.7	25.0	8.0	--	--	--	--	--	--	---	---	--	--	--	83	124	157	110	9	40	24	26	143	12
Moline	589	31.9	14.4	87.2	63.7	50.2	24	106	-23	1296	6364	4.63	1.22	33.15	10.35	.04	4.89	5.8	23.9	9.6	80	69	75	83	54	56	10.5	7.5	77	43	75	105	101	159	109	9	45	20	31	137	10
Peoria	654	33.3	16.7	87.0	64.4	51.0	101	113	-27	1240	6087	3.94	1.98	35.25	12.30	.04	5.52	5.9	21.6	18.0	83	72	77	81	53	58	8.9	5.7	75	47	76	141	106	118	111	7	49	12	30	125	8
Springfield (U)	632	36.4	21.6	89.1	68.3	54.4	--	---	---	1116	5225	4.11	1.67	35.82	-----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Springfield	589	35.3	19.4	87.4	65.2	52.4	9	112	-15	1166	5693	4.19	1.68	36.71	8.80	.15	4.79	2.4	16.4	8.0	81	70	75	86	57	60	13.8	8.8	66	38	75	109	94	162	112	6	52	14	31	121	3
INDIANA							70	116	-35							0.00	10.50																								
Evansville	383	43.4	26.0	89.1	67.3	56.9	16	105	-23	939	4360	4.29	2.82	41.46	13.50	.13	5.16	3.7	10.6	9.6	84	69	76	85	54	60	9.9	6.6	59	38	78	105	103	157	115	3	52	15	46	98	1
Fort Wayne	801	33.4	19.1	84.3	62.6	49.9	10	103	-17	1200	6287	3.56	1.83	34.27	9.72	.42	4.60	7.1	29.1	7.7	84	75	81	84	53	58	10.7	7.7	65	35	70	78	109	178	131	8	46	20	23	134	5
Indianapolis (U)	718	38.7	23.4	88.3	67.7	54.5	--	---	---	1051	5134	4.18	2.08	39.24	----	----	----	---	----	---	--	--	--	--	--	--	----	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Indianapolis	793	37.1	20.5	87.9	64.1	52.5	19	104	-19	1122	5611	4.21	2.16	39.77	12.69	.21	3.75	4.0	18.1	5.6	83	72	78	84	54	60	12.7	8.2	90	36	74	95	102	168	121	9	46	21	24	122	4
South Bend	768	31.9	17.2	84.6	62.1	49.1	17	101	-22	1252	6524	3.84	1.61	35.65	9.75	.02	3.18	11.0	50.7	12.5	84	75	80	83	53	59	11.9	8.5	--	--	--	75	108	182	136	17	45	25	20	139	7
Terre Haute (1953)	578	38.4	20.2	88.9	64.9	53.5	41	110	-20	1107	5366	4.43	2.14	40.91	11.94	.03	5.16	4.7	17.7	10.2	82	70	76	77	50	56	10.4	7.3	66	44	74	98	128	139	121	6	48	11	34	100	4
IOWA							84	118	-47							0.00	12.99																								
Burlington	694	32.5	15.5	88.0	65.5	51.3	59	111	-27	1271	6101	5.64	1.46	36.66	15.10	.08	6.28	6.8	24.8	13.0	81	71	75	84	55	59	11.1	7.9	73	50	78	171	77	117	103	10	55	19	35	127	10
Charles City (U)(1952)	1013	25.7	7.8	84.8	62.3	46.5	61	108	-34	1494	7504	4.28	1.15	31.42	12.78	T	6.74	9.9	43.4	17.5	--	--	--	--	--	--	7.7	6.0	48	43	74	121	118	126	111	--	42	--	17	155	28
Davenport (U)	568	32.0	16.5	87.3	67.2	51.4	84	111	-27	1262	6091	4.79	1.35	34.31	12.68	.01	6.57	7.2	26.6	11.2	--	--	--	--	--	--	----	---	--	--	--	---	---	---	112	9	42	9	22	123	11
Des Moines (U)	807	31.4	14.2	87.6	66.6	50.9	78	110	-30	1308	6274	5.05	1.11	30.93	15.79	T	5.37	8.9	32.2	17.7	83	N69	75	77	N49	54	10.1	8.0	71	54	74	124	118	123	107	10	47	7	25	129	15
Des Moines	948	30.8	13.3	86.8	65.6	50.2	17	105	-21	1330	6446	4.99	1.13	30.79	14.19	.03	5.50	8.3	29.7	19.8	79	71	73	84	55	55	12.4	10.1	76	46	74	101	98	166	102	9	49	10	27	140	13
Dubuque (U) (1950)	641	27.9	11.3	84.7	60.4	48.3	76	110	-32	1407	6910	4.68	1.31	33.26	14.16	.02	5.48	9.2	34.9	14.9	81	70	75	78	52	60	7.0	5.8	47	48	73	114	115	136	114	11	39	12	16	131	17
Dubuque	1065	27.2	11.6	83.2	63.3	47.0	6	99	-26	1414	7271	5.09	1.15	32.89	8.14	T	4.36	7.1	37.9	9.3	84	73	79	85	57	65	----	---	--	--	--	93	99	173	108	13	47	25	13	155	13
Sioux City	1094	28.9	9.2	88.4	64.2	48.6	16	107	-24	1423	7012	4.41	.74	24.93	7.75	T	3.57	5.8	28.6	11.4	78	67	72	86	55	54	10.8	8.8	91	56	77	104	109	152	99	11	47	19	34	153	18
Waterloo	870	28.0	9.4	86.2	62.8	47.7	62	112	-33	1435	7144	4.76	1.05	32.10	12.43	T	6.00	7.0	28.7	----	--	--	--	--	--	--	----	---	--	--	--	---	---	---	91	9	--	--	27	151	20
KANSAS							70	121	-40							0.00	12.59																								
Concordia (U)	1375	37.6	18.6	91.2	68.7	54.5	71	116	-25	1144	5323	4.23	.59	25.44	13.74	T	6.46	4.2	20.2	17.2	78	63	68	76	46	45	7.7	7.2	65	60	79	141	129	95	89	6	45	12	48	118	7
Dodge City	2594	42.0	18.6	92.9	66.9	55.0	14	107	-15	1076	5058	3.01	.49	20.61	8.69	T	4.17	4.8	19.1	8.0	78	57	61	77	45	42	14.6	13.9	78	69	78	145	110	110	76	7	55	25	64	128	3
Goodland	3645	39.3	12.3	90.9	60.2	49.9	36	111	-22	1215	6367	3.02	.31	18.23	8.09	.00	2.95	5.2	29.9	15.2	74	52	62	78	43	41	12.7	12.2	--	--	--	135	133	97	75	10	50	32	62	152	9
Topeka (U)	926	39.8	20.8	91.8	69.4	55.9	69	114	-25	1088	4919	4.61	1.00	33.28	14.10	T	8.08	---	----	----	--	--	--	--	--	--	----	---	--	--	--	142	122	101	97	--	--	--	48	106	4
Topeka	877	38.8	18.6	90.7	67.7	54.6	10	109	-21	1125	5209	4.66	1.01	33.13	12.02	T	4.48	5.0	19.2	9.3	78	64	67	85	54	54	10.3	9.1	66	51	65	121	98	146	95	6	58	11	59	129	4
Wichita (U) (1955)	1372	41.3	22.6	92.3	69.4	57.0	67	114	-22	1023	4571	4.99	.98	30.70	14.43	.00	7.99	3.2	13.6	12.3	78	63	66	77	48	49	12.5	11.6	100	61	80	158	112	95	87	4	52	11	54	96	2
Wichita	1321	41.3	22.6	92.3	69.4	57.0	3	113	-1	1023	4571	4.99	1.02	30.74	5.84	T	4.24	3.1	7.8	5.0	78	59	64	70	38	36	13.3	12.3	66	65	83	146	107	112	62	3	48	12	92	113	*

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F)								Normal degree days (1921-1950)		Precipitation (inches)									Relative humidity (percent)						Wind Speed (m.p.h.)			Sunshine (percent of possible)		Annual mean number of days									
		Normal (1921-1950)					Extremes					Normal (1921-1950)			Extremes			Snow, Sleet									Mean hourly					Sunrise to sunset							Temperature		
		January		July														Mean total		Extreme	January			July															Max.	Min.	
		Daily maximum	Daily minimum	Daily maximum	Daily minimum	Annual	Length, yrs.	Record highest	Record lowest	January	Seasonal	Wettest month	Driest month	Annual	Wettest month	Driest month	Maximum in 24 hours	January	Seasonal	Maximum in 24 hours	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST	January	July	Fastest mile	January	July	Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet, 1.0 inch or more	Thunderstorms	Heavy fog	90° and above	32° and below	Zero and below
KENTUCKY							68	114	-33							0.00	10.10																								
Bowling Green (1952)	534	45.6	27.0	88.9	65.6	56.9	65	113	-20	890	4279	5.66	2.88	50.10	20.70	0.03	6.15	3.0	8.8	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Lexington	979	40.5	24.5	86.2	65.2	54.4	73	108	-20	1008	4979	4.50	2.44	43.84	16.65	.11	8.06	6.1	19.3	13.4	82	73	74	78	56	66	13.6	8.8	56	36	64	127	106	132	133	6	46	11	25	91	2
Louisville (U)	457	43.2	27.9	87.9	69.3	57.3	c	c	c	911	4279	4.67	2.48	41.60	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Louisville	474	43.6	26.2	89.1	66.6	56.5	84	107	-20	933	4439	4.67	2.45	41.59	19.17	.07	5.80	4.1	13.5	15.0	78	68	69	77	52	57	9.9	7.0	68	41	73	118	115	132	123	4	45	9	34	76	1
LOUISIANA							66	114	-16							0.00	21.40																								
Baton Rouge	64	61.3	43.4	90.0	72.2	67.5	12	103	13	424	1595	5.87	2.98	59.29	14.63	.08	8.40	.2	.2	1.8	89	65	71	91	60	71	---	---	--	--	--	108	133	124	111	*	73	31	92	15	0
Burrwood (1952)	5	65.2	49.0	89.0	76.1	70.7	45	99	10	303	1033	7.31	3.56	58.40	18.99	.00	10.80	T	T	T	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Lake Charles	12	61.8	43.4	91.1	73.3	68.3	18	104	12	416	1543	6.93	3.44	57.99	17.90	T	16.01	.4	.4	3.4	89	67	76	93	63	72	10.9	6.8	55	--	--	97	120	148	107	*	69	37	86	12	0
New Orleans (U)	9	63.5	48.3	90.3	75.8	70.4	83	102	7	341	1175	7.09	3.66	63.69	25.11	T	14.01	.1	.2	8.2	85	67	73	84	64	72	8.3	6.4	98	49	58	119	137	109	118	*	72	14	57	4	0
New Orleans (1950)	3	63.2	46.5	90.1	73.4	69.1	14	100	19	364	1317	5.90	3.18	59.65	16.87	.21	7.87	T	T	T	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	0	--	--	---	5	0
Shreveport (U) (1955)	174	56.4	39.2	93.4	73.8	66.4	82	110	-5	550	2117	4.83	2.22	45.10	25.45	T	12.44	.9	1.8	11.0	83	67	66	36	56	62	9.0	7.1	59	47	78	150	109	106	99	--	49	6	84	22	*
Shreveport	252	56.4	39.2	93.4	73.8	66.4	5	106	17	550	2117	4.83	2.22	45.23	9.82	.04	7.17	T	T	T	83	63	65	91	55	57	11.1	8.0	--	55	75	145	87	133	83	0	55	14	108	26	0
MAINE							69	105	-48							0.00	7.72																								
Caribou	624	18.1	-.8	74.5	53.5	37.2	18	96	-41	1745	10173	4.03	1.79	35.94	8.14	.12	6.23	21.5	101.9	18.2	74	70	74	81	58	71	12.8	9.9	--	--	--	56	106	203	154	30	20	26	3	192	43
Eastport (U) (1952)	33	29.8	14.1	69.2	51.9	42.3	80	93	-23	1333	8266	3.66	2.49	35.92	13.22	.13	5.48	16.9	71.6	18.5	74	72	71	85	77	83	13.5	7.5	83	45	56	89	114	162	149	23	13	60	*	137	10
Portland	61	30.7	10.6	78.7	56.9	44.5	16	100	-39	1373	7681	4.43	2.59	41.91	9.97	.26	7.49	18.7	68.0	21.0	81	65	74	78	58	76	9.2	7.3	76	55	68	120	93	147	130	17	17	53	5	162	14
MARYLAND							62	109	-40							T	14.75																								
Baltimore (U)	14	43.6	29.6	86.9	70.0	57.1	85	107	-7	880	4203	4.38	2.95	42.69	17.69	.05	7.82	6.1	22.7	24.5	72	58	56	71	52	65	10.3	8.8	†66	48	65	121	123	121	125	6	32	15	24	72	*
Baltimore	146	42.8	25.6	86.6	66.0	54.7	6	102	4	955	4787	4.38	2.95	42.69	18.35	.15	7.82	5.2	13.5	6.0	76	59	67	76	49	64	10.9	8.4	80	46	69	111	112	142	116	6	32	34	31	96	0
Frederick	294	41.4	24.0	87.9	65.4	54.7	15	102	-13	1001	4854	4.03	2.68	40.33	11.26	.15	5.56	6.1	19.8	17.5	--	64	--	--	56	--	---	---	--	--	--	---	---	---	129	5	20	9	33	121	1
MASSACHUSETTS							69	106	-30							0.00	11.14																								
Blue Hill Obs. (R)	629	34.0	18.6	79.7	61.4	47.3	72	101	-21	----	----	4.20	3.45	46.28	18.78	.06	9.93	15.4	58.7	20.0	--	--	--	--	--	--	17.4	13.0	121	43	57	101	127	137	138	16	25	98	4	132	5
Boston	15	36.5	21.6	80.0	64.3	50.7	85	104	-18	1113	5791	3.50	2.79	38.86	17.09	T	8.40	11.8	42.1	16.5	72	59	67	72	55	70	13.1	10.1	87	48	65	114	115	136	126	11	19	15	9	103	2
Nantucket	43	39.3	24.8	73.8	60.3	48.8	70	95	-6	1020	6102	4.05	2.83	41.82	12.92	.01	5.73	7.1	26.4	20.1	81	73	80	85	74	90	14.8	11.8	91	43	63	109	108	148	131	6	18	86	*	87	*
Pittsfield	1153	29.8	12.5	79.0	56.1	44.5	18	95	-25	1358	7694	4.95	2.59	44.32	10.32	.60	4.25	17.1	74.5	15.8	--	--	--	--	--	--	---	---	--	--	--	57	127	181	157	22	28	45	2	165	12
Worcester	986	31.3	16.6	79.3	61.0	47.0	8	99	-11	1271	6979	4.31	2.67	42.12	18.68	.59	6.38	12.6	47.5	10.2	81	75	77	76	58	74	16.8	10.7	--	--	--	---	---	---	131	15	19	90	6	132	3
MICHIGAN							70	112	-51							0.00	9.91																								
Alpena (U)	587	28.1	14.2	76.8	57.9	43.5	84	104	-28	1358	8073	3.20	1.51	26.69	13.18	.10	4.40	16.8	66.7	16.8	80	70	77	77	61	69	11.0	9.0	61	28	70	85	125	155	149	21	26	14	3	158	14
Detroit	619	33.1	19.3	83.5	62.6	49.3	23	105	-16	1203	6404	3.61	2.10	31.11	8.05	.38	3.72	7.8	28.7	9.8	82	71	77	74	50	56	11.3	8.1	68	31	71	81	108	176	133	10	34	12	16	126	2
Detroit, Willow Run	722	32.1	18.5	84.3	62.6	49.2	14	102	-12	1231	6469	3.44	1.81	30.23	8.71	.40	4.78	8.1	31.2	8.0	81	71	76	77	48	55	11.5	8.8	60	--	--	81	102	182	119	11	38	30	24	134	3
East Lansing (U)	856	30.9	16.6	82.4	59.7	47.3	51	102	-25	1277	6982	3.75	1.88	31.15	9.21	.04	5.47	11.1	47.3	18.1	81	72	--	79	50	--	10.1	6.5	50	34	72	94	111	160	143	14	38	12	10	145	7
Escanaba (U)	594	25.0	10.0	75.3	58.4	41.9	47	100	-31	1473	8657	3.22	1.41	27.12	9.93	.07	5.05	14.2	57.0	14.5	78	70	75	80	64	69	10.3	9.1	68	41	66	104	107	154	128	19	33	19	1	164	20
Flint	761	30.5	15.8	82.7	59.2	46.8	15	101	-16	1296	7128	3.48	1.58	30.20	8.68	.07	6.04	8.9	38.4	13.4	85	76	81	81	52	61	11.5	7.9	81	--	--	72	112	181	134	13	37	19	15	146	3
Grand Rapids (U)	638	31.8	19.7	84.0	63.2	49.3	c	c	c	1215	6474	3.47	1.73	31.35	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Grand Rapids	681	30.7	16.3	83.6	59.4	47.1	65	108	-24	1287	7075	3.47	1.73	31.56	13.22	.02	4.58	15.1	57.0	14.0	85	78	80	76	51	54	11.8	8.7	80	26	72	80	109	176	135	19	39	7	14	129	6
Marquette (U)	677	25.2	12.1	75.1	57.1	42.2	19	102	-17	1435	8529	3.46	1.78	31.30	10.20	.21	4.65	18.9	98.6	16.1	75	70	73	76	64	66	8.8	7.1	57	28	64	62	104	199	155	29	29	16	6	159	9
Muskegon	627	31.4	18.3	80.5	59.2	46.8	15	97	-14	1243	7089	3.34	1.70	29.07	7.12	.33	3.51	19.7	68.9	12.5	77	76	78	83	57	61	---	---	--	--	--	79	94	192	141	25	37	25	6	145	2
Sault Ste. Marie	721	21.9	5.7	75.4	52.4	39.3	15	98	-25	1587	9475	3.49	1.57	30.24	6.66	.25	2.67	21.2	102.1	14.3	79	77	82	87	61	69	10.3	8.4	58	32	62	67	92	206	164	102	29	43	2	178	24
MINNESOTA							70	114	-59							0.00	10.75																								
Duluth (U)	1162	18.7	1.9	75.8	55.8	39.2	82	106	-41	1696	9574	3.72	1.00	26.67	11.52	.07	5.35	11.1	56.0	23.0	78	74	74	87	61	66	12.3	10.5	75	46	67	110	119	136	126	16	31	37	2	173	41
Duluth	1409	17.2	-.7	76.8	56.0	38.2	14	---	---	1758	9937	4.33	1.20	29.72	8.48	.13	----	----	----	----	c	c	c	c	c	c	---	---	c	c	c	c	c	c	---	--	c	c	---	---	--
International Falls	1179	13.6	-7.7	78.6	53.0	36.3	17	98	-41	1922	10600	3.73	.85	24.20	11.26	.10	4.82	11.1	62.7	13.9	76	70	73	88	57	60	---	---	--	--	--	83	103	179	136	19	29	12	4	196	66
Minneapolis-St. Paul	830	23.1	6.1	84.9	63.3	45.6	19	104	-31	1562	7853	4.26	.80	24.75	7.80	T	4.12	6.7	42.7	16.2	82	72	75	82	54	54	10.5	9.4	92	49	70	103	102	160	113	11	37	13	16	155	30
Rochester	1017	23.5	5.1	84.2	59.4	44.5	44	108	-42	1572	8095	4.33	.79	28.52	11.95	T	5.26	8.7	40.9	12.9	79	71	75	84	56	59	9.9	7.7	--	--	--	92	125	148	104	13	42	18	15	167	32
St.Cloud	1034	20.7	.2	83.2	58.0	41.9	17	103	-40	1690	8893	3.85	.69	24.19	9.34	.01	4.62	7.0	44.6	12.2	77	73	75	86	57	59	8.0	7.0	--	--	--	94	108	163	109	13	35	21	11	179	43
St. Paul (1952)	703	23.3	6.5	84.9	63.7	45.8	80	108	-41	1553	7804	4.23	.87	26.50	11.67	T	5.67	8.9	41.2	17.0	75	69	69	79	51	53	9.5	8.1	92	--	--	104	128	133	114	13	34	9	12	154	32
MISSISSIPPI							68	115	-16							0.00	12.35																								
Jackson	305	58.6	37.9	93.6	70.5	65.4	17	106	-5	535	2202	6.23	2.10	51.05	15.76	T	7.50	1.4	1.6	10.6	87	64	70	90	55	64	9.7	6.1	68	40	63	118	119	128	107	*	61	15	100	34	*
Meridian	294	58.5	36.5	92.0	69.8	64.5	67	105	-7	561	2333	6.58	2.38	55.28	20.06	T	9.50	.6	1.2	7.6	86	60	69	87	56	70	6.4	4.6	47	--	--	136	118	111	110	*	62	9	66	37	*
Vicksburg (U)	234	57.6	40.8	90.0	72.9	66.1	83	104	-1	507	2000	6.03	1.77	49.82	22.24	T	9.97	1.0	1.7	10.0	82	65	67	87	61	70	8.5	6.4	49	45	69	130	120	115	108	*	61	9	61	19	*
MISSOURI							69	118	-40							0.00	12.25																								
Columbia	778	38.8	20.7	88.8	66.8	54.6	17	113	-18	1091	5113	4.90	1.63	39.39	13.30	.09	6.61	4.5	19.6	12.8	79	65	69	84	54	56	8.8	6.0	63	52	76	134	107	124	108	5	56	5	43	110	3
Kansas City	741	39.0	21.0	91.2	70.5	56.1	23	113	-13	1085	4888	5.02	1.21	35.36	11.94	.04	5.96	4.4	17.1	8.5	78	64	66	76	48	47	10.2	8.9	72	51	78	123	106	136	98	5	49	15	55	101	3
St. Joseph	809	36.9	17.3	91.4	68.8	54.5	8	107	-13	1175	5336	6.46	1.05	35.32	13.73	.06	4.76	4.5	18.9	9.0	79	66	70	88	59	59	12.1	8.0	64	46	62	121	103	141	95	5	62	20	49	128	5
St. Louis (U)	465	41.0	89.6	25.6	71.6	57.3	21	112	-12	983	4469	4.10	1.97	37.95	20.45	.03	8.78	3.6	14.8	12.4	77	65	68	73	50	55	12.6	9.5	82	46	73	128	106	131	110	6	51	8	46	84	1
St. Louis (1950)	552	40.8	23.6	90.0	69.3	56.3	14	---	---	1017	4699	4.37	1.66	36.73	14.78	T	5.15	----	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Springfield	1265	41.7	23.7	87.7	67.2	55.7	11	113	-11	1001	4693	5.56	1.83	41.58	10.96	.13	5.48	2.8	10.8	12.5	83	69	72	87	57	60	13.1	9.9	66	44	72	118	98	149	102	5	61	18	43	100	1
MONTANA							90	117	-70							0.00	10.10																								
Billings	3568	32.3	13.4	87.9	58.6	47.2	22	106	-38	1305	7106	2.61	.46	13.12	7.64	T	2.83	7.2	52.7	23.7	67	63	60	65	40	33	12.6	9.9	73	47	78	91	123	151	92	20	31	18	28	150	17
Butte	5530	28.0	.4	79.8	45.0	38.3	25	100	-52	1575	9760	2.28	.55	12.69	5.40	T	2.02	7.3	50.3	13.0	x76	x70	x71	x82	x36	x33	7.9	8.1	--	--	--	80	112	173	107	19	41	6	5	228	45
Glasgow (U)	2277	19.6	1.4	86.7	57.6	42.0	13	108	-50	1690	8869	3.48	.36	13.28	6.95	T	2.83	7.6	37.4	8.4	73	69	72	75	39	34	---	---	--	--	--	85	105	175	92	13	27	11	28	185	49
Great Falls	3664	31.7	13.6	83.8	55.3	45.1	19	105	-35	1311	7555	2.96	.55	14.06	8.13	T	3.20	7.5	52.8	11.0	67	63	63	65	37	32	17.4	11.2	82	49	80	85	111	169	96	20	29	13	15	147	23
Havre (U)	2488	26.3	6.1	85.9	56.6	43.6	53	107	-57	1513	8213	2.98	.40	12.32	7.09	T	2.70	7.1	36.9	22.9	82	71	78	75	38	35	8.8	7.2	59	49	78	123	124	118	90	12	26	5	21	173	37

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) Normal (1921-1950) January Daily maximum	Temperature Normal January Daily minimum	Temperature Normal July Daily maximum	Temperature Normal July Daily minimum	Temperature Normal Annual	Temperature Extremes Length, yrs.	Temperature Extremes Record highest	Temperature Extremes Record lowest	Normal degree days (1921-1950) January	Normal degree days Seasonal	Precipitation (inches) Normal (1921-1950) Wettest month	Precipitation Normal Driest month	Precipitation Normal Annual	Precipitation Extremes Wettest month	Precipitation Extremes Driest month	Precipitation Extremes Maximum in 24 hours	Snow, Sleet Mean total January	Snow, Sleet Mean total Seasonal	Snow, Sleet Extreme Maximum in 24 hours	Relative humidity (percent) January 7:30 a.m. EST	Relative humidity January 1:30 p.m. EST	Relative humidity January 7:30 p.m. EST	Relative humidity July 7:30 a.m. EST	Relative humidity July 1:30 p.m. EST	Relative humidity July 7:30 p.m. EST	Wind Speed (m.p.h.) Mean hourly January	Wind Speed Mean hourly July	Wind Speed Fastest mile	Sunshine (percent of possible) January	Sunshine July	Annual mean number of days Sunrise to sunset Clear	Sunrise to sunset Partly cloudy	Sunrise to sunset Cloudy	Precipitation .01 inch or more	Snow, sleet, 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max. 90° and above	Temperature Min. 32° and below	Temperature Min. Zero and below
MONTANA (Cont'd.)																																									
Helena (U)	4090	27.3	9.9	80.5	53.2	43.2	--	---	---	1438	8126	2.45	.49	12.55	----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Helena	3893	27.7	7.5	83.8	52.2	43.0	16	102	-37	1469	8250	2.15	.43	11.32	4.74	.03	1.70	8.4	45.9	10.7	73	69	67	74	42	34	6.7	7.9	73	51	79	81	110	174	99	15	40	9	14	182	27
Kalispell	2965	28.0	12.6	82.1	49.9	43.2	7	97	-38	1386	8055	2.43	.95	16.38	3.56	T	1.99	20.4	66.0	15.4	--	76	--	--	43	--	9.1	7.2	--	--	--	74	81	210	131	23	26	38	7	180	16
Miles City	2629	26.6	5.5	89.9	60.0	45.4	19	110	-37	1516	7850	2.84	.38	12.83	9.78	T	2.67	5.6	29.7	10.5	--	--	--	--	--	--	8.8	10.1	--	--	--	102	108	155	88	12	34	8	37	175	33
Missoula	3200	28.6	10.1	86.3	50.4	44.1	12	105	-25	1414	7873	1.87	.78	12.79	4.10	.02	1.65	9.8	43.2	11.2	84	78	76	78	40	29	5.1	6.5	58	29	78	75	84	206	123	14	27	22	18	182	13
NEBRASKA							81	118	-47							0.00	13.15																								
Grand Island	1841	34.0	11.9	92.9	64.9	51.0	26	117	-26	1302	6311	3.87	.55	22.72	10.43	.00	5.41	6.6	27.0	8.6	79	63	70	81	49	47	10.0	11.8	--	--	--	139	107	119	78	9	47	16	56	148	13
Lincoln (U)	1166	34.3	15.7	90.5	67.8	52.7	70	115	-29	1240	5865	4.10	.82	25.77	14.21	.00	8.38	5.9	26.4	12.4	--	--	--	--	--	--	10.4	9.2	66	57	76	132	111	122	93	9	47	4	41	129	11
Lincoln (1953)	1180	34.4	13.6	90.8	66.1	51.7	14	---	---	1271	6104	3.98	.71	24.10	----	----	----	---	----	----	79	67	72	82	50	50	---	---	--	--	--	c	c	c	---	--	--	--	---	---	--
Norfolk	1544	29.4	9.2	88.7	63.7	48.3	11	113	-26	1417	7065	4.78	.78	25.72	9.11	T	3.46	5.1	27.2	7.4	80	65	72	82	53	51	---	---	--	--	--	120	104	141	88	9	52	10	36	156	19
North Platte	2779	36.8	11.2	89.4	62.2	49.5	82	112	-35	1271	6546	2.92	.36	17.56	10.47	T	6.32	3.9	25.4	13.0	80	62	66	84	50	46	8.0	8.1	72	62	78	145	130	90	83	8	38	8	34	159	15
Omaha	978	32.4	13.5	89.3	67.6	51.6	21	114	-21	1302	6160	4.51	.81	25.94	10.81	T	3.48	8.5	30.9	13.7	82	68	73	80	51	51	11.5	9.5	109	54	77	119	108	138	93	10	51	15	42	135	12
Scottsbluff	3950	36.7	10.3	90.1	59.0	48.2	65	110	-45	1287	6841	2.78	.33	15.02	8.33	.00	3.74	4.9	34.3	17.6	70	52	58	78	41	39	9.3	9.2	80	--	--	209	87	69	73	12	46	10	45	179	16
Valentine	2587	32.8	9.3	88.3	62.2	47.9	67	110	-38	1361	7075	3.16	.49	18.26	8.18	.00	4.21	6.1	38.2	16.0	--	--	--	--	--	--	9.2	9.2	62	62	80	137	128	100	93	--	38	--	32	164	22
NEVADA							68	122	-50							0.00	4.37																								
Elko	5075	34.5	9.2	91.3	49.1	45.7	26	104	-43	1336	7335	1.07	.29	9.16	3.35	T	1.62	10.8	37.0	16.7	81	72	70	59	26	20	6.0	6.3	--	--	--	136	101	128	74	13	22	6	44	215	19
Ely	6257	37.4	8.6	88.6	48.1	45.2	18	99	-27	1302	7443	1.29	.50	10.56	2.63	.00	1.42	8.7	42.0	13.1	74	60	61	54	24	25	11.2	10.9	74	61	78	140	106	119	69	13	30	*	13	217	23
Las Vegas	2162	55.4	33.0	105.4	75.6	66.8	20	117	8	653	2425	.60	.13	4.37	3.39	.00	1.75	1.0	1.2	5.0	61	41	34	32	19	15	6.3	9.2	--	75	85	210	85	70	25	*	14	*	142	59	0
Reno	4397	45.7	16.6	91.8	47.3	49.5	15	104	-16	1048	6036	1.08	.22	6.99	5.25	.00	2.37	7.1	23.5	16.9	82	67	54	72	25	20	6.7	6.8	72	64	91	176	89	100	47	8	13	8	46	188	4
Tonopah (1952)	6101	37.4	22.7	87.1	62.0	51.0	--	---	---	1082	5813	.55	.19	4.81	3.26	.00	1.97	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	-
Winnemucca	4299	37.4	18.2	92.0	56.4	49.1	76	108	-36	1153	6369	1.04	.18	8.78	5.23	.00	1.64	7.7	27.7	18.2	88	66	65	48	20	17	8.2	7.5	69	53	90	169	95	101	72	8	12	1	41	173	7
NEW HAMPSHIRE							81	106	-46							0.00	8.00																								
Concord	339	31.6	8.6	82.6	55.3	44.8	86	102	-37	1392	7612	3.62	2.39	37.32	10.97	T	5.97	17.5	68.6	19.0	78	60	69	80	49	69	6.2	4.9	72	48	56	139	106	120	120	20	24	53	9	154	15
Mt. Washington	6262	14.1	-3.3	55.1	43.4	27.0	24	71	-46	1777	13661	6.58	4.75	70.20	15.57	.75	5.20	26.0	185.5	32.0	b78	b79	b79	b92	b87	b91	47.6	25.4	231	33	31	52	78	235	203	57	15	303	0	242	64
NEW JERSEY							72	110	-34							0.00	14.81																								
Atlantic City (U)	8	42.4	29.1	79.3	67.9	54.1	83	104	-9	905	4741	4.72	2.98	41.88	14.87	.01	9.21	4.0	14.4	18.0	79	68	74	81	72	82	16.3	13.3	91	51	67	118	122	125	122	5	23	21	3	75	*
Newark	11	39.0	24.0	84.9	65.6	52.9	26	105	-14	1039	5252	4.20	3.10	43.07	11.84	.07	4.59	6.3	24.2	26.0	72	59	65	75	51	65	11.3	8.6	--	--	--	93	118	154	123	6	25	27	23	97	*
Trenton (U)	56	39.8	25.4	84.6	66.0	53.5	84	106	-14	1004	5068	4.59	2.65	40.15	15.22	.06	5.42	6.3	23.4	16.0	73	62	68	77	55	68	10.5	8.4	73	48	67	105	116	144	115	6	35	22	16	92	*
NEW MEXICO							65	116	-50							0.00	11.28																								
Albuquerque	5310	45.6	21.8	91.6	66.4	56.6	17	102	-5	970	4389	1.43	.28	8.70	3.25	.00	1.92	2.0	9.5	6.8	68	51	46	59	33	28	8.3	9.3	90	69	76	174	115	76	58	4	46	4	65	109	*
Clayton	4969	46.7	19.0	88.4	59.8	53.1	12	102	-17	995	5138	2.56	.27	15.44	7.77	T	4.67	4.1	17.9	10.9	61	43	48	76	41	42	16.8	12.4	--	--	--	177	100	88	65	5	55	14	41	140	3
Raton	6379	42.8	9.5	84.4	52.7	48.2	12	97	-24	1203	6417	2.50	.35	15.44	7.61	.00	3.97	6.1	24.2	8.0	70	46	52	80	38	43	---	---	--	--	--	136	142	87	73	8	77	6	21	184	9
Roswell	3612	53.8	25.3	92.1	65.8	59.8	9	108	-15	787	3424	2.00	.39	12.09	5.64	.00	3.37	3.6	8.7	8.9	69	41	37	71	38	33	8.4	9.1	75	--	--	194	98	73	48	3	44	6	109	111	1
NEW YORK							67	108	-52							0.00	10.45																								
Albany (U)	19	32.9	17.4	82.6	63.6	49.4	--	---	---	1234	6319	4.08	2.18	35.81	----	----	----	---	---	---	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Albany	277	30.9	14.0	82.5	60.2	47.2	18	100	-26	1318	6962	3.37	2.10	31.89	8.96	.52	4.08	15.6	57.2	15.9	75	63	71	79	52	64	10.0	7.3	71	42	66	75	115	175	133	15	31	24	15	146	11
Bear Mountain (1952)	1300	32.8	18.9	79.5	62.6	48.3	13	99	-23	1212	6511	4.71	2.90	44.29	16.87	.25	5.50	11.3	48.9	23.0	--	--	--	--	--	--	---	---	--	--	--	73	122	170	126	13	27	98	4	130	3
Binghamton (U)	858	34.0	17.3	82.8	60.0	48.4	66	103	-28	1218	6556	3.69	2.32	36.34	9.59	.16	4.55	12.3	51.2	21.0	82	68	77	85	56	71	6.9	4.7	72	32	55	68	107	190	152	14	31	27	10	133	7
Binghamton	1601	29.7	13.6	79.1	59.0	45.2	12	---	---	1342	7537	3.87	2.30	37.66	----	----	----	---	---	---	82	68	77	85	55	70	---	---	72	32	55	68	108	189	---	--	31	--	---	---	--
Buffalo	693	32.4	18.5	81.1	60.0	47.5	83	99	-21	1225	6838	3.09	2.43	32.38	10.63	.05	4.28	18.8	75.2	24.3	79	72	78	78	53	63	17.4	12.1	91	32	70	73	128	162	165	22	31	13	2	128	4
New York (U)	10	39.9	25.8	82.3	66.9	53.4	86	102	-14	995	5050	4.34	3.04	42.03	14.51	.11	9.40	7.4	30.1	25.8	b72	N61	b66	b75	N58	b68	16.4	12.0	113	51	65	104	131	130	125	8	31	21	7	91	*
New York Central Park	132	39.2	26.1	84.7	67.4	54.0	88	106	-15	1001	4965	4.40	3.03	43.36	16.85	.02	5.41	7.7	29.6	26.4	68	62	61	76	56	64	11.1	7.9	--	49	66	103	126	136	121	8	--	--	15	82	1
New York	19	39.1	26.8	84.0	67.8	53.9	16	103	-7	992	4989	4.27	2.91	40.38	16.05	.03	7.11	6.3	27.3	22.8	69	59	63	73	55	65	---	---	--	--	--	---	---	---	120	7	--	--	18	78	*
Oswego (U)(1952)	292	31.7	17.6	77.8	62.3	47.0	82	100	-23	1249	6975	3.33	2.48	33.07	10.50	.18	3.76	23.8	87.9	19.1	78	68	77	76	63	70	12.1	7.9	48	19	69	79	102	184	163	28	26	9	2	127	6
Rochester	543	32.7	16.7	82.7	59.7	47.5	85	102	-22	1249	6863	3.09	2.36	31.83	9.70	.08	4.19	17.9	75.3	29.8	81	73	79	80	50	60	11.0	7.5	73	32	70	83	112	170	167	23	28	16	8	132	5
Schenectady (1952)	217	28.8	14.2	82.5	62.8	47.2	8	102	-28	1349	7050	3.86	2.22	35.25	8.69	.64	7.46	16.7	62.7	---	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Syracuse	424	33.9	17.0	83.5	61.4	48.8	54	102	-26	1225	6520	3.68	2.61	36.51	15.92	.19	4.79	20.2	83.1	27.2	76	70	76	74	54	65	11.2	8.1	69	31	67	72	114	179	169	24	30	6	8	132	7
NORTH CAROLINA							70	109	-21							0.00	22.22																								
Asheville (U)	2203	48.8	30.0	84.1	63.4	56.3	54	99	-6	794	4072	4.50	2.11	37.33	13.75	.02	7.92	2.9	11.0	15.8	82	59	69	88	56	73	9.6	6.1	52	48	59	115	129	121	132	--	52	54	9	83	*
Charlotte	725	52.2	32.2	88.8	68.3	60.5	78	104	-5	704	3205	4.67	2.65	43.23	16.55	T	6.59	1.5	5.7	14.0	80	60	66	82	55	68	7.3	5.9	57	52	65	125	116	124	120	2	46	19	39	46	*
Greensboro	891	49.0	29.0	87.4	66.9	58.1	28	102	-7	806	3810	4.94	2.60	42.61	13.26	.13	7.49	2.7	7.0	14.3	83	59	72	85	56	73	8.3	6.7	63	49	64	115	111	139	117	2	49	32	38	83	*
Hatteras (R)	4	54.3	41.6	83.4	73.5	63.1	82	97	8	527	2392	6.48	3.08	54.92	20.95	T	14.73	.3	1.1	12.0	84	75	84	82	75	85	14.3	11.7	110	47	66	142	110	113	123	*	40	9	1	13	0
Raleigh (U)	400	51.3	34.0	88.9	69.6	61.1	c	c	c	691	3075	5.64	2.68	45.83	c	c	c	c	c	c	--	--	--	--	--	--	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Raleigh	433	50.8	32.0	89.0	68.0	59.9	70	105	-2	732	3369	5.45	2.82	45.19	13.63	.06	6.66	2.1	7.1	17.8	82	57	69	86	55	72	8.3	6.8	x66	49	62	131	116	118	119	4	41	17	40	51	*
Wilmington	30	58.7	36.9	89.1	70.9	63.8	86	104	5	533	2323	8.16	2.59	49.96	21.12	.02	9.52	.4	1.4	11.1	83	59	76	86	63	79	9.5	8.9	82	57	65	133	129	103	120	*	46	11	26	27	0
Winston-Salem	967	48.6	30.0	87.0	67.9	58.5	57	104	-10	797	3721	4.57	2.79	43.27	12.92	.15	6.24	3.0	8.7	8.9	74	55	63	81	51	66	---	---	--	--	--	120	109	136	104	2	42	33	41	89	*
NORTH DAKOTA							65	109	-21							0.00	7.70																								
Bismarck	1650	20.1	-1.8	85.5	58.6	41.7	17	109	-44	1730	9033	3.33	.36	15.42	8.29	T	3.25	7.3	37.8	13.5	77	71	75	85	52	49	10.2	9.9	72	54	75	99	109	157	97	13	37	12	21	187	50
Devils Lake (U)	1471	14.2	-4.7	81.7	56.9	38.7	52	112	-46	1866	9940	3.18	.40	17.63	8.55	T	4.82	6.2	35.4	13.4	75	72	75	86	53	53	9.9	8.5	57	52	71	113	110	142	101	11	30	10	11	189	60
Fargo	895	16.9	-2.8	84.2	58.3	40.9	15	105	-36	1795	9274	3.04	.60	18.76	8.52	.02	4.72	6.6	36.3	11.2	74	70	74	86	56	55	13.3	11.3	91	48	68	91	114	160	105	11	33	12	12	183	55
Williston (U)	1877	19.8	.2	83.5	58.2	41.3	40	110	-50	1705	9068	3.59	.48	14.68	7.88	T	3.06	5.7	33.3	10.6	74	67	69	78	45	41	6.8	7.0	60	51	79	125	117	123	100	11	29	7	18	180	43

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) Normal (1921-1950) January Daily maximum	Temperature Normal January Daily minimum	Temperature Normal July Daily maximum	Temperature Normal July Daily minimum	Temperature Normal Annual	Temperature Extremes Length, yrs.	Temperature Extremes Record highest	Temperature Extremes Record lowest	Normal degree days (1921-1950) January	Normal degree days Seasonal	Precipitation (inches) Normal (1921-1950) Wettest month	Precipitation Normal Driest month	Precipitation Normal Annual	Precipitation Extremes Wettest month	Precipitation Extremes Driest month	Precipitation Extremes Maximum in 24 hours	Snow, Sleet Mean total January	Snow, Sleet Mean total Seasonal	Snow, Sleet Extreme Maximum in 24 hours	Relative humidity (percent) January 7:30 a.m. EST	Relative humidity January 1:30 p.m. EST	Relative humidity January 7:30 p.m. EST	Relative humidity July 7:30 a.m. EST	Relative humidity July 1:30 p.m. EST	Relative humidity July 7:30 p.m. EST	Wind Speed (m.p.h.) Mean hourly January	Wind Speed Mean hourly July	Wind Speed Fastest mile	Sunshine (percent of possible) January	Sunshine July	Annual mean number of days Sunrise to sunset Clear	Sunrise to sunset Partly cloudy	Sunrise to sunset Cloudy	Precipitation .01 inch or more	Snow, sleet, 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max. 90° and above	Temperature Min. 32° and below	Temperature Min. Zero and below
OHIO							83	113	-39							0.00	8.70																								
Akron-Canton	1210	34.8	20.0	83.1	61.6	49.7	70	104	-20	1166	6203	4.20	2.20	37.33	11.98	.22	5.96	8.2	35.6	15.6	83	74	79	82	53	64	11.8	7.4	--	--	--	76	113	176	141	10	41	21	13	128	5
Cincinnati (U) (1950)	553	42.3	26.9	88.0	68.1	50.3	80	109	-17	942	4532	4.07	2.19	39.34	13.68	.13	5.22	5.4	18.1	11.0	--	--	--	--	--	--	8.9	5.5	49	40	72	c	c	c	130	7	46	10	26	89	1
Cincinnati	869	39.7	23.8	85.9	64.3	53.6	16	---	---	1021	5195	4.04	2.17	39.16	-----	----	----	---	----	----	82	70	74	84	52	60	---	---	--	--	--	108	115	142	---	--	--	--	---	---	--
Cincinnati Obs.	761	40.9	25.2	87.2	65.9	54.9	41	109	-17	989	4870	4.07	2.19	39.42	13.68	.17	4.77	5.1	18.1	11.0	82	70	74	84	52	61	8.6	5.5	49	41	72	110	114	141	135	7	52	18	30	97	1
Cleveland (U)	653	36.0	23.0	80.9	66.5	51.5	--	---	---	1101	5717	3.35	2.19	33.50	-----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Cleveland	787	36.0	20.9	84.7	62.6	50.6	16	103	-9	1132	6006	3.13	2.28	32.24	9.50	.61	3.44	10.4	52.6	15.0	81	72	79	79	52	58	12.3	8.7	74	28	70	74	107	184	156	20	39	14	21	120	3
Columbus (U)	724	38.2	23.9	85.8	65.8	53.4	--	---	---	1051	5277	3.66	2.00	34.36	-----	----	----	---	----	----	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Columbus	815	37.8	21.6	86.2	62.6	52.0	78	106	-20	1094	5615	4.33	2.18	37.96	10.71	.10	3.91	6.7	21.8	11.9	83	71	76	78	52	60	9.8	6.6	84	36	71	101	118	146	140	6	41	5	21	107	3
Dayton	1002	37.3	22.1	85.3	64.7	52.2	42	106	-16	1094	5597	3.90	2.18	35.22	12.41	.10	4.56	6.1	20.2	10.0	81	74	76	78	53	56	11.4	7.7	78	38	72	102	114	149	132	6	48	14	20	105	4
Portsmouth (R) (1954)	670	42.7	23.4	87.7	61.6	54.1	34	107	-25	989	4965	4.26	2.28	38.56	9.92	.51	3.43	8.8	32.9	10.1	b71	b59	b59	b88	b47	b54	7.7	3.4	60	--	--	a39	a75	a142	106	9	63	64	36	113	0
Sandusky (U)	603	35.7	21.8	83.7	65.5	51.3	79	105	-16	1122	5859	3.73	1.99	33.23	12.51	.09	5.95	8.0	28.2	12.3	81	68	78	72	56	65	10.8	7.6	77	34	71	91	121	153	138	12	34	6	13	111	3
Toledo	676	34.6	18.1	84.7	61.5	49.4	86	105	-16	1197	6394	3.55	1.92	31.90	8.49	.04	5.98	7.9	30.3	19.0	79	72	75	76	52	59	12.6	9.1	87	33	71	116	114	135	131	10	35	7	12	120	5
Youngstown	1178	34.9	20.0	83.3	61.2	49.8	13	100	-11	1163	6172	4.16	2.77	41.43	9.87	.43	4.31	10.7	50.9	20.7	84	74	80	82	53	65	11.7	7.5	--	--	--	75	103	187	165	16	39	29	11	134	4
OKLAHOMA							65	120	-27							0.00	19.75																								
Oklahoma City(U) (1953)	1254	47.2	28.3	93.1	71.8	61.0	63	113	-17	843	3519	4.42	1.28	32.59	14.12	T	7.87	c2.7	c7.8	c11.3	c79	c62	c65	c80	c49	c51	---	---	66	c57	c78	c161	c107	c97	82	c2	c45	c8	64	70	*
Oklahoma City	1280	47.0	27.2	93.3	70.9	60.4	17	109	-10	865	3644	4.25	1.34	30.32	10.78	T	4.82	3.6	8.9	8.4	79	63	63	82	53	49	15.7	12.2	87	57	78	160	93	112	79	2	51	17	74	76	*
Tulsa	672	46.9	27.9	93.1	71.1	60.6	18	112	-8	856	3584	5.15	1.63	37.74	18.00	T	7.30	4.1	8.6	9.0	79	61	64	83	53	52	12.1	9.3	75	49	72	125	110	130	87	3	57	7	72	75	1
OREGON							67	119	-54							0.00	10.17																								
Astoria	8	44.0	36.1	66.7	54.8	51.4	3	93	15	772	4995	13.21	1.07	76.30	18.94	.10	3.55	2.5	5.6	3.1	89	87	82	91	75	72	7.9	7.2	--	--	--	56	73	236	204	3	9	42	1	47	0
Baker (U) (1952)	3446	32.3	15.9	84.2	51.0	46.1	62	104	-25	1268	7087	1.31	.33	10.02	4.00	T	1.63	11.3	40.4	16.7	†83	†81	†78	†69	†68	†36	5.9	5.8	53	41	83	122	107	136	103	45	16	3	15	156	6
Burns (U)	4140	35.5	12.2	87.3	52.2	46.8	18	103	-20	1274	6918	1.47	.25	10.29	3.97	.00	1.85	15.5	48.7	10.9	b81	b72	b67	b56	b32	b21	---	---	--	--	--	118	102	145	89	17	12	7	20	184	6
Eugene	361	44.8	31.6	82.4	50.7	52.4	14	105	-3	831	4779	6.00	.26	37.67	19.49	T	4.82	5.6	8.3	7.2	y94	87	82	y89	55	39	9.1	8.2	--	--	--	77	88	200	143	3	5	55	13	63	*
Meacham	4050	32.0	17.7	77.3	49.0	43.5	12	97	-15	1243	7888	4.51	.42	34.87	9.29	.00	3.00	33.6	158.4	22.9	80	81	--	42	35	--	---	---	--	--	--	88	73	204	152	47	19	26	2	172	4
Medford	1312	44.6	29.8	88.8	54.7	54.0	27	115	-3	862	4547	3.13	.17	18.22	9.16	.00	3.17	4.3	8.4	7.9	93	88	74	75	44	27	4.7	5.6	--	--	--	118	82	165	100	3	9	43	46	79	*
Pendleton	1492	36.9	24.2	89.0	59.9	52.7	21	110	-18	1066	5204	1.69	.26	13.01	3.03	.00	1.49	8.2	18.4	13.3	82	77	78	56	35	24	8.1	9.5	--	--	--	103	96	166	100	7	11	27	29	87	3
Portland (U)	30	44.2	34.7	79.2	57.8	54.6	54	107	3	791	4143	7.10	.42	40.09	17.45	.00	5.01	5.3	9.3	16.0	--	--	--	--	--	--	---	---	--	--	--	---	---	---	149	3	--	--	8	22	0
Portland	21	43.3	31.5	79.2	55.3	53.0	16	---	---	856	4632	6.17	.42	35.23	-----	----	----	---	---	----	87	82	78	86	63	48	9.8	6.8	57	19	65	67	68	230	---	--	8	23	---	---	--
Roseburg (U) (1952)	479	47.5	34.5	83.4	54.3	54.6	75	109	-6	744	4122	4.93	.20	30.50	12.82	.00	4.15	3.1	6.6	8.0	91	87	79	85	54	38	3.9	5.1	40	c	c	c	c	c	133	1	4	49	14	34	*
Roseburg	505	47.1	31.8	83.2	51.2	53.1	4	102	13	791	4556	4.93	.20	30.63	15.74	T	4.03	5.4	10.2	9.1	--	83	74	--	54	37	4.5	6.1	34	25	78	105	117	143	139	3	6	57	13	69	0
Salem	195	44.8	31.9	83.2	52.2	53.1	19	108	-10	825	4574	7.12	.32	40.02	15.40	.00	3.16	4.1	6.5	10.8	88	84	79	87	54	40	9.4	6.7	--	--	--	73	94	198	149	2	5	38	16	61	*
Sexton Summit (R)	3836	41.6	30.0	76.4	50.0	48.1	12	100	8	905	6217	4.70	.29	31.09	14.71	.00	5.20	27.4	101.9	18.3	88	87	--	62	45	--	---	---	--	--	--	118	71	176	135	33	7	174	2	116	0
Troutdale (1952)	29	42.2	31.4	80.0	53.1	52.4	7	103	3	874	4775	7.24	.53	42.92	11.25	.03	2.84	8.9	14.8	7.3	85	80	76	91	63	50	11.7	4.7	--	--	--	67	77	221	164	5	9	26	13	52	0
PENNSYLVANIA							69	111	-42							0.00	34.50																								
Allentown	376	36.5	20.4	85.5	62.7	50.9	13	102	-10	1132	5880	4.78	2.73	42.34	12.10	.34	4.79	7.4	25.9	12.3	80	64	72	79	51	65	10.3	6.6	--	--	--	90	119	156	127	8	34	33	20	127	2
Erie	732	34.2	20.1	80.6	60.1	48.3	83	99	-16	1172	6558	3.50	2.15	34.56	13.27	.02	10.42	12.4	54.6	26.5	84	79	73	79	64	70	12.4	7.6	60	22	66	88	120	157	159	15	33	3	4	117	2
Harrisburg	335	38.6	23.6	85.6	65.1	53.0	18	102	-4	1051	5258	3.70	2.32	36.09	9.07	.23	4.36	9.0	29.7	21.0	72	59	65	78	51	62	8.1	6.2	68	44	70	85	106	174	125	8	35	23	26	104	*
Park Place (U) (1953)	1932	30.8	16.8	77.8	59.5	46.1	24	98	-22	1277	7175	5.54	2.52	46.65	19.81	.72	7.83	9.8	44.8	16.0	86	74	78	82	63	77	---	---	--	--	--	83	104	178	138	15	25	104	2	145	5
Philadelphia(U) (1954)	26	41.5	28.2	85.3	69.0	55.7	84	106	-11	933	4523	4.62	2.61	41.44	12.10	.09	5.89	5.7	21.2	21.0	74	65	68	75	56	66	10.9	8.7	88	45	64	109	122	134	123	6	27	10	14	76	*
Philadelphia	13	40.9	25.4	86.5	66.0	54.3	15	102	1	986	4866	4.58	2.60	41.33	9.70	.11	4.81	5.1	17.0	9.8	77	60	69	78	52	65	10.4	8.1	67	42	64	91	117	157	121	5	29	33	27	92	0
Pittsburgh(U) (1952)	749	40.2	25.8	85.1	65.6	53.9	78	103	-20	992	5048	3.83	2.35	36.23	10.25	.06	4.08	8.6	34.7	17.5	77	67	63	77	53	60	11.7	8.7	73	32	64	85	128	152	151	11	41	25	16	102	2
Pittsburgh	1151	36.6	21.3	82.8	61.8	50.6	4	99	-7	1116	5905	4.07	2.37	36.92	8.20	.40	3.56	6.3	30.0	10.2	79	68	72	80	52	63	11.4	8.2	--	37	66	63	115	187	149	10	43	19	11	121	2
Pittsburgh Allegheny (1952)	1252	38.0	22.7	83.4	63.3	51.9	17	102	-16	1073	5555	3.84	2.35	36.49	10.25	.53	3.23	9.0	41.7	17.5	81	67	74	81	53	61	11.7	8.4	64	31	61	67	120	178	156	12	42	31	13	114	2
Reading (U)	266	39.1	25.3	85.2	66.1	53.7	59	105	-14	1017	5060	4.43	2.77	40.11	14.85	.04	6.08	8.5	29.3	15.5	73	54	69	74	49	64	9.4	7.1	95	44	61	105	118	142	126	6	33	14	20	96	*
Scranton (U)	746	35.4	21.0	83.2	61.9	50.1	c	c	c	1141	6047	4.43	2.02	36.61	c	c	c	c	c	c	c	c	--	c	c	--	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Scranton	940	34.3	19.5	83.0	61.4	49.3	56	103	-19	1181	6284	5.33	2.10	42.59	11.76	.08	5.09	9.7	41.3	20.0	80	N67	--	77	N50	--	7.4	5.8	60	37	64	82	130	153	138	13	32	7	9	119	2
Williamsport	527	36.0	20.9	85.2	61.4	50.7	61	106	-18	1132	5898	4.31	2.43	39.58	10.32	.16	5.22	9.8	36.6	13.7	77	63	71	84	52	66	---	---	--	--	--	67	118	180	131	10	--	--	19	129	4
RHODE ISLAND							69	102	-23							0.00	12.13																								
Block Island	110	38.0	25.7	75.3	62.9	49.9	76	95	-10	1026	5843	3.67	2.55	38.74	12.93	T	6.63	4.9	19.9	12.0	79	74	77	88	77	90	19.8	12.7	--	45	62	125	115	125	122	7	17	53	*	85	*
Providence (U)(1952)	12	37.6	23.0	82.6	64.4	51.4	c	c	c	1076	5607	3.75	2.83	39.63	c	c	c	c	c	c	--	--	--	--	--	--	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Providence	55	36.8	20.6	80.0	61.9	49.4	52	102	-17	1125	6125	3.75	2.83	39.73	12.24	.04	6.17	9.5	32.9	15.0	73	60	67	79	57	73	11.8	9.1	95	49	63	126	110	129	125	10	21	33	9	108	2
SOUTH CAROLINA							72	111	-13							0.00	13.25																								
Charleston (U)	9	59.0	43.8	88.0	75.0	66.6	86	104	7	445	1769	8.04	1.92	46.11	19.18	.01	10.57	T	.2	3.9	--	--	--	--	--	--	9.9	9.3	76	58	66	129	133	103	110	*	57	16	28	9	0
Charleston	41	61.4	39.2	89.4	70.8	65.2	15	---	---	472	1973	8.04	2.05	48.14	17.31	.04	----	---	---	---	87	55	76	88	64	82	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Columbia (U)	332	57.0	38.7	90.2	71.3	64.4	c	c	c	538	2284	5.74	2.00	41.58	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Columbia	217	58.1	35.9	91.9	70.8	64.0	69	107	-2	566	2435	6.56	2.25	46.28	16.72	.04	7.66	.4	2.0	11.7	81	57	65	83	56	68	8.0	6.9	54	53	63	138	115	112	112	*	49	12	62	33	*
Florence	146	56.3	36.3	91.9	70.6	63.6	75	108	-1	588	2507	6.45	2.27	45.46	21.33	.00	9.15	.5	1.3	10.0	84	53	68	85	55	72	---	---	--	--	--	170	86	109	106	0	53	27	55	38	0
Greenville	1018	51.6	35.0	87.9	68.8	61.0	39	104	4	673	3060	4.81	3.00	47.81	13.36	.07	7.35	1.5	3.8	14.4	79	58	69	81	54	67	8.4	6.9	79	53	66	129	110	126	123	*	52	16	41	42	0
Spartanburg	801	52.1	34.7	88.7	69.1	61.2	26	104	5	670	3044	4.70	2.97	46.81	12.00	.04	6.85	1.1	3.2	11.2	--	--	--	--	--	--	---	---	--	--	--	114	121	130	111	1	48	20	53	50	0
SOUTH DAKOTA							67	120	-58							0.00	8.00																								
Huron	1282	24.8	2.1	89.5	61.3	45.7	17	110	-34	1597	7902	3.06	.45	17.56	7.12	T	4.15	6.7	37.2	10.7	79	72	76	86	52	49	11.8	11.1	73	52	77	105	115	145	93	13	44	14	29	171	33
Rapid City	3165	33.1	9.1	85.8	58.8	46.1	14	109	-27	1361	7535	3.36	.34	17.12	7.35	.01	3.17	6.3	36.9	16.3	71	59	67	71	42	40	9.7	10.1	65	55	73	110	118	137	93	12	50	16	31	166	22
Sioux Falls	1420	24.4	4.0	87.9	61.6	45.8	64	110	-42	1575	7848	4.25	.67	25.27	9.42	.00	4.13	6.3	32.2	18.9	74	65	72	84	52	52	11.4	9.6	--	--	--	103	107	155	92	11	47	21	27	170	31

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F)								Normal degree days (1921-1950)		Precipitation (inches)									Relative humidity (percent)						Wind Speed (m.p.h.)			Sunshine (percent of possible)		Annual mean number of days									
		Normal (1921-1950)					Extremes					Normal (1921-1950)			Extremes			Snow, Sleet			January			July			Mean hourly		Fastest mile			Sunrise to sunset			Precipitation .01 inch or more	Snow, sleet, 1.0 inch or more	Thunderstorms	Heavy fog	Temperature		
		January		July														Mean total		Extreme							January	July		January	July	Clear	Partly cloudy	Cloudy					Max.	Min.	
		Daily maximum	Daily minimum	Daily maximum	Daily minimum	Annual	Length, yrs.	Record highest	Record lowest	January	Seasonal	Wettest month	Driest month	Annual	Wettest month	Driest month	Maximum in 24 hours	January	Seasonal	Maximum in 24 hours	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST													90° and above	32° and below	Zero and below
TENNESSEE							74	113	-32							0.00	11.00																								
Bristol	1519	48.5	28.6	85.5	64.0	56.4	19	102	-10	818	4148	5.14	2.39	41.36	9.73	.60	3.21	3.4	11.1	16.2	85	65	72	88	56	68	6.9	4.1	--	--	--	90	118	157	133	3	50	41	25	95	*
Chattanooga	670	51.6	31.6	89.6	67.0	60.0	78	106	-10	725	3384	6.05	2.69	53.78	15.29	.04	7.61	2.1	5.9	12.0	80	62	68	83	56	67	7.6	5.5	82	43	61	115	132	118	132	3	58	27	40	51	*
Knoxville	950	49.8	31.1	89.1	67.6	59.3	86	104	-16	760	3590	4.91	2.53	45.69	17.32	.07	6.20	2.6	9.0	18.2	83	65	69	83	55	66	7.3	5.9	71	42	64	119	122	124	132	3	47	18	32	64	*
Memphis (U)	271	49.3	34.5	89.4	73.2	62.4	c	c	c	716	3006	5.38	2.50	46.81	c	c	c	c	c	c	--	--	--	--	--	--	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Memphis	263	50.3	32.9	91.1	71.3	61.8	82	106	-11	725	3137	5.59	2.55	49.57	18.16	.00	10.48	1.9	5.2	18.0	82	67	73	85	55	59	12.4	8.0	57	45	73	142	106	117	111	2	50	6	54	45	*
Nashville	577	48.9	30.9	90.6	69.3	60.1	86	107	-13	778	3513	5.28	2.52	45.19	14.75	.03	6.05	2.7	8.4	17.0	84	66	72	81	53	61	9.6	7.0	73	42	69	120	121	124	120	3	52	11	42	62	*
Oak Ridge (R)	905	48.3	27.9	90.1	65.5	57.9	9	105	0	834	4028	6.06	2.42	53.92	13.27	.54	4.73	2.5	5.4	6.5	--	--	--	--	--	--	4.9	3.7	--	--	--	123	102	140	128	2	55	34	46	81	*
Oak Ridge Area	886	48.6	28.3	90.0	65.1	57.8	12	103	1	822	4006	5.64	2.77	52.57	12.84	.50	7.75	---	---	---	--	--	--	--	--	--	5.8	3.8	--	--	--	---	---	---	118	--	--	--	43	76	0
TEXAS							79	120	-23							0.00	36.40																								
Abilene	1759	55.1	31.4	94.6	71.5	64.1	17	109	-9	673	2657	3.68	.88	22.58	8.98	.00	4.06	1.5	3.2	5.0	76	54	55	75	43	38	13.5	11.8	109	59	78	153	100	112	62	1	42	4	111	45	*
Amarillo	3590	48.9	21.6	91.8	63.8	56.6	16	108	-14	921	4345	3.25	.64	21.15	9.81	.00	6.75	4.0	12.4	12.2	71	51	52	77	43	42	13.1	12.3	84	65	75	161	109	95	65	3	52	23	75	112	1
Austin	615	59.8	40.0	94.4	73.7	68.2	15	109	-2	484	1713	4.37	1.67	35.27	9.25	.00	4.68	.9	1.0	7.0	82	62	63	89	50	48	9.9	8.8	57	48	78	124	115	126	81	*	41	21	114	19	*
Big Spring (1952)	2569	55.8	33.0	94.6	70.7	64.6	51	117	-7	639	2480	2.78	.60	17.39	12.89	.00	6.77	.8	2.7	3.5	--	--	--	--	--	--	---	---	--	--	--	175	109	81	54	1	40	11	110	65	*
Brownsville	16	68.9	52.0	91.8	75.7	73.6	17	104	22	219	617	6.27	1.14	29.59	13.06	T	8.18	T	T	T	89	65	75	92	55	66	12.1	11.7	57	48	80	98	141	126	69	0	27	24	116	1	0
Corpus Christi	41	66.3	47.4	92.5	75.0	71.7	18	104	18	299	924	4.70	1.39	28.06	14.54	.00	7.68	.1	.1	1.1	88	66	75	93	58	68	12.3	11.9	70	49	86	119	119	127	74	*	34	24	101	5	0
Dallas	487	55.3	36.0	95.4	75.6	66.5	16	111	2	607	2272	4.97	1.83	34.51	12.60	T	9.18	1.3	1.8	3.3	81	62	62	79	50	47	10.0	9.9	65	46	78	147	96	122	79	1	42	6	105	33	0
Del Rio	1091	62.2	41.6	93.3	76.1	69.8	51	111	11	419	1407	2.51	.80	18.62	13.71	.00	8.88	.4	.7	4.7	81	58	53	80	50	41	7.8	9.7	62	53	75	153	118	94	61	*	24	6	118	14	0
El Paso	3920	55.8	30.9	93.5	69.0	63.3	17	107	-6	670	2641	1.32	.27	7.84	5.19	.00	2.89	1.8	3.7	7.2	63	45	39	60	37	30	10.1	9.7	70	75	77	198	99	68	43	1	38	1	101	53	*
Fort Worth Meacham Fld (1952)	688	54.9	35.5	95.0	74.2	65.9	15	110	-2	622	2361	4.84	1.75	32.29	16.97	T	6.03	1.5	2.9	4.5	79	60	61	80	49	47	12.4	10.6	61	54	76	139	104	122	84	1	45	10	98	34	*
Fort Worth Amon Carter	544	54.9	35.6	95.2	74.9	66.0	3	109	13	619	2338	4.92	1.88	33.78	6.58	.11	2.80	1.7	2.5	3.8	78	60	62	69	38	36	12.3	12.0	--	--	--	172	99	94	59	1	41	61	124	38	0
Galveston (U)	7	59.8	49.2	87.4	78.6	70.1	86	101	8	356	1211	5.44	2.98	45.29	26.01	.00	14.35	T	.2	15.4	87	77	83	82	69	74	11.4	9.6	91	50	72	143	124	98	98	*	48	20	13	4	0
Galveston	5	60.4	48.2	88.7	77.9	70.1	16	---	--	362	1233	5.82	3.14	47.98	20.57	T	----	---	---	---	c	c	c	c	c	c	---	---	--	--	--	c	c	c	---	--	c	c	---	---	--
Houston (U)	41	61.9	45.7	92.3	75.2	70.0	18	105	10	378	1276	4.84	2.89	45.46	17.64	.01	10.83	.3	.3	3.0	c	c	c	c	c	c	10.8	8.4	73	45	66	97	121	147	103	*	57	15	90	6	0
Houston	50	62.6	44.0	92.2	72.9	68.9	17	---	--	394	1388	4.91	2.70	46.93	22.31	T	----	---	---	---	85	66	73	90	58	66	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Laredo	500	68.8	46.4	99.7	75.7	74.3	20	115	18	270	781	3.18	.89	19.53	8.62	.00	5.55	.1	.2	2.0	82	57	53	83	46	41	10.3	15.5	--	--	--	128	124	113	55	*	31	12	178	6	0
Lubbock	3243	51.8	25.7	92.0	66.6	59.5	10	106	-9	812	3587	3.36	.55	18.91	7.80	.00	5.14	1.2	4.7	8.0	72	48	49	76	45	40	12.8	12.4	70	--	--	179	102	84	54	3	46	11	89	104	*
Midland	2854	56.6	31.8	94.2	69.7	64.2	9	109	-1	645	2565	2.14	.62	16.23	4.11	.00	----	1.8	2.5	---	--	--	--	--	--	--	---	---	--	--	--	---	---	---	21	*	--	--	105	46	*
Palestine (U)(1952)	491	57.2	39.6	92.0	73.0	66.5	71	108	-6	531	1980	4.69	1.76	40.54	17.25	T	12.06	.8	1.8	9.0	82	64	65	87	54	58	8.0	6.2	45	46	79	132	123	110	94	1	46	12	73	22	*
Port Arthur (U)(1952)	5	60.9	46.5	90.0	76.1	69.5	36	102	11	381	1340	6.48	3.25	53.24	24.25	.00	17.76	.2	.3	2.7	--	--	--	--	--	--	11.0	9.0	91	47	68	125	124	116	108	*	72	20	56	6	0
Port Arthur	16	61.7	44.0	90.7	72.6	68.1	3	100	24	406	1517	6.80	2.93	55.35	12.86	.06	7.18	T	T	T	88	70	79	91	70	73	12.5	9.1	69	42	63	112	131	122	87	0	67	37	89	7	0
San Angelo	1903	57.2	37.3	94.4	71.0	66.2	9	107	1	556	2107	2.96	.95	19.86	5.00	.00	4.65	1.5	2.0	5.1	70	48	43	72	41	36	10.4	9.7	60	--	--	170	98	97	48	1	37	4	115	41	0
San Antonio	792	60.9	40.3	95.1	73.2	68.8	16	106	0	462	1579	3.52	1.40	27.96	15.78	.00	6.87	.4	.4	4.7	82	60	59	88	49	45	9.0	8.6	74	46	74	107	121	137	75	*	39	21	118	17	*
Victoria	110	64.1	46.2	92.8	76.8	71.2	10	107	12	352	1126	4.13	2.05	35.74	8.92	.01	5.36	.1	.1	1.0	86	62	69	93	52	60	11.4	9.5	62	--	--	104	124	137	87	*	46	27	120	9	0
Waco	500	57.1	37.5	95.4	74.6	67.3	14	108	-5	557	2025	4.15	1.38	33.05	9.72	.00	7.18	1.1	1.4	7.0	83	64	64	83	50	46	12.3	11.1	--	--	--	134	104	127	74	*	51	12	111	26	*
Wichita Falls	1020	51.7	29.4	94.8	72.7	63.1	13	110	-12	756	3025	3.86	1.31	26.69	11.86	.00	4.49	2.2	4.8	5.0	76	56	59	75	46	42	11.8	10.7	--	--	--	168	96	101	66	2	47	10	107	61	*
UTAH							66	116	-50							0.00	4.50																								
Blanding (1952)	6036	38.1	15.0	87.3	57.3	49.6	46	110	-23	1190	6138	1.47	.58	12.77	7.01	.00	----	---	---	---	--	--	--	--	--	--	---	--	--	--	--	---	---	---	---	--	--	--	---	---	--
Milford	5028	36.0	11.5	92.5	55.5	49.0	8	104	-28	1277	6445	1.06	.40	8.47	1.98	.00	1.20	12.3	40.2	16.3	68	67	80	28	26	44	11.5	9.0	--	--	--	159	104	102	52	14	30	7	56	180	17
Salt Lake City (U) (1953)	4260	36.6	21.1	91.7	64.7	53.0	80	105	-20	1119	5463	1.91	.59	15.81	5.81	.00	2.72	12.5	55.1	15.3	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	31	106	1
Salt Lake City	4220	35.9	17.0	92.3	60.8	51.3	28	106	-30	1194	5866	1.76	.61	14.79	4.90	.00	2.03	13.7	51.9	15.4	80	71	72	56	27	23	7.6	9.5	71	46	82	135	108	122	88	17	35	10	52	133	5
VERMONT							69	105	-50							0.00	8.77																								
Burlington	331	27.6	8.2	82.4	58.4	44.5	50	101	-29	1460	7865	3.75	1.58	32.27	11.54	.15	4.49	14.4	65.0	24.2	81	69	78	76	54	67	11.7	8.2	72	34	62	71	109	185	148	20	27	11	4	155	21
VIRGINIA							66	110	-29							0.00	11.20																								
Cape Henry (U) (1952)	16	49.4	35.5	84.8	70.6	59.7	79	104	5	698	3307	5.31	2.48	41.64	16.82	.00	7.18	2.0	7.1	12.0	80	69	76	82	68	80	13.1	9.6	134	50	67	131	117	117	119	3	39	23	19	37	0
Lynchburg	947	46.6	28.7	86.1	65.9	56.6	85	106	-7	846	4153	4.35	2.37	39.65	14.87	.03	7.59	4.2	13.5	16.4	74	58	67	80	56	69	8.4	6.6	63	48	68	126	133	106	124	4	35	22	32	78	*
Norfolk (U)	11	50.7	35.4	86.7	70.7	60.7	c	c	c	679	3119	6.05	2.45	43.26	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Norfolk	26	50.0	33.0	86.0	68.9	59.2	86	105	2	729	3454	6.05	2.45	43.37	15.61	.04	6.84	2.5	8.6	17.7	79	61	71	81	60	76	11.9	9.5	80	50	66	128	115	122	125	3	38	16	26	41	0
Richmond (U)	162	48.4	30.7	87.3	68.4	56.6	c	c	c	787	3720	5.38	2.41	42.17	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Richmond	162	48.1	28.4	87.8	67.2	57.7	59	107	g-3	828	3955	5.64	2.49	42.98	16.08	.11	8.79	3.5	12.2	17.2	84	60	68	81	57	72	8.2	6.5	68	49	66	130	113	122	123	4	40	18	33	71	*
Roanoke	1174	46.6	29.2	86.8	65.0	56.6	18	104	4	840	4152	4.91	2.65	41.67	12.91	.37	6.27	4.3	15.2	13.8	74	56	65	81	52	66	9.8	6.2	--	--	--	104	120	141	123	5	45	27	36	83	0
WASHINGTON							90	118	-42							0.00	12.00																								
Ellensburg (1952)	1727	32.6	15.6	84.7	54.3	47.9	12	103	-28	1268	6542	1.47	.14	8.53	3.13	T	1.14	13.2	38.5	11.2	--	--	--	--	--	--	5.8	17.2	--	--	--	110	99	156	81	14	10	36	20	160	9
Kelso (1952)	17	43.6	31.1	75.8	50.2	50.7	6	96	-1	856	5239	6.74	.67	41.06	10.75	.05	3.06	10.3	16.9	7.7	89	84	80	93	65	56	---	---	--	--	--	57	83	225	161	5	--	--	3	75	*
North Head (1952)	194	46.5	38.0	61.2	53.4	50.7	65	97	11	704	5211	9.03	.85	54.34	22.28	.00	4.29	2.7	5.2	8.0	87	80	84	92	87	84	16.4	14.0	113	28	49	67	90	208	194	--	3	44	*	11	0
Olympia	190	43.3	30.6	76.3	49.2	50.0	15	103	-1	868	5501	8.66	.66	45.93	19.84	.00	4.93	8.5	16.9	13.7	91	87	81	92	61	47	6.9	5.3	--	--	--	52	94	219	161	6	3	93	5	87	*
Omak (1952)	1228	27.8	14.9	87.9	54.2	47.4	43	114	-26	1352	6806	1.52	.34	11.27	5.31	.00	2.21	8.6	29.3	---	--	--	--	--	--	--	---	---	--	--	--	---	---	---	59	--	--	--	--	---	--
Port Angeles (1952)	11	43.7	36.5	63.9	51.0	49.0	6	80	11	772	5850	4.34	.44	23.03	7.15	.09	3.34	6.3	9.4	5.6	82	78	77	89	79	76	9.7	13.8	--	--	--	62	84	219	141	5	4	40	0	16	0
Seattle (U)	14	45.2	36.2	75.1	56.1	53.2	23	100	11	753	4438	5.34	.52	32.05	10.93	T	3.31	5.0	8.6	11.5	--	--	--	--	--	--	10.1	7.8	65	28	61	72	93	200	149	2	6	--	1	15	0
Seattle (Boeing Fld.)	14	45.0	33.0	76.2	54.1	52.2	16	---	--	806	4785	5.72	.58	34.28	15.43	T	----	---	---	---	86	80	74	86	63	47	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Seattle-Tacoma	386	43.0	31.4	75.0	52.8	50.7	12	96	0	862	5275	5.68	.58	33.93	12.92	.11	3.41	8.8	17.9	21.4	88	85	83	91	69	50	11.4	9.5	--	--	--	53	83	229	163	5	9	55	1	56	*
Spokane	2357	30.2	19.6	82.4	56.8	47.1	9	100	-24	1243	6852	2.21	.36	14.97	5.71	T	1.67	24.1	64.0	13.0	84	79	78	66	39	27	8.2	7.6	56	26	80	91	92	182	117	21	9	44	14	145	8
Stampede Pass (R)	3958	27.5	19.8	67.2	46.5	39.9	13	88	-11	1280	9149	14.66	1.29	93.99	29.06	.36	7.01	93.1	478.1	36.2	94	94	93	85	66	61	12.8	12.3	94	--	--	68	60	237	204	85	7	253	0	191	4
Tacoma (U) (1952)	127	44.2	34.4	73.7	54.9	51.8	56	98	7	797	4866	5.90	.61	35.20	18.87	.00	3.79	5.7	12.1	16.0	92	82	81	87	61	50	7.9	7.6	61	21	61	73	107	185	150	4	5	30	*	32	0
Tatoosh Is. (R)	101	44.9	39.0	59.2	51.7	49.3	54	88	14	713	5724	12.04	1.99	76.04	22.57	.02	5.91	3.8	7.9	12.0	85	83	83	95	89	88	19.9	9.7	94	26	48	60	80	225	196	3	5	60	0	8	0

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F)								Normal degree days (1921-1950)		Precipitation (inches)									Relative humidity (percent)						Wind Speed (m.p.h.)			Sunshine (percent of possible)		Annual mean number of days									
		Normal (1921-1950)					Extremes					Normal (1921-1950)			Extremes			Snow, Sleet			January			July			Mean hourly					Sunrise to sunset							Temperature		
		January		July														Mean total		Extreme																			Max.	Min.	
		Daily maximum	Daily minimum	Daily maximum	Daily minimum	Annual	Length, yrs.	Record highest	Record lowest	January	Seasonal	Wettest month	Driest month	Annual	Wettest month	Driest month	Maximum in 24 hours	January	Seasonal	Maximum in 24 hours	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST	7:30 a.m. EST	1:30 p.m. EST	7:30 p.m. EST	January	July	Fastest mile	January	July	Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet, 1.0 inch or more	Thunderstorms	Heavy fog	90° and above	32° and below	Zero and below
WASHINGTON (Cont'd.)																																									
Walla Walla (U)	949	37.7	26.3	89.3	63.0	54.2	42	112	-16	1023	4848	1.86	.28	15.12	4.52	0.00	2.02	8.0	21.0	14.0	80	74	78	50	33	22	5.2	5.4	54	24	85	122	93	150	106	6	10	13	36	66	1
Yakima	1061	35.9	17.8	89.9	52.9	50.2	10	103	-25	1181	5845	1.10	.18	7.23	3.25	.00	1.27	12.8	28.9	8.5	84	75	74	71	35	26	6.1	7.7	35	34	86	113	91	161	71	11	9	21	33	156	6
WEST VIRGINIA							66	112	-37							0.00	19.00																								
Charleston	950	46.3	26.5	87.3	63.5	55.8	48	108	-17	887	4417	5.45	2.81	45.12	11.32	.00	3.70	4.9	16.8	15.1	79	64	70	88	53	67	8.8	5.9	--	--	--	62	117	186	149	7	45	111	29	95	*
Elkins	1970	42.8	21.5	82.5	57.4	50.4	58	99	-28	1017	5773	5.26	2.86	44.15	11.10	.26	5.45	11.0	47.6	18.8	82	65	77	94	61	76	6.3	3.7	72	33	56	72	116	177	171	20	46	69	3	132	5
Huntington (U)	565	48.0	28.0	88.6	65.2	57.4	16	105	-10	837	4073	4.82	2.43	41.89	8.93	.22	4.23	5.4	15.9	10.3	--	--	--	--	--	--	---	---	--	--	--	---	---	---	133	--	--	--	49	101	1
Parkersburg (U)	615	42.7	26.1	86.2	65.1	54.9	68	106	-27	949	4750	4.18	2.12	39.21	11.46	.07	4.81	6.7	24.3	18.3	82	N66	74	80	N52	67	7.2	5.1	66	29	63	110	103	152	144	6	42	11	23	97	2
Petersburg (U)	1013	44.6	23.0	88.0	60.6	53.8	13	102	-14	967	4966	3.48	1.64	30.77	17.15	.36	7.41	5.9	20.7	11.6	76	51	60	90	53	68	---	---	--	--	--	83	105	177	125	6	40	36	34	116	1
WISCONSIN							66	114	-54							0.00	11.72																								
Green Bay	689	24.5	7.7	81.1	58.7	43.6	7	99	-31	1516	8259	3.57	1.26	26.56	6.50	T	3.68	8.9	42.3	9.3	75	68	73	85	58	64	10.3	8.2	109	46	64	95	99	171	120	14	38	30	7	167	24
La Crosse	652	25.0	6.3	85.1	62.8	46.2	6	103	-37	1528	7650	3.87	1.15	28.96	9.16	.02	3.84	8.9	42.6	9.1	79	68	73	85	59	61	8.7	7.7	60	--	--	91	95	179	112	13	49	22	16	155	22
Madison (U)	938	26.7	11.8	82.2	64.0	46.9	87	107	-29	1417	7300	4.11	1.27	30.71	10.69	T	5.31	9.6	37.9	12.9	--	--	--	--	--	--	---	---	--	--	--	---	---	---	115	11	--	--	8	143	18
Madison	857	27.9	10.3	85.7	60.2	46.6	17	102	-37	1423	7417	4.02	1.18	30.05	10.93	.06	5.25	8.6	38.6	10.3	76	67	74	82	52	59	11.1	8.8	77	46	75	99	97	169	115	14	41	21	19	153	18
Milwaukee (U)	620	30.0	16.0	80.1	64.4	47.7	--	---	--	1302	6944	3.36	1.42	28.37	----	----	----	---	---	---	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Milwaukee	672	29.2	14.5	81.2	61.4	46.8	16	101	-24	1336	7205	3.33	1.32	27.62	9.87	.15	5.28	11.5	39.4	12.3	76	70	73	81	58	64	13.3	9.9	73	38	70	93	104	168	119	12	36	25	11	137	11
WYOMING							97	114	-63							0.00	5.50																								
Casper	5322	31.8	12.8	86.3	55.8	45.1	17	104	-40	1324	7638	2.32	.65	14.12	5.75	T	3.09	9.9	70.7	20.6	67	56	60	65	30	26	17.9	10.6	--	--	--	106	117	142	90	21	39	7	26	171	16
Cheyenne	6131	37.1	13.8	82.6	53.6	44.9	21	100	-34	1225	7562	2.46	.52	16.28	5.32	T	2.68	6.7	58.0	16.5	59	48	55	73	36	40	14.2	9.4	69	61	69	103	138	124	99	18	53	21	10	178	13
Lander	5563	28.0	5.6	84.4	56.3	43.2	10	101	-31	1494	8303	2.57	.49	14.21	6.88	T	3.56	7.4	88.8	19.8	67	58	57	56	33	28	6.8	7.8	72	63	78	128	128	109	69	22	33	2	21	188	22
Rock Springs (1953)	6741	27.8	8.2	83.7	53.8	42.5	22	98	-33	1457	8473	1.10	.41	8.82	3.71	T	2.80	6.4	44.6	8.9	73	65	66	58	27	26	13.6	10.1	--	--	--	102	121	142	84	16	40	7	7	196	19
Sheridan	3942	32.8	7.4	86.1	55.0	44.5	16	106	-31	1392	7903	2.64	.64	16.78	9.54	.07	3.84	9.7	69.8	26.7	73	62	66	73	36	35	7.7	7.5	84	57	76	100	120	145	109	22	39	7	27	181	23
PACIFIC AREA																					b	b	b	b	b	b															
Canton Island	9	88.0	78.0	90.0	78.4	83.7	10	98	70	----	----	3.78	.27	20.04	11.50	T	4.33	.0	.0	.0	79	79	65	80	79	65	---	---	--	--	--	83	190	92	96	0	4	0	170	0	0
Koror (R)	94	85.0	75.4	85.2	75.8	80.9	7	93	69	----	----	18.81	7.68	148.24	27.46	1.65	11.57	.0	.0	.0	87	91	80	90	92	82	---	---	--	--	--	4	86	275	282	0	44	0	56	0	0
Majuro, Marshall Is.	10	----	----	---	---	----	1	88	70	----	----	-----	----	-----	24.26	3.44	7.19	.0	.0	.0	82	83	78	84	85	80	---	---	--	--	--	19	99	247	272	0	20	0	0	0	0
Ponape (R)	119	86.4	76.0	88.0	72.7	81.0	6	96	68	----	----	19.66	8.15	182.72	33.04	3.32	6.98	.0	.0	.0	85	84	77	96	97	80	---	---	--	--	--	5	86	274	305	0	30	0	50	0	0
Truk (Moen Is.)	8	85.3	76.5	86.6	74.0	80.8	6	94	70	----	----	13.46	6.63	132.15	24.14	.84	10.44	.0	.0	.0	82	84	78	88	91	80	---	---	--	--	--	11	70	284	288	0	20	0	*	0	0
Wake Island	11	81.1	73.8	86.3	77.6	79.9	9	91	64	----	----	8.90	1.26	41.35	E17.66	.27	E15.00	.0	.0	.0	74	75	66	81	82	73	13.5	12.4	--	--	--	127	157	81	190	0	7	0	2	0	0
Yap (R)	53	85.4	76.1	87.6	75.7	81.6	8	97	70	----	----	16.60	4.71	122.31	29.44	1.08	8.87	.0	.0	.0	85	87	78	89	91	79	10.0	4.2	--	--	--	13	74	278	264	0	12	0	70	0	0
HAWAII							52	100	18							0.00					b	b	b	b	b	b															
Hilo	31	78.4	62.4	82.6	67.0	73.0	10	93	55	----	----	15.99	6.75	140.35	50.82	.36	13.41	.0	.0	.0	85	82	69	88	83	68	6.5	5.9	--	49	46	22	114	229	288	0	8	0	*	0	0
Honolulu (U)	12	76.7	67.2	82.2	73.5	75.2	34	88	57	0	0	4.31	.63	23.99	16.70	.06	8.07	.0	.0	.0	--	--	--	--	--	--	z9.1	z10.0	z62	z62	z67	z108	z178	z79	149	0	--	0	0	0	0
Honolulu	7	78.6	65.8	84.6	73.0	75.9	--	---	--	----	----	4.65	.23	21.70	----	----	----	---	---	---	80	80	62	74	69	56	9.6	13.4	59	66	72	107	160	98	---	0	7	0	0	0	0
Lihue	115	77.4	62.7	82.4	72.4	74.0	6	88	51	----	----	6.23	1.65	42.63	18.45	.66	11.20	.0	.0	.0	84	85	69	81	77	65	10.3	12.7	43	46	56	52	171	142	211	0	10	0	0	0	0
CARIBBEAN																																									
St. Croix (1953)	53	82.5	69.1	88.2	75.5	79.1	6	95	62	----	----	5.84	2.05	42.35	15.23	.17	7.76	.0	.0	.0	76	66	80	77	70	84	12.7	13.0	--	--	--	39	216	110	196	0	43	0	27	0	0
Swan Island (1954)	28	82.5	73.3	87.4	77.4	80.7	12	92	64	----	----	9.25	1.00	53.82	27.61	.02	10.77	---	---	---	b80	b72	b80	b85	b75	b81	10.5	9.4	40	--	--	95	159	111	157	0	45	0	19	0	0
PUERTO RICO							57	103	40							0.00																									
San Juan (U)	47	79.6	70.2	84.2	75.7	78.0	58	94	62	----	----	6.51	2.42	60.07	16.88	.05	10.55	.0	.0	.0	81	71	77	78	76	82	12.3	13.1	E149	64	65	93	196	76	211	0	50	0	9	0	0
San Juan	9	80.1	69.5	86.0	75.0	78.1	--	---	--	----	----	7.49	2.78	67.80	----	----	----	---	---	---	c	c	c	c	c	c	c	c	c	c	c	c	c	c	---	--	--	--	---	---	--
Santa Isabel (1953)	28	83.0	64.9	86.9	72.0	76.7	8	96	57	----	----	4.54	.48	32.66	12.37	.05	6.62	.0	.0	.0	78	59	76	61	58	67	6.7	7.4	--	--	--	105	175	85	99	0	70	0	35	0	0
ALASKA (Northern)							70	100	-76							0.00																									
Anchorage	92	20.4	5.5	65.4	49.1	35.3	34	86	-38	1612	10789	2.71	.40	14.29	5.91	.00	2.06	11.1	60.9	17.7	74	74	72	85	74	62	5.2	5.5	66	41	47	74	88	203	102	22	1	25	#13	202	35
Barrow	22	-8.5	-21.6	46.0	33.3	10.1	36	78	-56	2483	19994	.83	.10	4.12	2.44	.00	1.00	2.1	26.0	15.0	63	64	62	96	92	89	10.8	11.8	70	--	--	65	50	182	66	3	*	63	#*	323	168
Bethel	10	14.6	-1.1	62.4	46.6	29.6	33	90	-52	1804	12880	4.02	.55	18.20	12.37	T	2.40	11.5	63.5	18.7	79	79	78	94	87	71	11.2	9.2	--	--	--	57	67	241	164	23	1	24	#7	224	81
Fairbanks	436	-.3	-19.2	70.5	51.2	26.2	27	93	-66	2319	14158	2.26	.29	11.93	6.88	T	2.33	13.3	60.2	15.5	67	68	68	88	72	52	3.3	5.8	60	34	45	72	90	203	111	19	8	20	#47	231	121
King Salmon	44	21.7	6.5	62.6	46.6	34.1	14	88	-40	1578	11235	4.01	.84	22.50	6.44	.00	1.45	7.8	46.5	9.5	--	--	--	--	--	--	---	---	--	--	--	---	---	---	150	14	--	--	#12	207	56
Kotzebue	10	.6	-13.7	58.5	46.7	20.6	14	82	-48	2220	16151	1.95	.27	8.03	5.18	T	1.80	4.3	38.7	8.6	70	70	70	90	86	78	15.0	12.9	--	--	--	85	74	206	113	12	*	22	#4	252	121
McGrath	334	1.1	-18.5	68.0	49.3	25.5	14	87	-64	2285	14390	3.63	.49	19.17	6.26	.01	2.39	15.3	88.2	15.2	70	69	71	88	75	57	2.6	5.4	--	--	--	65	66	234	145	25	5	11	#27	231	115
Nome	13	12.9	-1.7	55.4	43.8	26.3	10	80	-42	1841	14086	3.76	.59	18.72	7.82	.02	2.38	11.0	62.8	8.4	79	80	79	91	87	85	12.0	9.9	75	50	28	80	64	221	132	22	1	25	#2	239	94
Northway	1713	-8.5	-25.7	69.8	48.5	22.4	14	88	-72	2545	15506	2.89	.22	11.35	6.42	T	3.91	7.7	40.1	11.5	68	67	65	87	67	50	3.0	5.9	--	--	—	45	84	236	102	11	12	17	#37	247	138
ALASKA (Southern)							73	99	-51																																
Annette	110	38.6	30.5	62.5	51.0	45.6	9	86	1	942	7096	14.38	4.49	96.85	31.98	.71	5.62	15.2	52.4	14.2	77	77	73	93	81	74	14.3	8.7	--	--	--	42	55	268	222	17	1	18	#15	88	0
Cold Bay	90	33.5	24.7	54.4	45.5	38.4	12	78	-9	1113	9687	4.38	1.34	33.28	9.97	.02	2.75	5.9	41.0	9.7	--	--	--	--	--	--	---	---	--	--	--	---	---	---	201	14	--	--	#*	162	2
Cordova	40	32.4	17.6	60.1	46.4	38.6	13	84	-33	1240	9615	15.56	4.19	98.83	27.72	.08	7.92	28.9	125.9	17.2	83	81	82	91	88	80	4.8	3.2	--	--	—	55	49	261	217	37	*	11	#7	194	23
Galena (1952)	120	-.9	-17.7	69.2	51.0	25.2	5	87	-64	2303	14538	2.84	.18	14.62	4.45	.08	2.34	8.8	51.2	9.0	69	70	69	82	73	59	6.0	8.2	--	—	--	72	77	216	126	17	5	11	#23	232	113
Juneau (U)	80	33.5	25.5	61.9	50.1	42.5	--	---	---	1101	8187	13.03	4.13	90.25	----	----	----	---	----	---	--	--	--	--	--	--	---	---	--	--	--	---	---	---	---	--	--	--	---	---	--
Juneau	15	31.2	21.1	62.4	47.0	40.6	13	84	-21	1203	8888	8.47	2.98	56.05	13.29	.27	4.66	18.6	90.9	31.0	79	79	77	88	78	67	8.7	7.2	68	28	28	44	38	283	223	26	*	20	#19	147	12
St. Paul Island	22	29.9	22.9	49.3	42.4	35.2	39	64	-26	1197	10839	3.49	1.02	24.28	9.32	.08	1.93	12.8	54.7	13.0	87	86	85	95	96	93	19.5	11.0	114	--	--	25	69	271	201	19	*	40	#0	189	4
Yakutat	28	33.0	19.9	58.6	46.8	39.3	10	84	-22	1194	9354	19.93	4.96	13.45	43.88	.52	7.13	44.8	216.2	26.0	80	81	79	97	84	79	9.8	7.2	--	--	--	41	45	279	227	50	1	32	#5	176	14

Data from airport or from airport and Urban site records combined.
U indicates Urban, R indicates Rural sites.
Data for this table are based on records through 1956 except as indicated in notes.
Date in Parenthesis after station name indicates last year included in summarization of data.
Normal values are based on the period 1921-1950, and are means adjusted to represent observations taken at the present standard location.

Leap year February and Annual Precipitation Normals are increased by normal precipitation for February 29.

Degree days are based on a daily average of 65°F.
Fastest mile is the speed of the wind recorded in the shortest time on an automatic recording wind instrument.
a clear day averages 0-3 tenths sky cover, partly cloudy 4-7 tenths and cloudy 8-10 tenths.
Heavy fog includes data formerly referred to as "Dense" or "Thick." The upper visibility limit for heavy fog is 1/4 mile.
* Less than one half
- Data not available

† Airport data
# Number of days Maximum 70°F or above (Alaskan stations)
E estimated during hurricane or typhoon
N computed as of noon local time
T trace, an amount too small to measure
a 21 day months used
b relative humidity recorded 30 minutes earlier

c airport and city office records combined
d sun below horizon November 18 - January 24
g city office data through 1952; record lowest at airport -12°F Jan. 1940.
t data for period through 1942
x data for period through 1952
y data for years through 1953
z data for years through 1954

ELEVATIONS–STATION PRESSURE

State and station	Ft.
ALABAMA	
Birmingham	700
Mobile	221
Montgomery	202
ARIZONA	
Flagstaff	7018
Phoenix	1107
Prescott	5022
Tucson	2555
Winslow	4883
Yuma	141
ARKANSAS	
Fort Smith	463
Little Rock	357
Texarkana	368
CALIFORNIA	
Bakersfield	492
Bishop	4145
Blue Canyon	5283
Burbank	725
Eureka CO	60
Fresno	327
Los Angeles CO	512
Los Angeles	104
Mt. Shasta CO	3587
Oakland	7
Red Bluff	353
Sacramento	25
Sandberg	4523
San Diego	87
San Francisco CO	----
San Francisco	18
Santa Maria	238
COLORADO	
Alamosa	7543
Colorado Springs	6170
Denver	5292
Grand Junction	4602
Pueblo	4690
CONNECTICUT	
Bridgeport	17
Hartford	159
New Haven	13
DELAWARE	
Wilmington	80
DISTRICT OF COLUMBIA	
Washington CO	----
Wash. Nat'l. AP	112
FLORIDA	
Apalachicola	35
Daytona Beach	41
Fort Myers	12
Jacksonville CO	----
Jacksonville	31
Key West CO	21
Lakeland CO	----
Miami CO	--
Miami	25
Miami Beach	----
Orlando	119
Pensacola CO	56
Tallahassee	68
Tampa	35
West Palm Beach	21
GEORGIA	
Athens	811
Atlanta	1173
Augusta	182
Columbus	394
Macon	370
Rome	643
Savannah	65
IDAHO	
Boise	2739
Idaho Falls CO 46W	4939
Idaho Falls CO 42NW	----
Lewiston	1436
Pocatello	4478
ILLINOIS	
Cairo CO	357
Chicago	623
Moline	606
Peoria	609
Springfield	636
INDIANA	
Evansville	431
Fort Wayne	857
Indianapolis	823
South Bend	773
IOWA	
Burlington	702
Des Moines	860
Dubuque	699
Sioux City	1138
Waterloo	878
KANSAS	
Concordia CO	1392
Dodge City	2509
Goodland	3688
Topeka	987
Wichita	1358
KENTUCKY	
Lexington	989
Louisville	525
LOUISIANA	
Baton Rouge	76
Lake Charles	32
New Orleans CO	53
New Orleans	3
Shreveport	249
MAINE	
Caribou	628
Portland	103
MARYLAND	
Baltimore CO	----
Baltimore	123
Frederick	----
MASSACHUSETTS	
Blue Hill. Obs.	640
Boston	124
Nantucket	12
Pittsfield	1169
MICHIGAN	
Alpena	609
Detroit	730
Detroit (Willow Run)	777
East Lansing CO	----
Escanaba CO	612
Flint	766
Grand Rapids	707
Marquette CO	734
Muskegon	633
Sault Ste. Marie	614
MINNESOTA	
Duluth	1133
International Falls	1126
Minneapolis	919
Rochester	1021
St. Cloud	1043
MISSISSIPPI	
Jackson	331
Meridian	375
Vicksburg CO	247
MISSOURI	
Columbia	784
Kansas City	963
St. Joseph	-
St. Louis CO	564
St. Louis	564
Springfield	1324
MONTANA	
Billings	3570
Glasgow	2086
Great Falls	3657
Havre	2507
Helena	4123
Kalispell	----
Miles City	----
Missoula	3263
NEBRASKA	
Grand Island	1856
Lincoln CO	--
Norfolk	1551
North Omaha	1323
North Platte	2821
Omaha	1105
Scottsbluff	3958
Valentine CO	2590
NEVADA	
Elko	5078
Ely	6262
Las Vegas	1869
Reno	4527
Winnemucca	4339
NEW HAMPSHIRE	
Concord	289
Mt. Washington	6267
NEW JERSEY	
Atlantic City CO	52
Newark	30
Trenton CO	190
NEW MEXICO	
Albuquerque	4972
Clayton	5052
Raton	6376
Roswell	3566
NEW YORK	
Albany	97
Binghamton	1638
Buffalo	768
New York Central Park	156
New York CO	314
New York	52
Rochester	523
Schenectady	217
Syracuse	596
NORTH CAROLINA	
Asheville	
Charlotte	779
Greensboro	886
Hatteras CO	11
Raleigh	376
Wilmington	38
Winston-Salem	978
NORTH DAKOTA	
Bismarck	1677
Devils Lake CO	1478
Fargo	940
Williston CO	1878
OHIO	
Akron	1052
Cincinnati CO	627
Cincinnati Obs.	----
Cincinnati	877
Cleveland	762
Columbus CO	----
Columbus	822
Dayton	1003
Sandusky CO	629
Toledo	692
Youngstown	1186
OKLAHOMA	
Oklahoma City	1214
Tulsa	674
OREGON	
Astoria	22
Burns	4162
Eugene	373
Meacham	4056
Medford	1329
Pendleton	1495
Portland	154
Roseburg	510
Salem	201
Sexton Summit CO	3841
PENNSYLVANIA	
Allentown	385
Harrisburg	378
Philadelphia CO	----
Philadelphia	114
Pittsburgh CO	-
Pittsburgh	842
Reading CO	323
Scranton	948
Shippingport CO	----
Williamsport	525
RHODE ISLAND	
Block Island	118
Providence	159
SOUTH CAROLINA	
Charleston CO	----
Charleston	59
Columbia	217
Florence	151
Greenville	1040
Spartanburg	824
SOUTH DAKOTA	
Huron	1301
Rapid City	3259
Sioux Falls	1427
TENNESSEE	
Bristol	1525
TENNESSEE (Cont'd.)	
Chattanooga	[illegible]
Knoxville	980
Memphis CO	----
Memphis	399
Nashville	546
Oak Ridge	914
TEXAS	
Abilene	1736
Amarillo	3676
Austin	605
Brownsville	57
Corpus Christi	20
Dallas	512
Del Rio	944
El Paso	3778
Fort Worth	576
Galveston CO	----
Galveston	54
Houston CO	138
Houston	62
Laredo	418
Lubbock	3241
Midland	2862
Port Arthur	34
San Angelo	1908
San Antonio	693
Victoria	117
Waco	506
Wichita Falls	1030
UTAH	
Milford	5097
Salt Lake City	4357
VERMONT	
Burlington	403
VIRGINIA	
Lynchburg	937
Norfolk	30
Richmond	164
Roanoke	1176
WASHINGTON	
Olympia	200
Seattle CO	-
Seattle	388
Seattle-Tacoma	----
Spokane	1929
Stampede Pass CO	3967
Tatoosh	86
Walla Walla CO	991
Yakima	1076
WEST VIRGINIA	
Charleston	989
Elkins	----
Huntington CO	---
Parkersburg CO	637
WISCONSIN	
Green Bay	617
La Crosse	672
Madison	974
Milwaukee	681
WYOMING	
Casper	5290
Cheyenne	6144
Lander	5352
Sheridan	3790
PACIFIC AREA	
Canton Island	11
Hilo, T.H.	36
Honolulu, T.H.	15
Koror, CO	109
Lihue, T.H.	148
Majuro	10
Ponape CO	151
Truk (Moen Island)	8
Wake Island	13
Yap CO	56
WEST INDIES	
San Juan CO	---
San Juan, P.R.	62
ALASKA	
Anchorage	132
Annette	110
Barrow	13
Bethel	38
Cold Bay	103
Cordova	40
Fairbanks	454
Juneau	24
King Salmon	49
Kotzebue	16
McGrath	338
Nome	22
Northway	1721
St. Paul Island	28
Yakutat	31

These are the elevations to which station pressure values in Table 2, monthly Climatological Data, National Summary, pertain. They are the elevations (in feet above mean sea level) of the barometer as of January 1, 1900, or at the time of establishment of station subsequent to that date. Average monthly station pressures continue to be reduced to these elevations to provide homogeneity of data over a long period of time.

GENERAL SUMMARY OF TORNADOES—1956

Compiled by L. V. Wolford

U. S. Weather Bureau, Washington, D. C.

During 1956, a total of 823 tornadoes was reported on 174 days, causing 83 deaths, over 1386 injuries, and an estimated property loss of $48,535,700. This total number of tornadoes was less than reported in 1955, but exceeded all other totals during the 41 years of record.* However, of the 823 tornadoes, 275 (funnel clouds) remained aloft and 69 dipped to the earth momentarily or in uninhabited areas with no damage resulting. Also included in the total were 26 waterspouts, 17 of which remained over water and caused no damage. This leaves a total of 462 damaging tornadoes. Twenty-nine storms reported as dust devils also occurred during 1956. These are not included in the total number of tornadoes, but are shown as a separate tabulation following the Tornado Data table in this article.

Five of the 1956 tornadoes crossed states' boundaries and one of these caused destruction in 3 states. On February 25 a tornado moved over a path 42 miles long from Missouri to Illinois with losses of $1,850,000 to property, 6 deaths and 36 injuries. Another boundary-crossing tornado which occurred on April 2 began in Oklahoma and moved over a path 15 miles long in that State and 75 miles more in Kansas, causing destruction over the 90-mile path of $150,000, loss of 2 lives and injuries to 29 other persons. A tornado on April 3 covered only 23½ miles in Oklahoma, Kansas and Missouri, but resulted in property damage of $725,000 and 54 personal injuries. On June 26 a funnel which was sighted aloft northwest of South Bend, Ind., moved into Michigan where it dipped to the ground momentarily near Niles and caused damage of $200. The fifth boundary-crossing tornado was on July 4 and caused no damage as it moved for only a short distance over sparsely settled country in Wyoming and Nebraska.

Tornadoes occurred during each month of the year, on 174 days, and in 43 states. These storms were particularly active on May 27 when 34, the greatest number of the year on a single day, were reported. Storms of this character were also numerous on April 2 and 3, with 58 occurrences on the 2 days. Over 40 percent of the Nation's tornadoes occurred in the 3 states of Texas, Oklahoma and Kansas. Texas was visited by 127, the greatest number in any state during 1956, but no lives were lost and damage amounted to only $437,100, as 87 of the total number of tornadoes were funnels aloft or other nondamaging storms. Oklahoma was second for the year, reporting 114 tornadoes, 66 of which caused no damage. Kansas ranked third with 111, but only 47 caused loss of life or property damage. Of the states reporting tornadic occurrences, the least number occurred in Connecticut, Delaware, New York, Utah, Washington and West Virginia with only one in each state. No tornadic storms were reported in Montana, Nevada, Oregon, Rhode Island, Vermont, the District of Columbia, Alaska, Hawaii and the West Indies.

The tornado frequency array by months in 1956 did not follow the usual order of the greatest number in May followed by June, April and July. In 1956 July had the greatest number with 187 of these storms, followed by May with 175, April with 114 and June with 98. January, however, with only 2 tornadoes retained its usual place in having the least number.

The loss of 83 lives during the year occurred in only 12 states and was the result of 18 tornadoes. Alabama reported 25 deaths and Michigan 24 for the highest totals in any state. The 25 fatalities in Alabama were all the result of one storm, the Birmingham tornado on April 15. Eighteen of the 24 deaths in Michigan were caused by a tornado in Allegan, Ottawa, Kent and Montcalm Counties on April 3. Five other tornadoes on that date were responsible for 15 additional deaths, 9 in Wisconsin, 3 in Tennessee, 2 more in Michigan and 1 in Kentucky. More deaths occurred on this day in April than on any other day of the year. Nine more deaths were reported in April on the 2d and 28th. This total of 67 fatalities in April exceeded the total for any other month during 1956. February recorded the next highest of 8 occurring on 3 days: the 14th, 16th and 25th. In May 2 tornadoes, both in Michigan, resulted in the loss of 4 lives, the nationwide total for the month. Two deaths occurred in August and 1 each in March and July.

The estimated 1956 property damage of $48,535,700 was exceeded during the 41-year period (1916-1956) only by the record losses of $224,345,900 in 1953. Nearly one-half ($24,133,600) of the 1956 losses occurred during April. Over $19,500,000 of this damage resulted from the tornadoes of April 2 and 3 with the disastrous tornado on the 3d in Allegan, Ottawa, Kent and Montcalm Counties, Mich., accounting for over $10,000,000 of this amount. May was next with losses amounting to $7,423,100, nearly $6,000,000 of which was caused by the tornadoes on the 12th. February followed with property damage estimated at $6,955,500 due principally to the tornadoes in Oklahoma, Missouri, Illinois, Indiana and Ohio on the 25th which caused losses of over $4,500,000. In March the estimated value of property destroyed was placed at slightly under $3,000,000. Losses during each of the months of June, July, August and October exceeded $1,000,000. The amount of destruction was placed at about $790,000 in November and less than $300,000 each in September and December. The January total of $27,000 was the smallest monthly total during the year. Losses in Michigan of over $18,000,000 greatly exceeded the value of property destroyed in any other state during 1956 and was over one-third of the total for the Nation. Indiana was next with damage exceeding $4,000,000 and Illinois and Oklahoma each reported destruction of over $3,000,000. Eleven other states each suffered losses of over $1,000,000. Although Texas exceeded all other states in the number of tornadoes reported, the property destruction estimated at $437,100 was comparatively light. Losses were estimated at less than $500 in Connecticut and Arizona and $1,000, or less, in New Hampshire, New Mexico and Idaho. A tornado was reported in each of the States of Delaware, Utah and Washington, but they either remained aloft or passed over sparsely settled country causing no damage.

Thirteen tornadoes caused property damages of at least $1,000,000 each during the year. The most destructive of these from a monetary standpoint was the tornado on April 3 in Allegan, Kent, Ottawa and Montcalm Counties, Mich., where damages were placed at $10,500,000, 18 lives were lost, and 340 persons were injured. The most outstanding tornado in regard to the loss of life was that which passed through Jefferson County, Ala., on April 15 when 25 persons were killed, 200 others received personal injuries and property damages were estimated at $1,500,000. Other tornadoes with heavy monetary losses occurred as follows: May 12 in Genessee County, Mich., with damage of $4,000,000, 3 fatalities and 116 injuries; March 6 in Grant County, Ind., where losses of $2,000,000, 1 death and 31 injuries were reported; and on February 25 the boundary-crossing tornado from Missouri into Illinois caused destruction estimated at $1,850,000, 6 deaths and 36 personal injuries. Two other single tornadoes resulted in property losses of over $1,000,000. Both of these occurred on April 3, one in Henderson County, Tenn., with losses estimated at $1,250,000, 3 fatalities and 60 injuries; the other crossed Van Buren, Allegan, Kent and Barry Counties, Mich., where property was damaged to the amount of $1,010,000 and 12 persons were injured. Five other single tornadoes occurring in Florida, Mississippi, Oklahoma, Pennsylvania and Wisconsin each caused property damage of $1,000,000. Losses of $1,000,000 were also reported in Kansas during the evening and early morning hours of April 2 and 3, but this damage may have been the result of 4 tornadoes.

Eighty-three percent of the 807 tornadoes on which the time of occurrence was given struck between noon and midnight and 17 percent between midnight and noon. Forty percent were reported between 3 and 7 p.m., with the hour of greatest activity being between 4 and 5 p.m. Only 4 tornadoes (less than ½ of 1 percent) struck between 4 and 5 a.m. for the hour of least occurrences. Nearly 60 percent of the tornadoes during the a.m. hours occurred in the southern Great Plains and Deep South.

About 87 percent of the 1956 tornadoes came from a general westerly direction. Forty-six percent traveled from the southwest to the northeast, the prevailing direction of movement of these storms; 24 percent came from the west and 17 percent from the northwest. See the tornado rose for 1956 presented in figure 1.

During 1956 paths averaged only about 11 miles in length and slightly over 192 yards in width. Information regarding the lengths of paths was given on only about 43 percent of the year's tornado reports, probably because many included in the total number were funnels aloft or those which dipped momentarily to the surface. About 79 percent of the tornadoes giving data on the lengths of paths traveled for distances of 10 miles or less. Seventy-six tornado paths were designated as short, 42 more were 1/2 mile or less in length and 159 others did not exceed 10 miles. Only 74 tornadoes traveled more than 10 miles, while 3 of these moved for distances of 100 miles or over. Two of these long paths were reported in Nebraska from single tornadoes on October 29, the longest covering 140 miles from Lincoln to Rock Counties and the other 100 miles from Custer to Knox Counties. The third path of over 100 miles occurred in Kansas, but this storm appears to have been 4 separate tornadoes with the combined length of 150 miles. The tornado which traveled for only 50 yards in Tippecanoe County, Ind., on April 3 was the shortest reported path of the year.

Twenty-nine storms classed as dust devils were reported in the United States during 1956. These are presented separately and are not included in the tornado tabulation. They were reported in 8 states and resulted in property losses of $12,800 and injuries to 2 persons. Damage of $9,000 occurred in Arizona as a result of 4 storms of this type. In Massachusetts 2 persons were injured and losses of $900 resulted from the 10 dust devils. Five dust devils caused losses listed at $1,000 in Oklahoma and damage of $1,800 resulted from 4 in Wyoming. The remaining 6 storms of this type caused no damage, 3 were in South Carolina and 1 each in Indiana, New Jersey and Rhode Island.

*In dealing with tornado statistics, we must realize that it is impractical to make accurate comparisons with previous years due to improved technique in observations, greater public interest and news dissemination, increased air traffic and an expanding population. Furthermore, since losses are based on values at the time of occurrence, corresponding adjustments for the change in price index would necessarily have to be made in comparing damages of the present time with those of previous years.

GENERAL SUMMARY OF TORNADOES—Continued

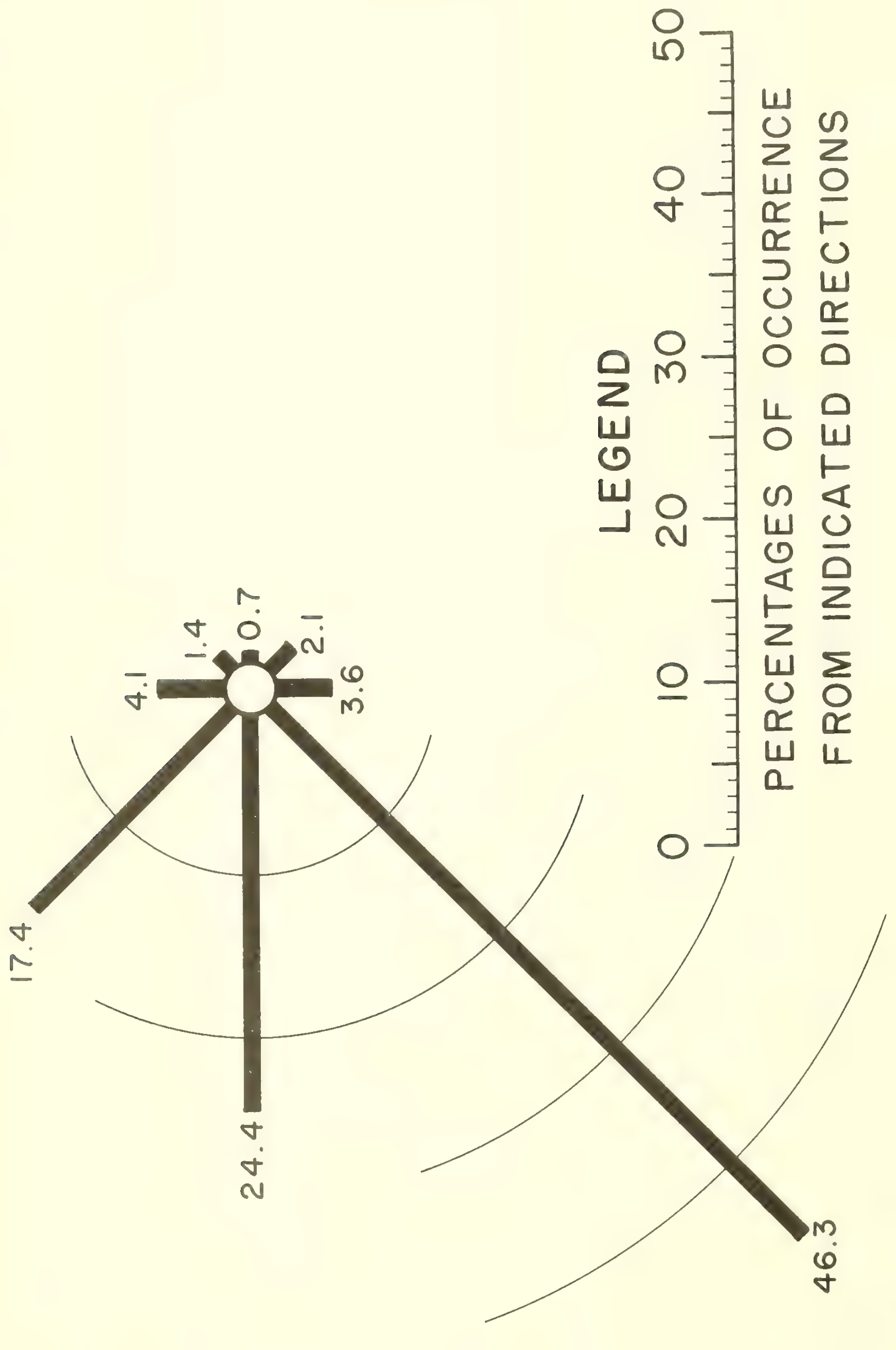

FIGURE 1.—TORNADO ROSE FOR THE UNITED STATES, GIVING THE PERCENTAGE OF TORNADOES MOVING FROM THE INDICATED DIRECTIONS DURING 1956.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
ALABAMA										
1. March 16	5:30-6 a.m.	Geneva and Houston	ENE	20	(1)	0	0	$20,000	0	Suspected tornado. Damage in skipping path from Oak Grove, Geneva County, to 3 miles west of Ashford, Houston County.
2. Apr. 15	3 p.m.	Jefferson	NE	20	150-300	25	200	1,500,000	0	Tornado moved through northwestern outskirts of Birmingham, first hitting between Pleasant Grove and McDonalds Chapel, and lifting in Trussville-Chalkville area. Path skipping, with 7 localities hit.
3. May 3	4:40 a.m.	Covington	NE	3	80	0	2	15,000	0	Occurred 3 miles northeast of Red Level.
4. July 8	8 a.m.	Clarke	(2)	(2)	(2)	0	0	2,500	0	Suspected tornado 6 miles north of Jackson. Damaged several farm buildings and residences, and lifted sheet of asphalt paving from road.
5. Dec. 22-23	11 p.m.-3 a.m.	Monroe to Tallapoosa	NE	90	30-100	0	1	70,000	0	Tornado path a straight line from Excel, Monroe County, to Reeltown, Tallapoosa County. Dips either by same tornado which was mostly aloft, or by succession of tornadoes from same thunderstorm. Dipped successively at Excel and Burnt Corn in Monroe County, near Searcy and at Fort Deposit in Lowndes County, at Pintlalla, Snowdoun, and near Mt. Meigs in Montgomery County, and at Reeltown, Tallapoosa County. Heaviest damage in Mt. Meigs area, where 4 homes destroyed along with 2 barns, while 2 other houses damaged considerably.
ARIZONA										
1. July 12	9:45-9:55 p.m.	Cochise	(2)	(2)	(2)	0	0	0	0	Funnel cloud 5 to 10 miles west of Benson touched ground in open desert.
2. July 25	5 p.m.	Maricopa	S	(2)	(2)	0	0	0	0	3 funnel clouds observed, spaced 1/4 mile apart 10 miles south of Arlington; 1 touched ground in open desert.
3. July 25	5 p.m.	Maricopa	S	(2)	(2)	0	0	0	0	
4. July 25	5 p.m.	Maricopa	S	(2)	(2)	0	0	0	0	
5. July 25	6 p.m.	Maricopa	SW	✓3 67	5	0	0	300	0	Occurred in Phoenix area. Funnel accompanied severe thunderstorm.
6. Oct. 23	3:30 p.m.	Yavapai	NNE	(2)	(2)	0	0	0	0	At Upper Lake Pleasant, funnel cloud aloft; not seen to touch ground.
ARKANSAS										
1. Jan. 28	9:30-11 p.m.	Faulkner and White	NE	29	100-200	0	12	27,000	0	Storm traveled from Wooster to 1 mile south of Greenbrier, then went aloft for 10 miles, touching ground again in Barney-Enola area, then traveled to Rose Bud. 3 homes destroyed and 21 damaged; 7 buildings destroyed and 6 damaged.
2. Feb. 14	10:13 p.m.	Sharp	E	(4)	200	0	2	8,500	0	At Evening Shade, 1 house destroyed, 2 damaged; brooder house destroyed.
3. Feb. 14	10:30-11:50 p.m.	Pope, Conway, and Van Buren	ENE	32	300	1	5	50,000	0	Principal damage near Moreland, Pope County, 3 miles south of Cleveland, Conway County, and Rabbit Ridge area, Van Buren County.
4. Feb. 14	10:45 p.m.	Izard	NE	4	(2)	0	0	(5)	0	At Melbourne, 1 house and barn destroyed; broiler house destroyed, killing 1,700 chicks; and 1 house damaged.
5. Feb. 14	11:50 p.m.	Conway	NE	2	500	0	0	38,000	0	Witness at Sardis reported heavy roaring sound.
6. Feb. 15	12:30 a.m.	White	NE	1	100	0	0	5,500	0	In Midway area, houses damaged and barns destroyed.
7. Feb. 15	Early morning	Cleburne	(2)	(2)	(2)	0	0	18,000	0	6 homes destroyed at Sugar Loaf Mountain.
8. Feb. 16	7:30 a.m.	Phillips	SE	(4)	(2)	0	0	(6)	0	5 miles north of Marvell, 2 houses and an automobile damaged.
9. Feb. 16	Noon	White	(2)	(4)	50	0	0	(6)	0	Occurred in Beebe and Antioch areas.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
ARKANSAS (Cont'd)										
10. Apr. 3	12:25 p.m.	Ashley	NE	2	200	0	0	$4,000	$0	In Thebes community, house damaged and barn destroyed. Timber destroyed in path 1/4 mile long and 200 yards wide.
11. Apr. 3	1 p.m.	Chicot	NE	1	20	0	0	20,000	0	In Jerome Road community, 1 house destroyed, 2 damaged.
12. Apr. 29	4:10 p.m.	Phillips	NE	3	50	0	0	82,000	500	In Barton community, cotton gin and 3 houses destroyed and school house damaged.
13. May 25	4 p.m.	Desha	NE	(2)	(2)	0	0	800	0	1 mile southwest of Dumas, 2 houses damaged. Funnel observed by several persons.
CALIFORNIA										
1. Apr. 13	2:55 p.m.	San Diego	NE	1/2	70	0	1	10,000	0	Decaying waterspout or small tornado at Chula Vista.
2. May 9	8:20 a.m.	Los Angeles	NE	1/4	10	0	1	25,000	0	Small tornado damaged houses in narrow strip at Alhambra.
COLORADO										
1. June 1	(2)	Weld and Morgan	(2)	(2)	(2)	0	0	0	0	3 funnels sighted, 1 touched ground in open field 8 miles northwest of Hillrose, the other 2 spotted 3 miles south of Stoneham.
2. June 1	(2)	Weld and Morgan	(2)	(2)	(2)	0	0	0	0	
3. June 1	(2)	Weld and Morgan	(2)	(2)	(2)	0	0	0	0	
4. June 18 or 19	(2)	Morgan	(2)	(2)	(2)	0	0	(5)	0	Small tornado tore roofs off 2 buildings 1 mile west of Fort Morgan.
5. June 25	(2)	Alamosa	(2)	(4)	(1)	0	0	(5)	0	Limbs broken from trees, windows broken, and cars damaged in eastern Alamosa.
6. July 13	Evening	Washington	(2)	(4)	(1)	0	0	0	0	Small tornado in Otis area caused no damage.
7. July 17	Evening	Lincoln	(2)	(4)	(1)	0	0	0	0	Tornado touched ground briefly southeast of Limon.
8. July 19	4 p.m.	Bent	(2)	(4)	(1)	0	0	(5)	0	3 small tornadoes, 1 tore roof off house south of Las Animas.
9. July 19	4 p.m.	Bent	(2)	(4)	(1)	0	0	(5)	0	
10. July 19	4 p.m.	Bent	(2)	(4)	(1)	0	0	(5)	0	
11. Oct. 24	5:10 p.m.	Lincoln	(2)	(4)	(1)	0	0	(5)	0	Tornado 8 miles south of Forder, lasted 25 minutes.
CONNECTICUT										
1. Aug. 8	4:30 p.m.	Tolland	SW	(4)	50	0	0	T ✓100	C	Suspected tornado 1/2 mile south of Andover P. O. Struck area around 1 farm house. Property nearby untouched. Ripped large limbs off 2 trees, blew lawn furniture and roof shingles up to 200 feet. Heavy rain and 3/4-inch hail accompanied very high wind that sounded like a "jet plane." No funnel cloud reported. Storm lasted less than 5 minutes.
DELAWARE										
1. June 1	3 p.m.	Sussex	E	(2)	(2)	0	0	0	0	At Rehoboth Beach, funnel cloud seen over ocean.
DISTRICT OF COLUMBIA										
(None reported)										
FLORIDA										
1. Feb. 10	7:30 p.m.	Manatee	(2)	(4)	(1)	0	0	(5)	0	Suspected tornado 4 miles southeast of Bradenton wrecked silo and damaged barns on dairy farm.
2. Mar. 8	1:45 p.m.	Dade	(2)	(2)	(2)	0	0	0	0	Pilot reported funnel cloud 1,000 feet above ground 20 miles west-southwest of Opalocka.
3. Apr. 10	6:45 p.m.	Broward	NE	8	200	0	20	1,000,000	(2)	Shop building damaged and glider overturned at Perry Airport. House-trailer almost demolished and several

See reference notes at end of table.

TORNADO DATA

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
FLORIDA (Cont'd)										others blown from foundations in west Hollywood. Major damage in Dania. Debris offered considerable evidence of tornadic action. Loud roaring noise heard.
4. May 5	9:30 a.m.	Escambia	NNW	1	50	0	1	$150,000	(2)	Storm apparently lifted and lowered along path in Pensacola area where some buildings not disturbed while others nearby demolished. Windows reportedly broke inward.
5. May 19	7 p.m.	Palm Beach	(2)	(4)	(1)	0	4	(5)	$0	At Palm Beach, trailer overturned, injuring 4 persons. 2 other trailers lifted from foundations.
6. May 20	8:15 p.m.	Sarasota	(2)	(4)	(1)	0	1	3,000	0	At Venice, man pulled into front yard as he was closing door of his home.
7. May 20	(2)	Collier	N	(4)	(1)	0	0	(5)	0	At Vanderbilt Beach, house under construction had wall blown down and garage unroofed.
8. May 29	4 p.m.	Pinellas	N	(4)	(1)	0	0	(5)	0	At St. Petersburg, funnel cloud about 50 feet across base reported. Roar heard. 1 resident reported drapes twisted and furniture and table setting lifted.
9. May 29	4 p.m.	Pinellas	(2)	(4)	(1)	0	0	0	0	Waterspout reported over Tampa Bay by Weather Bureau observers at Tampa Airport.
10. June 26	(2)	Dade	(2)	(2)	(2)	0	0	0	0	Pilot sighted funnel cloud over uninhabited area 15 miles southwest of Miami.
11. July 2	6 p.m.	Polk	W	(2)	(2)	0	0	0	0	At Lakeland, 3 funnel clouds sighted, 1 touched ground in uninhabited area.
12. July 2	6 p.m.	Polk	W	(2)	(2)	0	0	0	0	
13. July 2	6 p.m.	Polk	W	(2)	(2)	0	0	0	0	
14. July 5	7:30 a.m.	Palm Beach	(2)	(2)	(2)	0	0	0	0	Waterspout observed over ocean.
15. July 30	8 a.m.	Palm Beach	(2)	(2)	(2)	0	0	0	0	Waterspouts observed at Palm Beach, dissipated at sea.
16. July 30	8 a.m.	Palm Beach	(2)	(2)	(2)	0	0	0	0	
17. Aug. 22	3 p.m.	Palm Beach	(2)	(4)	(1)	0	0	(5)	0	At West Palm Beach, trees uprooted and TV antennas bent.
18. Aug. 27	2 p.m	Martin	(2)	(2)	(2)	0	0	0	0	Funnel cloud sighted, touched ground over uninhabited area near Stuart.
19. Aug. 29	Afternoon	Palm Beach	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft sighted 8 miles south-southeast of Weather Bureau Office at West Palm Beach.
20. Aug. 31	Afternoon	Palm Beach	(2)	(2)	(2)	0	0	0	0	Waterspout observed from West Palm Beach.
21. Sept. 24	2 a.m.	Gulf	NNE	20	(2)	0	0	35,000	0	Occurred in advance of hurricane at Wewahitchka.
22. Sept. 24	Early evening	Taylor	NNE	5	(2)	0	0	100,000	0	At Eridu, tornado in advance of hurricane damaged buildings and timberland.
23. Sept. 24	9 p.m.	Suwannee	NNE	3	50	0	0	20,000	0	In southern part of county, tornado in advance of hurricane damaged buildings.
24. Oct. 15	12:30 p.m.	Dade	(2)	(4)	(1)	0	0	2,000	0	Damaged roofs and porches of homes in 2 blocks of residential area 15 miles north of Miami.
25. Oct. 30	(2)	Palm Beach	(2)	(2)	(2)	0	0	0	0	Waterspout observed from Palm Beach.
26. Nov. 3	3 p.m.	Monroe	E	(2)	(2)	0	0	(6)	0	Waterspout observed from Lignum Vitae Key. Trees downed.
27. Nov. 21	3 p.m.	Dade	(2)	(2)	(2)	0	0	0	0	Funnel aloft observed about 10 miles north-northwest of Miami Airport Station.
GEORGIA										
1. Jan. 30	P.m.	Early	(2)	(4)	(1)	0	0	(6)	0	Suspected tornado dipped down briefly at Blakely, lifted large metal sign and tossed it on top of store.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage: Property (exclusive of crops)	Estimated damage: Crops	Remarks
GEORGIA (Cont'd)										
2. Feb. 3	4:30 p.m.	Randolph	NNE	(4)	(1)	0	0	(6)	$0	2 residences and 1 barn damaged near Pachitta.
3. Feb. 18	1:30-2 a.m.	Walker, Whitfield, and Catoosa	ENE	25	100	0	0	$900,000	0	LaFayette, Walker County, hardest hit with 6 homes and several businesses destroyed or damaged; damage estimated at $750,000. $100,000 damage to broiler industry in Whitfield County. Other communities hit included Rocky Face, Crow Valley, Waring, Pleasant Grove, Varnell, and Cohutta.
4. Feb. 27	5 p.m.	Monroe	E	1/2	100	0	0	(6)	0	Storm hit between 2 farm houses, damaging trees and utility lines.
5. Mar. 8	3:05 a.m.	Dooly	NE	(2)	(1)	0	0	(6)	0	Funnel observed by 2 men. Roofs damaged, trees uprooted at Unadilla.
6. Mar. 16	8:30 a.m.	Sumter	(2)	(4)	200	0	0	(5)	0	Damaged residence and destroyed outbuildings near Leslie.
7. Apr. 10	8:45 p.m.	Glynn	(2)	(4)	(1)	0	0	(6)	0	Damaged roofs and uprooted trees on St. Simons Island.
8. Apr. 15	6:30-7:15 p.m.	Paulding, Cobb, Cherokee, and Forsyth	NE	50	(2)	0	0	150,000	(5)	25 homes destroyed or damaged. 20 broiler houses destroyed and thousands of chickens killed. Places hardest hit were Dallas, Acworth, Woodstock, and near Cumming.
9. May 3	10:15 a.m.	Lamar	NE	9	50-400	0	2	100,000	0	6 homes destroyed, 59 others damaged in Barnesville area. Storm moved across almost entire width of Lamar County.
10. May 24	5:15-5:45 p.m.	Colquitt	NE	(4)	(1)	0	0	0	0	Funnel aloft observed at Moultrie.
11. May 24	8 p.m.	Toombs	(2)	(2)	(1)	0	0	(6)	(6)	Several farm buildings damaged. Grand stand destroyed at Vidalia.
12. June 4	7:15 p.m.	Lowndes	NW and NE	3	50-100	0	0	7 25,000	0	Roofs blown from 3 business buildings and 2 residences at Hahira.
13. Aug. 12	2 p.m.	Hancock	(2)	3	800	0	0	5,000	(6)	2 residences damaged at Linton.
14. Aug. 31	4 p.m.	Laurens	(2)	(4)	(1)	0	0	2,000	0	Storm hit 3 miles southwest of Dexter, damaged 1 residence and overturned chickenhouse.
15. Aug. 31	8 p.m.	Laurens	(2)	(4)	(1)	0	0	3,000	0	Struck just east of Dexter, severely damaging a residence.
16. Sept. 4	1:44 p.m.	Bullock	(2)	(4)	(1)	0	0	5,000	(6)	1 home and chickenhouse demolished. Some peanuts pulled from ground at Stilson.
17. Sept. 25	Early p.m.	Candler	(2)	(4)	(1)	0	0	(6)	0	Small tornado wrecked 1 house and damaged timber.
18. Dec. 23	Early a.m.	Troup, Harris, and Pike	ENE	30	100	0	1	(5)	0	Storm moved from near West Point in Troup County across Harris County and into Pike County near Zebulon, but was not continuously at surface. Several farmhouses damaged and utility lines downed.
IDAHO										
1. May 18	Afternoon	Bingham	(2)	(2)	(2)	0	0	(5)	0	Twister at Blackfoot Airport described as "baby tornado."
2. June 1	Late afternoon	Lemhi	(2)	1/4	(1)	0	0	(6)	0	Occurred along Carmen Creek.
3. June 3	Afternoon	Gooding	(2)	(2)	(2)	0	0	(5)	(5)	Small twister reported at West Point.
4. July 9	Late evening	Canyon	(2)	(2)	(2)	0	0	(6)	0	Called "miniature twister." Trees uprooted in Middleton.
5. Aug. 23	9 a.m.	Ada	E	1/2	100	0	0	1,000	0	No funnel seen. Debris gave evidence of "twister." Occurred just west of Boise. Some structural damage and trees blown down.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
ILLINOIS										
*1. Feb. 25	12:25 a.m.	St. Clair and Clinton	E	40	200-500	6	20	$1,700,000	$0	Crossed Mississippi River from Missouri, hit Dupo, Imbs Station, Belleville, Summerfield, and Breese. 3 persons killed at Imbs Station and 3 at Summerfield.
2. Feb. 25	2:13 a.m.	Richland and Lawrence	ENE	20	450	0	2	600,000	0	Tornado moved from Olney to Pinkstaff.
3. Mar. 6	4:45 p.m.	McLean	E	3	200	0	0	40,000	0	At Lexington, funnel cloud observed and roaring noise heard.
4. Mar. 6	5:55 p.m.	Iroquois	NE	8	200-500	0	6	125,000	0	About 10 farmsteads suffered heavy damage northeast of Buckley.
5. Apr. 2	1:30 a.m.	Cook	NE	2	10	0	0	75,000	0	Occurred at Wilmette. Rear windows of closed cars blown out and sealed-beam headlights popped out of their recepticles.
6. Apr. 3	2:30 p.m.	Lawrence	NE	3	(2)	0	0	10,000	0	In Lawrenceville area, large building at sawmill destroyed, concrete building damaged, lumber scattered, and windows blown out of several houses.
7. Apr. 3	4 p.m.	Ford	NE	2	50	0	0	12,000	0	5 miles northeast of Cullom, new chickenhouse demolished, barn unroofed, other buildings damaged and windows broken in house on 1 farm.
8. Apr. 3	4:08 p.m.	De Witt and Piatt	NE	10	40	0	0	30,000	0	Roofs torn off, windows broken, and farm buildings damaged on 4 farms in De Land and Weldon areas.
9. Apr. 3	5 p.m.	Moultrie and Douglas	NE	5	100	0	0	25,000	0	Buildings overturned and trees uprooted.
10. Apr. 26	9:15 p.m.	Henry	E	35	(2)	0	0	150,000	0	Intermittent path from Colona to just north of Geneseo. Over 20 farmsteads suffered damage.
11. Apr. 27	7:20 p.m.	Bureau	E	12	500	0	0	60,000	0	2 tornadoes, 1 struck 2 miles west of Arlington. Less than 30 minutes later second tornado occurred about 1 mile south of the first.
12. Apr. 27	7:20 p.m.	Bureau	E	12	500	0	0			
13. Apr. 27	10:10 p.m.	Brown	E	4	900	0	0	30,000	0	Damage on 9 farms, including 2 barns wrecked, 5 miles west of Mt. Sterling. Roaring sound reported by witnesses.
14. Apr. 28	11 p.m.	Montgomery	NW	5	(2)	2	0	15,000	0	2 farm houses northwest of Litchfield damaged. 2 men drowned when storm overturned boat on small lake. Steel grain bin weighing several tons carried 100 yards.
15. Apr. 29	12:05 a.m.	Macon	NW	3	(2)	0	0	10,000	0	2 miles northwest of Blue Mound, corn crib damaged and debris scattered 3/4 mile. Minor damage on several farms.
16. Apr. 29	1 a.m.	Washington and Marion	NE	25	(2)	0	0	10,000	0	Discontinuous path from Ashley to Cartter. Barn damaged near Cartter. House moved on foundation in Ashley area.
17. May 16	5:30 p.m.	Jo Davies	E	4	80	0	0	10,000	0	West of Stockton, damage occurred on 5 farmsteads.
18. May 21	9:45 p.m.	Iroquois	E	2	70	0	0	15,000	0	Canning factory destroyed and other property damaged at Onarga.
19. June 17	5:30 a.m.	Carroll	NE	2	(2)	0	0	7,000	2,000	2 cottages damaged at Riverview resort area, north of Thomson.
20. June 19	8 p.m.	Pike	SE	(2)	(2)	0	0	35,000	0	Radio station destroyed, cement-block building leveled and other property damaged from Barry to Pittsfield area.
21. July 13	4:13 p.m.	Champaign	SE	(2)	(2)	0	0	0	0	Funnel aloft observed at Rantoul.
22. July 25	3:30 p.m.	Piatt	(2)	(2)	(2)	0	0	0	0	At Mansfield, typical funnel with inverted cone and narrow rope-like extension whipped around for about 15 minutes, but did not touch ground.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
ILLINOIS (Cont'd)										
23. Aug. 10	Late afternoon	Fayette and Ford	(2)	(2)	(2)	0	0	$0	$0	2 funnel clouds aloft at Vandalia and Paxton.
24. Aug. 10	Late afternoon	Fayette and Ford	(2)	(2)	(2)	0	0	0	0	
25. Aug. 12	10:20 p.m.	Ford	ESE	13	30	0	0	27,000	3,000	Path through Piper City.
26. Aug. 13	1:15 a.m.	Tazewell	ESE	5	25	0	0	25,000	0	At Sunnyland, heavy damage to 1 building.
27. Aug. 18	8 a.m.	Richland	ENE	30	(2)	0	0	10,000	0	Occurred at Olney.
28. Aug. 23	2 p.m.	Kane, Du Page, and Cook	SE	(2)	40	0	3	250,000	0	Tornadoes at Elgin, St. Charles, and Tinley Park.
29. Aug. 23	2 p.m.	Kane, Du Page, and Cook	SE							
30. Aug. 23	2 p.m.	Kane, Du Page, and Cook	SE							
31. Aug. 30	11 p.m.	Lee	NE	(2)	15	0	0	4,000	0	Barn destroyed at Dixon.
32. Sept. 15	2:30 a.m.	St. Clair	SSE	1	400	0	0	10,000	0	Occurred at Millstadt.
INDIANA										
1. Feb. 25	2:30 a.m.	Boone	ENE	1	70	0	0	10,000	0	Several barns damaged on indefinite path of destruction extending from Advance to 1-1/2 miles south of Lebanon.
2. Feb. 25	3-5 a.m.	Jackson	E	2	100	0	1	200,000	0	Damage occurred along the Brownstown-Owen Township road about 4-1/2 miles northwest of Brownstown.
3. Feb. 25	3:57 a.m.	Knox and Daviess	ENE	8	900	0	1	50,000	0	Path of tornado from Bruceville to Odon. Homes and other buildings damaged.
4. Feb. 25	5-6 a.m.	Johnson	(2)	(2)	(2)	0	0	85,000	0	West of Bargersville, numerous buildings damaged or demolished.
5. Feb. 25	5:26 a.m.	Morgan	ENE	2	20-100	0	3	50,000	0	At Martinsville, 20 houses unroofed and 7 house trailers upset.
6. Feb. 25	5:35 a.m.	Johnson	E	5	(1)	0	0	110,000	0	From 3 miles north of Trafalgar to 3 miles south of Franklin, farm buildings destroyed and livestock killed.
7. Feb. 25	5:50 a.m.	Shelby	ENE	2	300	0	0	750,000	0	Roofs, windows, and buildings damaged in southwestern Shelbyville.
8. Feb. 25	6 a.m.	Rush	NE	2	(1)	0	0	500	0	Farm buildings damaged 3-1/2 miles north of Arlington.
9. Feb. 25	6:45 a.m.	Switzerland	NE	1/4	55	0	0	15,000	0	House damaged at farm northeast of Vevay.
10. Mar. 6	7:40 p.m.	Benton	ENE	4	100-400	0	3	95,000	0	Damage in Dunnington and 1 mile east.
11. Mar. 6	8 p.m.	Carroll	NE	(4)	(1)	0	0	6,000	0	Near Delphi, several small buildings damaged. 100 chickens stripped of feathers.
12. Mar. 6	9 p.m.	Cass	E	2	30	0	3	40,000	0	Southwest of Galveston, house lifted and carried 30 feet from foundation. 4 other houses damaged.
13. Mar. 6	9:50 p.m.	Grant	NE	3-1/2	45	1	31	2,000,000	0	45 homes destroyed, 390 homes, 2 schools, and 1 lumberyard damaged in Marion.
14. Mar. 6	P.m.	Miami	(2)	(2)	(2)	0	0	2,000	0	2 miles southeast of Amboy, roofs torn from several buildings.
15. Mar. 6	P.m.	Tipton	(2)	(2)	(2)	0	0	8,000	0	Barn wrecked northeast of Windfall, 50 to 60 pigs killed.
16. Mar. 6	P.m.	White	(2)	(2)	(2)	0	0	2,000	0	Near Monticello, roofs torn from house, 2 corn cribs, and chickenhouse.
17. Mar. 7	12:10 a.m.	Washington	E	1	(1)	0	0	10,000	0	1 mile south of Salem, buildings on 4 farms damaged. Concrete blocks carried 50 feet.
18. Apr. 3	5 p.m.	Tippecanoe	NE	3 50	10	0	0	5,000	0	2 miles northeast of Klondike, tore roof from barn and shingles from farmhouse.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage: Property (exclusive of crops)	Estimated damage: Crops	Remarks
INDIANA (Cont'd)										
19. Apr. 3	5:45 p.m.	Washington	NE	23	150	0	12	$600,000	$0	100 properties damaged in townships of Howard, Washington, Franklin, and Gibson. Church and school damaged at Canton. Long-span steel bridge southwest of Salem blown off its supporting abutments.
20. Apr. 3	7:04 p.m.	Kosciusko	NE	1-1/2	70	0	0	50,000	0	Some cottages on Yellow Creek Lake destroyed.
21. Apr. 3	7:50 p.m.	Noble	NE	1/10	75	0	0	30,000	0	1 mile west of Wawaka, barn picked up, then dropped on highway. Car picked up and turned around. Some livestock killed.
22. Apr. 3	8-9 p.m.	Wayne	NE	5	50	0	0	50,000	0	7 miles south of Richmond, damage to homes on several farms.
23. Apr. 3	8:05-8:20 p.m.	Lagrange	(2)	(2)	(2)	0	0	118,000	0	Several barns and house destroyed between Topeka and Lagrange. Damage also occurred at Emma.
24. Apr. 3	(2)	Fulton	(2)	(2)	(2)	0	0	5,000	0	Near Leiters Ford, several barns damaged.
25. May 21	10:30 p.m.	Jasper	E	(4)	10	0	0	3,000	0	In Newland, store front damaged.
26. May 21	11:30 p.m.	Benton	E	(2)	(2)	0	0	0	0	Funnel observed aloft by several persons in Fowler.
27. June 24	5 p.m.	Wells	SSE	3	(2)	0	0	3,000	0	On north edge of Tocsin, trees downed and barn roof destroyed.
*28. June 26	2 p.m.	St. Joseph	NE	(2)	(2)	0	0	0	0	Funnel observed aloft northwest of South Bend, moved into Michigan.
29. July 13	3:10 p.m.	Ripley	NE	2/10	100	0	0	30,000	0	In Versailles, several houses damaged and unroofed.
30. July 15	1:49 p.m.	Gibson	(2)	(2)	(2)	0	0	0	0	Funnel observed aloft north of Evansville by pilot.
31. July 16	Evening	Lake	(2)	1/10	15	0	0	3,000	0	Struck Whiting City Park.
32. July 20	Early afternoon	Elkhart	(2)	(2)	(2)	0	0	0	3,000	In Stone Lake area of Bristol.
33. July 20	10 p.m.	Elkhart	(2)	(2)	(2)	0	0	0	0	Funnel observed by pilot southeast of Goshen, briefly touched ground.
34. July 22	1:40 p.m.	St. Joseph	NE	(2)	(2)	0	0	0	0	Funnel observed by pilot south-southeast of South Bend.
35. July 28	5:39 p.m.	Knox	(2)	(2)	(2)	0	0	T✓ 1,000	C	Near Wheatland.
36. Aug. 12	11:30 p.m.	Marshall and Kosciusko	ENE	28	800	0	1	200,000	2,000	From east of Argos to south of Warsaw, barns and homes damaged or destroyed.
37. Aug. 12	11:40 p.m.	Cass	E	3	200	0	0	30,000	0	At Walton, storage bins, houses, and utility lines damaged.
38. Sept. 1	7:10 a.m.	Howard	E	(2)	(2)	0	0	0	0	Funnel observed aloft north-northwest of Kokomo by airport weather observer.
IOWA										
1. Apr. 26	10:30 p.m.	Benton	E	3	440	0	0	12,000	0	Destroyed building and killed livestock in Vinton area.
2. May 29	Early a.m.	Humboldt	(2)	(2)	(2)	0	0	1,000	0	Damaged farm buildings.
3. May 29	5:30 p.m.	Linn	(2)	(2)	(2)	0	0	1,000	0	Damaged farm buildings.
4. May 29	Night	Cass	(2)	(2)	(2)	0	0	4,000	0	Destroyed farm buildings.
5. July 17	3 p.m.	Chickasaw	SE	3	200	0	1	4,000	6,000	Damaged buildings, mink farm, and mail truck 3 miles east of New Hampton.
6. Aug. 12	4 p.m.	Poweshiek	NE	5	(2)	0	8	400,000	0	Tornado touched ground in North Fork of Skunk River bottom, destroying farm buildings.
7. Aug. 16	6 p.m.	Howard	(2)	(2)	(2)	0	0	0	0	State Highway Patrol reported funnel cloud near Cresco.
8. Aug. 18	5:30 a.m.	Mahaska	ENE	12	880	0	0	75,000	20,000	Numerous farm buildings damaged or destroyed.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage: Property (exclusive of crops)	Estimated damage: Crops	Remarks
KANSAS										
1. Apr. 2	4 p.m.	Wilson	(2)	(2)	(2)	0	0	$0	$ 0	Funnel aloft sighted 5 miles northwest of Fredonia.
2. Apr. 2	6-7 p.m.	Pawnee, Barton, Rice, and Ellsworth	NE	(2)	(2)	0	1	100,000	0	3 tornadoes reported. One 8 miles northeast of Larned at 6 p.m.; second covered path 35 miles long and 200 to 500 yards wide at 6:30 p.m., in Ellinwood where 6 planes and 2 hangers damaged, moved to Claflin at 6:45 p.m., then to Barton-Rice County line where several houses and oil-well equipment damaged, then moved to Bushton and Holyrood; third sighted aloft near Ray about 7 p.m.
3. Apr. 2	6-7 p.m.	Ditto	NE							
4. Apr. 2	6-7 p.m.	Ditto	NE							
5. Apr. 2	7:15 p.m.	Harper	NE	(2)	(2)	0	0	(5)	0	1 funnel struck 1-1/2 miles west of Attica, another sighted aloft 6 miles southeast of Attica.
6. Apr. 2	7:15 p.m.	Harper	NE							
7. Apr. 2	7:30 p.m.	Mitchell	N	3	(2)	0	0	(6)	0	Damage to farm buildings and powerlines 2-1/2 miles north of Hunter.
*8. Apr. 2	9:45 p.m.	Cowley to Coffey	NE	75	880	2	27	(5)	0	Tornado travelled 75 miles in about 75 minutes through Cowley, northeastern Chautauqua, Elk, southeastern Greenwood, western Woodson, and southeastern Coffey Counties. Places affected included Maple City, Howard, Fall River Reservoir, Toronto, and Gridley. Destruction indicated very intense storm. Roar and distinct whistle heard. Several persons carried variable distances in air.
9. Apr. 2-3	9:30 p.m.-12:25 a.m.	Harvey to Atchison	N-NE	150	200-880	0	8	7 1,000,000	0	Series of at least 4 funnels along this path. First tornado at Whitewater and Elbing, Butler and Harvey Counties at 9:30 p.m., moved to south-southwest of Florence, Marion County, then east-northeastward 2-1/2 miles. 6 farm buildings hit. Evidence of walls bulging and returning to position. 90-pound stone dropped through roof of residence. Second tornado began about time first one dissipated, beginning in southwestern Chase County causing damage to buildings in or near Cedar Point at 10 p.m. Third tornado originated west of Cottonwood Falls to west of Strong City where automobile and driver picked up and carried 250 feet; driver suffered shock and bruises. Tornado then moved across northeastern Chase County, southeastern Morris County, northwestern Lyon County, across southern Wabaunsee County, to north of Dover, Shawnee County. Fourth tornado became evident near Harveyville, Osage County, near 11:30 p.m., moved to north of Auburn, skipped over next 8 miles, striking Seabrook in southwestern Topeka where glass fronts sucked out, brick facing torn off, and damaged trees and TV aerials. Lifted again and struck with violence near Rock Creek. Moved to Valley Falls where 15-mile path of wreckage began. Terminated northwest of Nortonville near Monrovia and Farmington about 12:25 a.m., on 3d.
10. Apr. 2-3	Ditto	Ditto	N-NE							
11. Apr. 2-3	Ditto	Ditto	N-NE							
12. Apr. 2-3	Ditto	Ditto	N-NE							
*13. Apr. 3	12:13 a.m.	Cherokee	NE	1-1/2	50	0	6	125,000	0	Tornado originated in Oklahoma, moved to Baxter Springs, Kans., then to Webb City, Mo. Damage at Baxter Springs included 14 homes destroyed, 13 damaged; 7 large electric poles blown over, large truck overturned, baseball grandstand demolished, and trees uprooted. Several funnels may have occurred. Houses with bulged walls and lifted roofs attested explosive character.
14. Apr. 8	11:55 p.m.	Sumner	NE	(2)	(2)	0	0	0	0	2 funnels aloft sighted near Belle Plaine, one short distance west, and the other 4 miles east.
15. Apr. 8	11:55 p.m.	Sumner	NE							

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
KANSAS (Cont'd)										
16. Apr. 14	7 p.m.	Clark	E	(4)	(1)	0	0	(5)	$0	Cattleshed and barn destroyed 10 miles south of Bloom.
17. Apr. 27	9:15 p.m.	McPherson	E	(4)	(1)	0	0	(5)	0	At Lindsborg, distinct roar of tornado aloft heard. Rear windows of 15 cars sucked out. School building and commercial garage damaged.
18. Apr. 28	5 p.m.	Bourbon	NE	3	(1)	0	0	(5)	0	North of Fort Scott, farm buildings damaged.
19. May 10	7 p.m.	Mitchell	(2)	(2)	(2)	0	0	0	0	Pronounced roar heard 11 miles southwest of Beloit. Debris hurled high in air, but no damage reported.
20. May 10	9:40 p.m.	Chase	N	(4)	(1)	0	0	(6)	0	2 funnels observed north of Cassoday, larger one came to ground between Wonsevu and Clements, smaller one remained aloft. Path over open country, some trees broken and windmills damaged.
21. May 10	9:40 p.m.	Chase	N							
22. May 13	Night	Chautauqua	(2)	(2)	(2)	0	0	0	0	Funnel reported to have touched ground south of Sedan.
23. May 22	8:45 p.m.	Finney and Kearny	E-NE	1/2	(1)	0	0	0	0	Funnel observed aloft near Finney-Kearny County line progressing eastward for 20 miles, then touched ground and disappeared.
24. May 22	9:35 p.m.	Finney	E	(4)	(1)	0	0	0	0	Tornado in open country 15 miles south of Garden City, crossed road in front of observer.
25. May 27	4 p.m.	Stafford	(2)	(2)	(2)	0	0	0	0	2 funnels aloft observed 10 miles southeast of Pawnee Rock.
26. May 27	4 p.m.	Stafford	(2)	(2)	(2)	0	0	0	0	
27. May 27	6 p.m.	Hamilton and Kearny	(2)	(2)	(2)	0	0	0	0	3 small funnels observed, one in sandhills southwest of Syracuse at 6:32 p.m., second near Kendall at 6 p.m., and third dipped down over Lake McKinney northeast of Lakin.
28. May 27	6 p.m.	Ditto	(2)	(2)	(2)	0	0	0	0	
29. May 27	6 p.m.	Ditto	(2)	(2)	(2)	0	0	0	0	
30. May 27	7:30 p.m.	Cowley	NE	2	(2)	0	0	0	0	Funnel aloft 10 miles southeast of Dexter observed to travel for about 2 miles, then split off base of cloud.
31. May 27	10:30 p.m.	Butler	(2)	(2)	(2)	0	0	0	0	Funnel aloft southwest of Augusta.
32. May 28	2:16-4:08 a.m.	Sedgwick	E	(2)	(2)	0	0	0	0	3 funnels aloft, one north of Valley Center at 2:16 a.m., second near Colwich at 3 a.m., third at Viola at 4:08 a.m.
33. May 28	Ditto	Sedgwick	E							
34. May 28	Ditto	Sedgwick	E							
35. May 28	4-7:18 p.m.	Barton and Ellsworth	(2)	(2)	(2)	0	0	0	0	At least 3 funnels sighted, 2 aloft, one 10 miles northwest of Holyrood at 4 p.m., another east of Wilson at 6:30 p.m., third tornado reported on ground near Hoisington at 7:18 p.m.
36. May 28	4-7:18 p.m.	Ditto								
37. May 28	4-7:18 p.m.	Ditto								
38. May 29	2:30 p.m.	Riley	NE	(2)	(2)	0	0	0	0	Funnel dipped 2 or 3 times, but did not touch ground at Riley.
39. May 29	8:30 p.m.	Marshall	NE	9	(2)	0	0	(5)	(5)	North of Marysville, damage indicated tornado.
40. May 29	8:45 p.m.	Riley	NE	(2)	(2)	0	0	0	0	Tornado heard aloft west of Leonardville.
41. May 30	2:30 a.m.	Dickinson	S-N	(2)	(2)	0	0	0	0	Funnel aloft observed south of Abilene going south then reversed and disappeared going north.
42. May 30	5:15 p.m.	Hodgeman	(2)	(2)	(2)	0	0	0	0	Funnel dipped to earth twice about 5 miles south of Jetmore.
43. May 30	6:30 p.m.	Gray	NE	(4)	100	0	0	0	0	Funnel dipped to ground momentarily 5 miles south of Haggard.
44. May 30	7:15 p.m.	Linn	NE	(2)	(2)	0	0	0	0	Black funnel observed aloft northeast of La Cygne.
45. May 30	8:45-10:15 p.m.	Harvey and Sedgwick	(2)	(2)	(2)	0	0	0	0	5 or more funnels sighted mostly aloft. Police at Wellington reported funnels at 8:45 p.m., 20 miles south of Wichita, 1 dipped to ground. Funnel seen near Newton at 9:30 p.m. Funnel aloft northeast of Wichita at 9:40 p.m.
46. May 30	Ditto	Ditto								
47. May 30	Ditto	Ditto								
48. May 30	Ditto	Ditto								
49. May 30	Ditto	Ditto								

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
KANSAS (Cont'd)										Funnel reported 1 mile south of Haysville at 9:40 p.m. Funnel sighted aloft southeast of Wichita at 10:15 p.m.
50. May 30	9:56-10:18 p.m.	Montgomery	NE	(2)	(2)	0	0	$0	$0	2 funnels aloft from southwest of Independence to east of town. Tremendous roar heard.
51. May 30	Ditto	Montgomery	NE							
52. June 5	Night	Pawnee	(2)	(2)	(2)	0	0	0	0	Some evidence of tornado formation aloft near Rozel.
53. June 6	5:55-8:25 p.m.	Pawnee, Barton, and McPherson	(2)	(2)	(2)	0	0	0	0	4 funnels observed, only one touched ground in open country. Near Frizell, Pawnee County, tornado aloft reported at 5:55 p.m. Tornado 8 miles north of Larned, Pawnee County, touched ground in open country at 5:55 p.m. Tornado west of Great Bend, Barton County, at 8:25 p.m., and near Inman, McPherson County, tornado aloft during evening.
54. June 6	Ditto	Ditto								
55. June 6	Ditto	Ditto								
56. June 6	Ditto	Ditto								
57. June 18	6:20 a.m.	Leavenworth	NE	3/4	25	0	0	2,500	0	Narrow strip of damage near State penetentiary gave some evidence of tornadic action. Trees blown down, large limbs broken off, causing breakage of power- and telephone lines in Lansing area.
58. June 19	5:15 p.m.	Riley	NE	(2)	(1)	0	0	(6)	0	1 farm plant damaged 3 miles north of Cleburne.
59. June 22	Afternoon	Butler and Cowley	NE	(2)	(2)	0	0	0	0	2 tornadoes sighted, one aloft near Latham, the other north of Winfield; caused no damage.
60. June 22	Afternoon	Ditto	NE							
61. June 22	Night	Cheyenne	(2)	(2)	(2)	0	0	0	0	16 miles northeast of St. Francis, funnel aloft sighted by aid of lightning.
62. June 23	3:55-4:20 p.m.	Cheyenne	SE	(4)	(1)	0	0	0	0	Funnel dipped to earth twice 3-1/2 miles west of McDonald.
63. June 25	9 p.m.	McPherson	(2)	(2)	(2)	0	0	0	0	Tornado 15 miles southeast of McPherson touched ground.
64. June 25	Evening	Norton	(2)	(2)	(2)	0	0	(5)	0	Damage indicated tornadic action a few miles northwest of Norton.
65. June 26	2 a.m.	Marshall	E	(4)	(1)	0	0	(5)	0	Farm plant 4 miles northeast of Frankfort damaged by small tornado.
66. June 27	3 p.m.	Anderson	(2)	(2)	(2)	0	0	0	0	Small funnel aloft south of Garnett.
67. July 1	5:25-6 p.m.	Sedgwick and Marion	(2)	(2)	(2)	0	0	5,800	0	2 tornadoes, one at 5:25 p.m., 3 miles northeast of Andale, Sedgwick County, where large barn demolished. Second tornado from 4 miles southwest of Florence, Marion County, to northeast of town about 6 p.m.
68. July 1	5:25-6 p.m.	Ditto								
69. July 2	4-4:15 p.m.	Douglas	E	4	(2)	0	0	(6)	0	Tornado reported north of Baldwin and west of Overbrook.
70. July 5	2:30-8 p.m.	Rawlins to Sumner	(2)	(2)	(2)	0	0	7 30,000	0	2 near Atwood, one 9 miles west and 5 miles west at 2:40 p.m., damaged farm buildings and transmission lines; 1 at Hill City took roof off large building; 1 funnel aloft 7 miles west of Hoxie at 2:30 p.m.; 1 at Hays at 3 p.m., came close to ground, 1 funnel aloft west of Kingman about 7 p.m.; 1 west of Belle Plaine came to ground once and disappeared. 7 tornadoes reported.
71. July 5	2:30-8 p.m.	Ditto								
72. July 5	2:30-8 p.m.	Ditto								
73. July 5	2:30-8 p.m.	Ditto								
74. July 5	2:30-8 p.m.	Ditto								
75. July 5	2:30-8 p.m.	Ditto								
76. July 5	2:30-8 p.m.	Ditto								
77. July 5	6:30 p.m.	Saline	(2)	(2)	(2)	0	0	0	0	Funnel aloft 10 miles south of Salina.
78. July 7	Night	Douglas	SE	(2)	(2)	0	0	(5)	0	Funnel touched ground at Lone Star.
79. July 11	3:17-4 p.m.	Thomas and Logan	(2)	(4)	(1)	0	0	3,000	0	2 tornadoes reported, one 2 miles east of Colby at 3:17 p.m. Second tornado hit farm buildings 4 miles west of Monument at 4 p.m.
80. July 11	3:17-4 p.m.	Ditto								
81. July 12	7:30 p.m.	Wichita and Scott	E	(2)	(2)	1	0	20,000	0	Tornado intermittently from near Marienthal to Scott City. Man suffering heart ailment died when cut by flying glass.

See reference notes at end of table.

TORNADO DATA

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
KANSAS (Cont'd)										
82. July 12	8:30 p.m.	Rooks	NE	(2)	(2)	0	0	$0	$0	In Palco area, funnel cloud observed by aid of lightning.
83. July 12	9:15-9:45 p.m.	Coffey	SE	(2)	(2)	0	0	0	0	Southeast of Burlington, fragmentary clouds sucked into long, flat cloud 200 feet off ground.
84. July 15	8:10 p.m.	Lincoln	E	6	880	0	0	50,000	0	Damage path from just west of Barnard through town where 1 house demolished, and trees, roofs, small buildings, power- and communication lines, and windows damaged.
85. July 18	6:45 p.m.	Russell	E	(4)	(1)	0	0	0	0	Small funnel hit ground 1 mile east of Bunker Hill.
86. July 19	5:45 p.m.	Cherokee	(2)	(4)	(1)	0	0	(6)	0	Roof torn off cement plant at Baxter Springs.
87. July 20	6:30-8:05 p.m.	Anderson, Allen, and Crawford	S and SE	50	880	0	0	50,000	0	2 parts to tornado destruction, from near Westphalia to near Moran and from 4 miles northwest of Hepler to near Pittsburg.
88. July 21	5:15 p.m.	Harvey	(2)	(2)	(2)	0	0	(6)	0	Small tornado destroyed barn south of Newton.
89. Aug. 2	4:45 p.m.	Sumner	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted 1 mile northeast of Oxford.
90. Aug. 8	8:30-9:15 p.m.	Saline, Morris, and Chase	E	(2)	(2)	0	0	(5)	0	4 or more tornadoes occurred; at 8:30 p.m., aloft 4 miles west of Smoky Hill Air Base; at 9:10 p.m., aloft 5 miles southeast of New Cambria, Saline County; at 9:15 p.m., 1 or more aloft in Morris County; and at 9:12 p.m., near Elmdale, Chase County. House trailer and truck picked up and dashed to ground by tornado.
91. Aug. 8	Ditto	Ditto	E							
92. Aug. 8	Ditto	Ditto	E							
93. Aug. 8	Ditto	Ditto	E							
94. Aug. 17	6-7:30 p.m.	Ralwins and Decatur	E	(2)	(2)	0	0	0	0	6 funnels sighted aloft; 1 northwest of Colby in southern Rawlins County and 5 near Dresden.
95. Aug. 17	6-7:30 p.m.	Ditto	E							
96. Aug. 17	6-7:30 p.m.	Ditto	E							
97. Aug. 17	6-7:30 p.m.	Ditto	E							
98. Aug. 17	6-7:30 p.m.	Ditto	E							
99. Aug. 17	6-7:30 p.m.	Ditto	E							
100. Oct. 29	4:15-5:15 p.m.	Thomas and Sheridan	NE	8	50	0	0	(5)	0	2 tornadoes seen at same time, 2 miles apart traveling same direction. Major damage done by northern funnel which began 6-1/2 miles south of Halford and moved through Menlo.
101. Oct. 29	Ditto	Ditto	NE							
102. Oct. 29	7 p.m.	Ness	NE	2-3	120-220	0	0	4,300	0	2 tornadoes, one 5 miles northeast of Brownell, the other 5-1/2 miles east of Brownell.
103. Oct. 29	7 p.m.	Ness	NE							
104. Oct. 29	8 p.m.	Pawnee	NNE	15	440	0	2	250,000	0	2 or more funnels from 7 miles southeast of Burdett to about 6 miles northwest of Rozel. 7 farm plants damaged, and poultry and livestock killed.
105. Oct. 29	8 p.m.	Pawnee	NNE							
106. Oct. 29	9 p.m.	Kiowa	(2)	(4)	(1)	0	0	(5)	0	1 farm plant struck 7 miles south of Brenham.
107. Oct. 29	9-9:25 p.m.	Russell, Lincoln, and Mitchell	NNE	25	100-300	0	2	50,000	0	Damage path intermittent from 4 miles west of Dorrance to near Hunter. Deafening and prolonged roar. 3 homes and a large number of barns and sheds demolished and others damaged.
108. Oct. 29	9:33 p.m.	Barton	NE	2	(1)	0	1	250,000	0	Tornado dipped twice in Great Bend, 30 homes and large, concrete-block building damaged. 1 person injured when home damaged.
109. Oct. 29	Evening	Ellsworth	NE	(2)	(2)	0	0	(5)	0	Damage path several miles north of Ellsworth, 3 or 4 farm plants damaged.
110. Dec. 4	12:30 p.m.	Kingman and Reno	NE	2-1/2	25	0	0	300	0	Tornado came to ground 3 miles southwest of Penalosa and disappeared aloft in Reno County.
111. Dec. 4	6 p.m.	Doniphan	NE	1/4	50	0	1	(6)	0	At Wathena, tremendous roar heard. Windows blown out, but no funnel observed.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
KENTUCKY										
1. Apr. 3	4-5 p.m.	Webster and Henderson	NE	10	200-250	1	2	$25,000	$0	Apparently first hit near town of Dixon in Webster County. Seemingly dissipated north of community of Zion in Henderson County. Buildings destroyed. Considerable livestock lost.
2. Apr. 3	(2)	Union	(2)	(2)	(2)	0	1	5,000	0	Tornado dipped down near community of Pride. Several buildings damaged. Probably part of same storm that struck Webster and Henderson Counties.
3. Apr. 29	5:30 p.m.	Hopkins	E	15	100	0	1	3,500	0	First struck at Dawson Springs, moved to New Salem. 8 buildings damaged.
4. July 13	3:30-4 p.m.	Boone	E	1	440	0	12	T 500,000	C	Struck at Walton. Destroyed 6 houses, damaged others.
5. July 13	5-6 p.m.	Fayette and Bourbon	NE	(2)	35	0	0	150,000	0	Moved across northeast portion of Fayette County and into Bourbon County. Houses, barns, and utilities damaged.
6. July 13	6 p.m.	Montgomery	E	(2)	(2)	0	0	6,000	0	Struck in northern Montgomery County. Barns and other buildings damaged.
7. July 13	P.m.	Bath	(2)	(2)	(2)	0	0	4,000	0	2 barns flattened, other buildings damaged.
8. July 15	P.m.	Laurel	(2)	3	(2)	0	0	(6)	0	Damaged trees and a house.
9. July 19	4:15-4:30 p.m.	Bracken and Pendleton	E	20	(2)	0	0	175,000	100,000	Tobacco and corn crops ruined. Barns destroyed, houses damaged.
LOUISIANA										
1. Feb. 8	2-3 p.m.	Evangeline to West Feliciana	ENE	30	300	0	0	50,000	0	Storm passed over unpopulated area from north of Opelousas to near St. Francisville.
2. Apr. 5	5:30 p.m.	Franklin	NE	20	100	0	2	200,000	(6)	Connected with line squall. 200 homes damaged. Greatest damage between Baskin and Mangham.
3. July 5 4. July 5	5-5:30 p.m. 5-5:30 p.m.	Plaquemines Plaquemines	(2)	(2)	(2)	0	0	0	0	2 waterspouts sighted 20 miles west of Burrwood.
5. July 5	6 p.m.	East Baton Rouge	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft reported by pilot 10 miles southeast of Baton Rouge.
6. July 5	6 p.m.	Assumption	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft reported by pilot 30 miles south-southeast of Baton Rouge.
7. July 13	2:30 p.m.	East Baton Rouge	(2)	(2)	(2)	0	0	35,000	0	Concrete building front blown out by internal pressure fell on parked automobiles at Baton Rouge.
8. July 26	1:20 p.m.	Terrebonne	(2)	(2)	(2)	0	0	(2)	(2)	Pilot reported tornado near Houma.
9. July 27	1:17 p.m.	Lafayette	(2)	(2)	(2)	0	0	(6)	(6)	Pilot reported tornado 2 miles south of Lafayette.
10. Aug. 1	Midmorning	Calcasieu	(2)	(2)	(2)	0	0	(2)	0	Reported in sparsely inhabited area west of Lake Charles.
11. Oct. 2	12:10 p.m.	Lafayette	NE	(4)	(1)	0	0	(5)	(5)	Pilot reported tornado between Duson and Scott.
12. Oct. 2	2:30 p.m.	Ouachita	NE	(4)	(1)	0	0	(6)	(6)	Trees uprooted in Bosco area.
13. Oct. 2	3:07 p.m.	West Baton Rouge	(2)	(2)	(2)	0	0	0	0	Pilot reported funnel aloft 30 miles east of Lafayette.
14. Oct. 20	7:20 p.m.	Iberia	NE	(4)	(1)	0	2	10,000	(6)	At New Iberia, trees blown over on house, wrecking it and injuring 2 persons.
15. Dec. 22	Noon	Avoyelles	(2)	(2)	(2)	0	0	(2)	0	Unconfirmed tornado.
16. Dec. 22	4:55 p.m.	Tangipahoa	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft reported near Amite.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
MAINE										
1. May 8	1 p.m.	Waldo	NE	1	20	0	0	$800	$0	Dust devil demolished garage at Belfast, then moved out over Penobscot Bay where it became a waterspout. Dissipated when it reached point 1/2 mile from land.
2. June 1	4:45 p.m.	York	E	1/2	10	0	0	10,000	0	At East Lebanon, tornado destroyed barn and slightly damaged house.
3. Sept. 14	4:10 p.m.	Kennebec	NE	2	100	0	0	15,000	0	Tornado path through grounds of Augusta State Hospital. Damage to buildings and trees.
4. July 24	Afternoon	Aroostook	E	(2)	(2)	0	0	0	0	Observers at Loring Air Force Base at Limestone reported funnel cloud dangling, but not reaching surface.
MARYLAND										
1. July 4	6:45 p.m.	Charles	(2)	(2)	(2)	0	0	(2)	(2)	Pilot over Charlotte Hall reported funnel cloud aloft.
2. July 8	Afternoon	Talbot	(2)	(2)	(2)	0	0	(2)	(2)	3 waterspouts observed on Choptank River 2 miles west of Hurlock.
3. July 8	Afternoon	Talbot								
4. July 8	Afternoon	Talbot								
5. July 8	Afternoon	Talbot	(2)	(4)	(1)	0	0	(6)	0	Apparent tornado at Royal Oak twisted off large tree and scattered debris.
MASSACHUSETTS										
1. June 1	2 p.m.	Worcester	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft observed in northern part of Worcester.
2. June 1	2:30-4:20 p.m.	Hampden and Worcester	NE	(2)	(2)	0	12	[1] 300,000	C	At least 4 tornadoes spawned by severe thunderstorm cells. Greatest damage in Westfield area, amounting to over $250,000. In this area 5 curing barns as well as shade tobacco netting and supports levelled. At Chicopee Center about 3 p.m., home exploded outward, causing damage of $15,000. Another storm, possible tornado, about 3 p.m., struck in West Springfield and Springfield with much damage to trees and powerlines. Rotary motion in direction of felled trees evident, but funnel not seen. Damage in this area estimated at $25,000. Over Fitchburg at 4 p.m., circus tent "ballooned up" pulling stakes and collapsing, injuring 12 persons. Large barn completely demolished and debris scattered over 1 acre of land, with loss of livestock and property estimated at $5,200. Additional damage by fallen trees, etc., brings damage to this area to $10,000.
3. June 1	Ditto	Ditto								
4. June 1	Ditto	Ditto								
5. June 1	Ditto	Ditto								
6. June 13	4:45 p.m.	Essex	E	1	10	0	0	800	0	Funnel at surface did not appear to be attached to higher storm cloud. Struck farm building in Methuen; roof removed.
7. Sept. 9	Noon	Barnstable	(2)	(2)	(2)	0	0	0	0	Several waterspouts observed from Nauset Beach and off Nantucket.
8. Sept. 9	Noon	Barnstable								
9. Sept. 12	1:30 p.m.	Hampden	NE	2	30	0	0	300	0	At Wilbraham, funnel observed, but damage slight. Felled trees and broke powerlines. Accompanied by hail and lightning.
10. Nov. 21	11:08 p.m.	Worcester	SE	[3] 100	12	0	0	750,000	0	At Clinton, damage confined almost entirely to printing factory. No funnel seen, but roar heard along narrow path in residential area.
11. Nov. 21	11:40 p.m.	Essex	ENE	1/4	20	0	0	30,000	0	No funnel seen, but noise described as "like a freight train." Sound of hail heard. At Merrimac, 25 buildings damaged. 1 home rotated somewhat and moved 5 feet from foundation at opposite corner.
12. Nov. 22	12:15 a.m.	Norfolk	NE	[3] 650	25	0	0	5,000	0	At Canton, witness awakened by "terrific noise" while house was rocking and debris flying by window. Barn demolished, several roofs damaged, and trees uprooted.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
MASSACHUSETTS (Cont'd)										
13. Dec. 18	10:15 a.m.	Essex	SE	(2)	(2)	0	0	$300	$0	Suspected tornado picked up wire from coil on ground, lifting it aloft to short and burn electric transmission line serving North Andover. Some evidence of rotary motion.
MICHIGAN										
1. Mar. 6	Evening	Ottawa	ENE	12	50-100	0	0	$50,000	0	Formed 6 miles north of Holland, moved through rural area. 5 barns, 1 house, and several smaller structures damaged or destroyed.
2. Apr. 3	5:22 p.m.	Berrien	NE	15	(2)	0	0	0	0	Large waterspout observed from New Buffalo, dissipated as it reached shore between Bridgman and Stevensville.
3. Apr. 3	6:30-7:41 p.m.	Allegan, Ottawa, Kent, and Montcalm	NE	65	100-400	18	340	10,500,000	0	Tornado first reported near Saugatuck at 6:30 p.m., passed Holland and Zeeland, striking Hudsonville at 6:58 p.m. Hudsonville left in ruins with 14 persons dead. Standale, west of Grand Rapids next struck at 7:11 p.m., and nearly wiped out, with loss of 4 lives. Tornado continued through northwestern suburbs of Grand Rapids, on through Rockford, dissipating near Trufant at 7:41 p.m. 322 homes, 100 farm buildings, and 105 other structures destroyed or badly damaged.
4. Apr. 3	6:35-7:22 p.m.	Manistee, Benzie, Grand Traverse and Leelanau	NE	52	50-400	2	24	400,000	200,000	Tornado developed north of Portage Lake, then through Benzie, northwestern Grand Traverse, and eastern Leelanau Counties, entering Grand Traverse Bay southeast of Suttons Bay about 7:22 p.m. 2 persons killed in Benzie County. 13 homes destroyed, 7 damaged, and large number of barns and other farm buildings destroyed. 15,000 fruit trees injured or uprooted in Leelanau County.
5. Apr. 3	7:15 p.m.	Van Buren, Allegan, Kent, and Barry	NE	58	50-200	0	12	1,000,000	10,000	Tornado developed southwest of Bangor, moved through Allegan, northwestern Barry, dissipated south of Lowell, Kent County, about 8:30 p.m. Heavy losses in Bangor, Bloomingdale, and Allegan. 23 homes destroyed, 13 damaged, and large number of barns and other farm buildings wrecked. Factory in southern Allegan demolished.
6. Apr. 14	7 p.m.	Lenawee	(2)	(4)	(1)	0	0	1,000	0	Tornado dipped to ground briefly in Morenci area, moving barn a foot off foundation, then lifted.
7. May 9	10:15 a.m.	Van Buren and Berrien	SE	1	(1)	0	0	6,000	0	Struck farm northwest of Hartford, badly damaging 3 buildings. Funnels aloft sighted near Coloma.
8. May 9	10:15 a.m.	Ditto	SE							
9. May 9	10:15 a.m.	Ditto	SE							
10. May 11	8:30 p.m.	Washtenaw	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted near Ann Arbor.
11. May 12	4:05 p.m.	Montcalm and Isabella	NE	10	(2)	0	0	150,000	0	Storm moved from near Sixlakes, Montcalm County, to southwestern Isabella County. 9 barns destroyed and other farm property damaged.
12. May 12	4:15 p.m.	Gratiot	ESE	5	800	1	1	200,000	0	Tornado east of Ithaca destroyed 12 barns and damaged other farm property.
13. May 12	5:02 p.m.	Clinton	SE	10	(2)	0	3	500,000	0	Tornado first reported at Hubbardston, lifting and dissipating just before reaching St. Johns. About 30 barns destroyed and many others damaged.
14. May 12	5:20 p.m.	Shiawassee	ESE	2	(2)	0	0	75,000	0	Developed just west of Laingsburg. 1 home, 2 barns, and a few other farm buildings destroyed and 15 homes damaged.
15. May 12	5:25-7:50 p.m.	Genessee	E	6	100	3	116	4,000,000	0	Tornado hit southeastern edge of Flint, moved through suburban and rural area. 71 homes, 5 commercial buildings, and

See reference notes at end of table.

TORNADO DATA

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
MICHIGAN (Cont'd)										71 other structures destroyed; 285 homes and 14 commercial buildings damaged, and television station antenna toppled. Other funnels aloft at 6:20 p.m., and 7:50 p.m., in vicinity of Flint.
16. May 12	5:25-7:50 p.m.	Genessee	E							
17. May 12	Ditto	Genessee	E							
18. May 12	5:45 p.m.	Wayne	SE	10	20-380	0	0	$25,000	$0	Originated 4 miles north-northwest of Wayne. Spotty damage along path.
19. May 12	6 p.m.	Saginaw	SE	4	50-100	0	0	50,000	0	1 home, 2 barns, and other farm buildings destroyed in rural area southwest of St. Charles.
20. May 12	6 p.m.	Livingston and Oakland	ESE	10	100	0	5	100,000	0	Touched ground just north of Brighton, then moved into southwestern Oakland County. 5 homes and several barns destroyed or badly damaged.
21. May 12	6:55 p.m.	Wayne	ESE	6	30-400	0	22	500,000	0	Developed in Allen Park, just southeast of Detroit, moved through suburb of Lincoln Park. 3 homes and church destroyed, 99 homes and 30 other buildings damaged. Funnels aloft in Detroit area later in evening.
22. May 12	6:55 p.m.	Wayne	ESE							
23. May 12	6:55 p.m.	Wayne	ESE							
24. May 13	1:30 a.m.	St. Clair	E	1	100	0	2	100,000	0	Tornado first touched ground just north of New Baltimore. 1 home and several barns destroyed, and several homes and other buildings damaged.
25. May 13	2 a.m.	Muskegon	NE	(2)	(2)	0	0	0	0	Several funnels aloft sighted in Muskegon area.
26. May 13	2 a.m.	Muskegon	NE							
*27. June 26	1:42 p.m.	Berrien and Van Buren	NE	3 200	10	0	0	200	0	Funnel aloft moved into Michigan from Indiana. Dipped to surface briefly once near Niles, wrecking tool shed and picking up several heavy oil drums, then moved to near Lawton.
28. June 26	7:20 p.m.	Gratiot	NE	8	(2)	0	2	125,000	10,000	Storm apparently originated near Perrinton and moved through rural areas. Several farms badly damaged, 11 buildings downed, about 50 others damaged. 2 persons reported seeing funnel cloud, according to report from sheriff.
29. June 26	P.m.	Berrien, Kent, and Ionia	(2)	(2)	(2)	0	0	0	0	Unconfirmed reports of funnels aloft near St. Joseph, Cascade, and Lake Odessa.
30. June 26	P.m.	Ditto								
31. June 26	P.m.	Ditto								
32. July 1	2 p.m.	Alcona	NE	1	(1)	0	0	5,000	0	Waterspout formed on Hubbard Lake, lifted as it hit shore, but destroyed drive-in movie screen, moved docks, and uprooted trees.
33. July 1	Afternoon	Kent	(2)	(4)	(1)	0	0	2,000	0	Funnel aloft dipped briefly to surface near Sparta, tore roof off home and uprooted trees.
34. Aug. 4	9:16 a.m.	Wayne	(2)	(4)	(1)	0	0	5,000	0	Small tornado near New Boston.
35. Aug. 7	Afternoon	Chippewa	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted near Pickford.
36. Aug. 24	7:50 a.m.	Van Buren and Berrien	E	(2)	(2)	0	0	0	0	Several waterspouts sighted between New Buffalo and South Haven.
37. Aug. 24	7:50 a.m.	Ditto	E							
38. Aug. 30	2:40 p.m.	Berrien	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted near Niles.
39. Sept. 7	2 a.m.	Cass	(2)	(4)	(1)	0	0	500	0	Possible tornado near Sumnerville toppled trees and caused other minor damage.
40. Nov. 21	8 a.m.	Presque Isle	NE	(4)	(1)	0	0	1,500	0	Possible tornado damaged house and barns, uprooted trees, and felled power poles near Posen.
MINNESOTA										
1. May 10	8:25 p.m.	Nobles	NE	10	880	0	0	100,000	0	In Rushmore and Reading areas, approximately 12 farmsteads, 20 homes, and 8 business places damaged. Trees uprooted. Utilities disrupted.
2. June 14	3 p.m.	Washington	(2)	(2)	(2)	0	0	0	0	Washington County sheriff reported funnel-like cloud northwest of Stillwater.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

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MINNESOTA (Cont'd)										
3. June 23	7:10 p.m.	Koochicking	(2)	(2)	(2)	0	0	(6)	$0	Waterspout observed at Jack Fish Bay on Rainy Lake, 10 miles northwest of International Falls. Trees downed.
4. June 25	6 p.m.	Lincoln	E	(2)	(2)	0	0	$75,000	(5)	Possible tornado in Ivanhoe area destroyed buildings on 8 farms. Several cattle killed. Trailer home tipped over. Utilities out.
5. June 29	7:30 p.m.	Rock	E	(2)	(2)	0	0	(5)	(5)	5 miles northwest of Luverne, barns and outbuildings on 3 farms destroyed.
6. June 30	1 p.m.	Olmsted	(2)	(2)	(2)	0	0	0	0	Pilot reported funnel cloud aloft 30 miles southwest of Rochester. At 1:30 p.m., ground observer saw funnel touch ground briefly 12 miles southwest of Rochester.
7. July 6	11:34 p.m.	Brown	(2)	(2)	(2)	0	0	0	0	At Springfield, funnel cloud reported.
8. July 7	6:37 p.m.	Norman	(2)	(2)	(2)	0	0	0	0	Tornado funnel observed 6 miles southwest of Borup.
9. July 17	1:55 p.m.	Kandiyohi	SE	6	50	0	0	10,000	(5)	4 funnel clouds observed in Pennock area. 1 touched ground, demolished barn, killed 3,000 turkeys; crops and trees twisted, wild life destroyed. Farmer, lying in ditch to escape funnel, picked up and deposited uninjured in field.
10. July 17	1:55 p.m.	Kandiyohi	SE							
11. July 17	1:55 p.m.	Kandiyohi	SE							
12. July 17	1:55 p.m.	Kandiyohi	SE							
13. July 18	3:59 p.m.	Grant	NE	(2)	(2)	0	0	0	0	Tornado funnel seen 10 miles northwest of Norcross. At 4:06 p.m., lineman near Elbow Lake reported funnel briefly touched ground. No damage resulted.
14. July 18	5:25 p.m.	Stearns	(2)	(2)	(2)	0	0	0	0	Funnel aloft reported 8 miles north of Brooten.
15. Aug. 5	8:40 p.m.	Roseau	(2)	(2)	(2)	0	0	0	0	2 funnel clouds aloft reported at Pinecreek.
16. Aug. 5	8:40 p.m.	Roseau								
17. Aug. 28	6:30 p.m.	Le Sueur	(2)	(2)	(2)	0	0	0	0	Just north of Le Sueur, several funnel clouds observed.
18. Aug. 28	6:30 p.m.	Le Sueur								
19. Aug. 30	3:20 p.m.	Norman	NE	(2)	(2)	0	0	(5)	(5)	Farm family observed tornado funnel as it touched ground near their home 3 miles east-northeast of Hendrum. Roof of small building picked up and destroyed, hayrack destroyed, shingles blown off granary. Same funnel touched ground 7 miles west of Ada, destroying machine shed.
20. Oct. 29	9:30 p.m.	Big Stone	NNW	(2)	(2)	0	0	(5)	(5)	4 miles southeast of Beardsley, barn and 2 cabins destroyed, livestock killed, other farm buildings twisted, and machinery flipped over. Some lightning and hail observed.
MISSISSIPPI										
1. Feb. 16	6:20 p.m.	Monroe	ENE	1-1/4	100-300	1	55	1,000,000	0	Struck first in village of Prairie, moved to Aberdeen.
2. Feb. 17	7 p.m.	Alcorn	ENE	3	300	0	0	20,000	0	Slight damage in Corinth and barns and small buildings destroyed in Farmington.
3. Feb. 17	10:20-10:40 p.m.	Clay	ENE	20	300	0	0	125,000	0	Developed at Pheba City, moved in skipping path to West Point. Plate-glass windows and glass-brick windows blown outward by explosive pressure.
4. April 3	2:30-6:30 p.m.	Sunflower to Lee	ENE	20	117	0	6	400,000	(6)	Began at Lynn, Sunflower County, passed through Leflore, Grenada, Yalobusha, Calhoun, and Pontotoc Counties to near Saltillo, Lee County. 2 persons injured at Lynn when their house was demolished, and 4 injured at Belden, Mt. Vernon, Bucy, and Saltillo. Speed of movement of storm about 30 m.p.h.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
MISSISSIPPI (Contd)										
5. April 3	7:30 p.m.	Clay	ENE	6	100	0	2	$150,000	$20,000	From Cedarbluff area to Siloam, 2 churches, several homes, barns destroyed; several thousand chickens, a number of dairy cattle, and several horses killed.
6. July 19	3:50 p.m.	Tippah	(2)	(2)	(2)	0	0	2,500	2,500	Possible tornado at Ripley.
7. July 23	6:50 p.m.	Pearl River	(2)	(2)	(2)	0	0	(6)	0	Pilot reported tornado in uninhabited area west of Picayune.
MISSOURI										
1. Feb. 24	10:30 p.m.	Barton	(2)	(4)	(1)	0	0	(5)	500	1-3/4 miles northeast of Iantha, shed blown away. All 4 corners of tile barn broken open.
2. Feb. 24	11 p.m.	Dade	NE	6	(1)	0	0	15,000	0	At Everton, tornado seemed to touch ground only a few yards at a time. Barn destroyed leaving contents undamaged; branch driven through wall; porch destroyed.
3. Feb. 24	11:30 p.m.	Newton	NE	1/4	100	0	0	6,000	0	In Seneca area, several roofs partly blown off. 2 houses moved from foundations. Several windows burst. 3 sheds carried 1/4 mile on farm 3 miles north of Granby.
4. Feb. 24	11:55 p.m.	Greene	NE	(4)	(1)	0	0	(6)	(6)	Funnel seen aloft 3 miles north of Springfield. Damage occurred 2 miles northeast where several small buildings blown over.
5. Feb. 25	12:05 a.m.	Franklin	NE	(4)	100	0	0	5,000	0	4 miles southwest of Pacific, 2 barns unroofed. Tree limbs broken along narrow path.
*6. Feb. 25	12:20 a.m.	St. Louis	ENE	2	(2)	0	16	150,000	0	Tornado moved from Gray Summit near St. Louis to Clinton, Ill. 200 homes damaged, 12 in one block.
7. Feb. 25	3:32 a.m.	Mississippi	NE	1/2	(1)	0	0	4,000	0	Cinder-block building at Pinhook leveled. Storm struck again 1/2 mile northeast.
8. Feb. 25	4 a.m.	New Madrid	E	7	100	0	0	15,000	0	8 miles north of New Madrid, 6 homes and 3 buildings damaged. Numerous sheet metal roofs damaged.
9. Mar. 6	8:30 p.m.	Perry	E	1	(1)	0	0	30,000	0	Occurred in Brewer area.
10. Apr. 2	1 a.m.	Worth	NE	3	30	0	0	1,000	0	3 farms hit, destroying outbuildings 2-1/2 miles southeast of Allendale.
11. Apr. 3	12:30 a.m.	McDonald	NE	1-3	35	0	1	10,000	0	5 barns destroyed, home and roof damaged, and trucks and trailers damaged in path from Noel to Pineville.
*12. Apr. 3	12:50 a.m.	Jasper	NE	1	50	0	2	100,000	0	Roof destroyed on factory, merchandise damaged. 30 homes damaged as tornado struck Joplin, Webb City, and Carterville. Tornado crossed from Oklahoma and through Baxter Springs, Kans.
13. Apr. 28	Early a.m.	Buchanan	(2)	2	(2)	0	0	(5)	0	Many buildings and trees damaged 2 miles southeast of Faucett.
14. May 13	7 p.m.	Vernon	(2)	(2)	(2)	0	0	(5)	0	2 funnel clouds observed north and northwest of Nevada. Many trees and small buildings damaged.
15. May 13	7 p.m.	Vernon								
16. May 22	Late evening	Randolph	(2)	(2)	(2)	0	0	(5)	0	Farm buildings destroyed at Yates.
17. June 27	4:30-6:30 p.m.	Barry	E	(2)	(2)	0	0	0	0	2 funnels sighted, 20 miles east and 10 miles west of Washburn.
18. June 27	Ditto	Barry	E							
19. July 2	2:30-2:50 p.m.	Clay	NW	(2)	(2)	0	0	(5)	0	Much damage to farm buildings 2 miles north of Excelsior Springs.
20. July 2	5:30 p.m.	Monroe	E	1-1/2	100	0	0	(5)	0	1 mile east of Middlegrove, farm buildings destroyed.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
MISSOURI										
21. July 3	9-10 p.m.	Barton	NE	(2)	(2)	0	0	$0	$0	Funnel cloud aloft at Golden City.
22. July 11	10 p.m.	Worth	(2)	(2)	(2)	0	0	(2)	(2)	Possible tornado at Sheridan.
23. Aug. 30	10:17 p.m.	St. Louis	E	8	50	0	0	15,000	0	Damage to Mid-America Jubilee structures and 2 houses at Florissant.
24. Aug. 31	8:10 p.m.	Newton	(2)	(2)	(2)	0	0	(2)	0	Sheriff's office at Neosho reported funnel cloud 15 miles southeast; unable to get verification.
25. Dec. 4	7-8 p.m.	Henry	NE	10	(2)	0	2	50,000	0	Buildings on 2 farms at Montrose severely damaged. Buildings on 5 farms at Slater damaged.
26. Dec. 4	7:30 p.m.	Bates	NE	15	200	0	2	20,000	0	Damage to buildings at Ballard.
27. Dec. 4	8:30 p.m.	Saline	NE	10-12	(2)	0	0	50,000	0	Buildings on 5 farms at Slater damaged.
28. Dec. 4	9 p.m.	Boone	NE	8	400	0	0	75,000	0	Damage to farm buildings, trees, telephone lines, and machinery at Centralia.
MONTANA (none reported)										
NEBRASKA										
1. Apr. 2	10:30-11 p.m.	Nemaha	(2)	3	100	0	0	2,000	0	Near Auburn, garage demolished.
2. Apr. 28	1:15-2a.m.	Jefferson and Gage	SE, E, and NE	50	(1)	0	0	75,000	(6)	Occurred in Daykin, Plymouth, and Cortland areas. Many farm buildings destroyed or damaged. Straws driven through house siding. Portion of large barn scattered 500 feet in all directions.
3. May 10	4-6 p.m.	Adams and Hall	NNE	(4)	(1)	0	0	20,000	0	Property damaged from Juniata to Doniphan.
4. May 10	8 p.m.	Washington	NE	(4)	(1)	0	0	2,500	0	Suspected tornado struck fair grounds near Arlington, skipped over town, than struck farm.
5. May 12	5-6 p.m.	Polk	ENE	(4)	(1)	0	4	40,000	0	Near Osceola, property damaged.
6. May 12	10 p.m.	Douglas	SE	3	(1)	0	0	75,000	0	Occurred at Omaha. Funnel observed.
7. May 29	8:30-9:15 p.m.	Gage	E	5	(1)	0	0	9,000	0	Funnel observed north and west of Odell. Several sets of farm buildings damaged.
8. May 30	4:30 p.m.	Clay	NE	4	300	0	0	25,000	0	Funnel observed, roaring noise heard near Sutton.
9. June 5	9:40 p.m.	Keya Paha	NE	(2)	(1)	0	0	500	0	6 miles east of Sparks, frame building picked up, carried 50 feet, and flattened.
10. June 6	3:30 p.m.	Buffalo	SE	2	500	0	1	10,500	0	2-1/2 miles north of Pleasanton, man blown from haystack and injured. 1 set of farm buildings and contents destroyed, another set damaged.
11. June 6	6:20-7:30 p.m.	Fillmore	SE	16	(1)	0	2	205,000	0	In Geneva area, masonry wall broken outward. Many farm buildings destroyed. Funnel observed.
12. June 6	7:20 p.m.	Lancaster	SE	3	(1)	0	0	4,300	0	2 miles west of Denton, large barn damaged, granary and corncrib carried over a mile.
13. June 6	7:30 p.m.	Lancaster	NE	(4)	(1)	0	0	1,000	0	Barn picked up 3 miles southwest of Emerald.
14. June 6	7:30 p.m.	Lancaster	NE	(2)	100	0	0	3,000	0	Strongly built corncrib and its concrete foundation demolished 2 miles north-northwest of Walton.
15. June 16	10 p.m.	Custer	NE	1/2	200	0	0	6,000	0	Farm buildings destroyed 10 miles south of Broken Bow.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

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						Killed	Injured	Property (exclusive of crops)	Crops	
NEBRASKA (Cont'd)										
16. June 21	4:30 p.m.	Loup	(2)	(2)	(2)	0	0	(5)	$0	Suspected tornado damaged 3 sets of farm buildings west of Almeria.
17. June 24	Afternoon	Cheyenne	NE	(4)	(1)	0	0	0	0	Funnel observed 15 miles northwest of Sidney; touched ground in uninhabited area.
18. June 25	11 p.m.	Furnas	SE	16	20	0	0	40,000	0	Near Hendley, buildings burst outward.
19. July 1	2 a.m.	Stanton	(2)	(4)	(1)	0	0	500	0	Suspected tornado demolished corncrib in Wisner area.
20. July 1	Early a.m.	Phelps	NE	1/2	(1)	0	0	2,000	0	Barn and chickenhouse scattered over areas southwest of Atlanta.
21. July 4	2:20 p.m.	Cheyenne	(2)	(2)	(2)	0	0	0	0	Funnel observed by pilot, occasionally touched ground in east-central part of county.
22. July 4	2:25 p.m.	Deuel	(2)	(4)	(1)	0	0	(6)	0	Funnel observed by Ground Observer Corps near Big Springs.
*23. July 4	Afternoon	Banner	E	(4)	(1)	0	0	0	0	Funnel observed, touched ground in sparely settled country in western portion of county; moved into State from Wyoming.
24. July 4	4:40 p.m.	Hall	(2)	(2)	(2)	0	0	0	0	2 funnels aloft reported 10 miles north of Grand Island.
25. July 4	4:40 p.m.	Hall								
26. July 4	6:50 p.m.	Antelope	SE	(4)	(1)	0	0	0	0	Funnel observed by Highway Patrolman west of Neligh.
27. July 12	5:30 p.m.	Hitchcock	NE	(4)	(1)	0	0	0	0	Funnel aloft reported 2-1/2 miles south of Palisade.
28. July 12	7 p.m.	Hitchcock	NE	(4)	(1)	0	0	0	0	3 funnels reported by Air Force Filter Center north of Culbertson.
29. July 12	7 p.m.	Hitchcock								
30. July 12	7 p.m.	Hitchcock	NE							
31. July 14	11 p.m.	Butler	(2)	(4)	(1)	0	0	0	0	Suspected tornado aloft reported near Bellwood.
32. July 18	1:32 p.m.	Hall	(2)	(4)	(1)	0	0	0	0	Funnel aloft reported south of Grand Island.
33. July 18	7:20 p.m.	Saunders	SE	(4)	(1)	0	0	(6)	0	Suspected tornado unroofed barn near Cedar Bluffs.
34. July 18	7:25 p.m.	Hamilton	(2)	(4)	(1)	0	0	0	0	Tornado aloft reported 2 miles north of Aurora.
35. July 28	4:30 a.m.	Cass	NE	1	100	0	0	1,000	0	Large trees twisted off and barn roof partially removed 3 miles northeast of Nehawka.
36. July 30	3:25 p.m.	Saunders	NNE	(4)	(1)	0	0	2,000	0	Suspected tornado 3 miles northwest of Colon.
37. July 31	6:49 p.m.	Cheyenne	(2)	(4)	(1)	0	0	0	0	Funnel aloft reported 5 miles south of Lodgepole.
38. Aug. 6	8:15 p.m.	Knox	NW	1/4	70	0	0	600	(5)	3 head of cattle killed. Boy picked up by wind, but not injured. Occurred in northwestern corner of county.
39. Aug. 15	5:30 p.m.	Brown	E	6	(1)	0	0	2,000	0	Occurred 8 miles northwest of Ainsworth.
40. Sept. 3	5 p.m.	Johnson	NE	2	(1)	0	0	(5)	0	Damaged farm buildings north of Table Rock.
41. Oct. 29	3:30-5:30 p.m.	Custer to Knox	NE	100	50	0	0	30,000	(6)	Several sets of farm buildings damaged or destroyed in area from Comstock to near Bloomfield.
42. Oct. 29	4-7:30p.m.	Lincoln to Rock	NNE	140	440	0	1	310,000	30,000	Funnel observed. Many farm buildings destroyed, haystacks scattered, and corn stripped from stalks in path from southwestern Lincoln to Rock Counties.
43. Oct. 29	6:30-8:30 p.m.	Furnas to Buffalo	NE	75	(1)	0	1	100,000	(6)	Funnel observed. Many sets of farm buildings destroyed or damage from Wilsonville to near Kearney.

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TORNADO DATA

YEAR 1956

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						Killed	Injured	Property (exclusive of crops)	Crops	
NEBRASKA (Cont'd)										
44. Oct. 29	10:45-11:15 p.m.	Wayne	NE	10	(1)	0	0	5,000	(6)	Several farm buildings destroyed or damaged south and east of Winside.
45. Nov. 2	(2)	Keya Paha	NE	(4)	(1)	0	0	0	$0	Funnel observed in sparsely settled range country near Springview.
NEVADA (none reported)										
NEW HAMPSHIRE										
1. June 27	4:30 p.m.	Hillsboro	NNE	3 100	25	0	0	$400	0	Funnel did not quite reach ground. Only small area affected at Manchester.
2. July 9	6:52 p.m.	Coos	NE	2	200	0	0	7,000	1,000	Funnel observed. Buildings, powerlines, timber, and potato crop damaged southeast of Colebrook.
NEW JERSEY										
1. May 7	12:15 a.m.	Cape May	E	3 250-350	25-50	0	0	10,000	0	At Woodbine, wall of cinder-block workshop blown out; small frame garage blown a few yards away; part of roof carried 50 yards and demolished.
2 July 13	1:26-1:30 p.m.	Camden	ENE	3 750-1000	150	0	8	(5)	(5)	At Haddon Heights, funnel apparently touched surface twice along path, Much damage to buildings, vehicles, and trees.
3. July 13	3:40-4p.m.	Burlington	NE	1	100-200	0	0	T 30,000	C	In Vincentown and Pemberton areas, considerable damage to buildings and trees. Walls and glass blown out; small structures blown away or carried off foundations.
4. Sept. 6	6-7 p.m.	Bergen	(2)	(4)	(1)	0	0	(5)	0	In Ridgefield area, 150-foot roof blown off, large air-conditioning unit carried 250 feet . 1-story frame building collapsed, and carport blown over.
NEW MEXICO										
1. May 25	10:45 a.m.	Santa Fe	NE	15	50	0	0	0	0	Tornado observed over open country near Edgewood.
2. May 29	Evening	Lea	(2)	(2)	(2)	0	0	0	0	In isolated area 15 miles northwest of Lovington, little information available.
3. July 8	4:30 p.m.	Guadalupe	S	I	50	0	0	0	0	Touched ground over open rangeland 2 miles southwest of Pastura.
4. July 31	9:45 a.m.	Bernalillo	N	(2)	(2)	0	0	0	0	Funnel observed aloft, 5 miles southeast of Tijeras.
5. Aug. 20	12:30 p.m.	Santa Fe	NE	1/2	30	0	0	1,200	0	Unroofed home, damaged windmill and car at Cedar Grove.
6. Aug. 24	10 a.m.	San Miguel	NE	(2)	(2)	0	0	0	0	Funnel aloft reported 10 miles northwest of Las Vegas.
NEW YORK										
1. July 1	8:45 p.m.	Yates	E	1/2	600	0	0	(5)	0	Small tornado advanced over Glenora Point, became waterspout when it moved out into Seneca Lake. Trees blown down and roofs and chimneys damaged.
NORTH CAROLINA										
1. Mar. 8	(2)	Buncombe	(2)	3 400	75	0	0	0	2,000	Destroyed 4 acres of spruce and balsam timber in Blue Ridge Parkway area.
2. Mar. 18	3:30 p.m.	Wake and Durham	NE	1/4	100	0	0	2,000	0	Tobacco barn and timber destroyed about 2 miles northwest of Raleigh-Durham Airport.
3. Mar. 18	3:30 p.m.	Wake	NE	3	50	0	1	10,000	0	Several houses destroyed or damaged and barn destroyed at Garner.

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TORNADO DATA

YEAR 1956

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						Killed	Injured	Property (exclusive of crops)	Crops	
NORTH CAROLINA (Cont'd)										
4. Mar. 18	3:45 p.m.	Franklin	NE	1	50	0	0	$10,000	$0	Home damaged and 8 outbuildings destroyed north of Louisburg.
5. Mar. 18	4:30 p.m.	Wayne	(2)	1	30	0	0	$3,000	$0	3 barns destroyed and roofs damaged at Smiths Chapel
6. Mar. 18	5:30 p.m.	Pitt	SE	1	40	0	0	3,000	0	Funnel seen. Tobacco barn demolished and packing house unroofed at Grifton.
7. Mar. 18	6 p.m.	Hyde	NE	1	150	0	1	5,000	0	Funnel seen. 1 house destroyed, several outbuildings damaged, and trees blown down at Swanquarter.
8. Apr.6	2-3 p.m.	Gaston, Union and Mecklenburg	E	50	100	0	0	50,000	0	Trees uprooted and houses destroyed in a dozen communities from Crowders, Gaston County to Stallings, Union County.
9. Apr. 6	4:30 p.m.	Harnett and Lee	E	15	100	0	0	10,000	0	Damaged several houses, destroyed outbuildings, and killed a horse and some poultry.
10. Aug. 2	12:45-12:55 p.m.	Dare	E	(2)	(2)	0	0	0	0	Occurred on Roanoke Island, a few miles south of Manteo over uninhabited land.
NORTH DAKOTA										
1. May 16	3:30 p.m.	Grand Forks	E	(2)	(2)	0	0	5,000	0	Isolated tornado reported sighted north of Thompson, 10 miles south of Grand Forks.
2. June 5	6:10 p.m.	McLean	NE	(2)	(2)	0	0	20,000	0	Near Coleharbor, barns and smaller buildings demolished, antennas destroyed, telephone and electric services disrupted. Black funnel cloud sighted by several persons.
3. June 18	3:15 p.m.	Mercer and Oliver	ENE	15	100	0	1	65,000	5,000	In Beulah area railway employee injured when caboose and several grain cars lifted 4 or 5 feet off track and dumped into ditch. 1,000-pound feed grinder carried several feet.
4. June 18	6:30 p.m.	Burleigh and Kidder	ENE	35	50	0	0	60,000	1,000	Tornado traveled from Baldwin to Tuttle mostly over pastureland, but 1 home destroyed, 16 homes and 21 other buildings damaged. Some chickens and a calf killed.
5. July 3	4:10 p.m.	Sioux	(2)	(2)	(2)	0	0	0	0	Funnel touched ground and then dissipated 50 miles south of Bismarck.
6. July 7	5:45 p.m.	Cass	(2)	(2)	(2)	0	0	(2)	(2)	Tornado reported on RAWARC 6 miles north of Fargo.
7. July 12	1:30 p.m.	Sargent and Richland	(2)	(2)	(2)	0	0	0	0	Several funnels seen at Rutland and Lidgerwood; 1 touched ground in open field.
8. July 12	1:30 p.m.	Ditto	(2)							
9. July 18	10 a.m.-1 p.m.	Ramsey	E	(2)	(2)	0	0	0	0	3 or 4 funnel clouds observed in northern portion of county.
10. July 18	Ditto	Ramsey	E							
11. July 18	Ditto	Ramsey	E							
12. July 18	Ditto	Ramsey	E							
13. July 18	Afternoon	Grand Forks, Cass, Traill, and Stutsman	E	(2)	(2)	0	0	0	0	6 funnel clouds; several touched ground. 2 observed at 2:49 p.m., west of Grand Forks, 2 at 3:18 p.m., west of Fargo, 1 at 3:12 p.m., at Hillsboro, and another in Stutsman County, time unknown.
14. July 18	Afternoon	Ditto	E							
15. July 18	Afternoon	Ditto	E							
16. July 18	Afternoon	Ditto	E							
17. July 18	Afternoon	Ditto	E							
18. July 18	Afternoon	Ditto	E							
19. Aug. 5	(2)	Stutsman	(2)	(2)	(2)	0	0	0	0	Tornado sighted by pilot.
20. Aug. 30	3:19 p.m.	Sargent	(2)	(2)	(2)	0	0	0	0	3 funnel clouds sighted within 5 miles of De Lamere.
21. Aug. 30	3:19 p.m.	Sargent	(2)							
22. Aug. 30	3:19 p.m.	Sargent	(2)							
23. Aug. 30	3:25 p.m.	Cass	N	6	60	0	8	250,000	20,000	Power, telephone, and telegraph poles toppled in snarl of wires and splinters. Southwestern Fargo and western Fargo without electric power for about 3 hours. 10 dwellings, several

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TORNADO DATA

YEAR 1956

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NORTH DAKOTA (Cont'd)										trailers, several farm buildings, and 10 business places seriously damaged or destroyed in 10-block area. 2 boxcars rolled off Northern Pacific tracks, and at trailer court, 1 trailer tossed over another and demolished.
24. Sept. 6	(2)	Barnes	(2)	(2)	(2)	0	0	$5,000	$4,000	Damage to only 1 farm reported in southwestern portion of county.
25. Sept. 15	Late afternoon	Bottineau	(2)	(2)	(2)	0	0	6,000	3,000	3 funnel clouds observed in northwestern portion of county. Granaries, garage, haystacks, and other articles moved and wrecked. Report received that grass was torn out of ground in path of tornado.
26. Sept. 15	Ditto	Bottineau	(2)							
27. Sept. 15	Ditto	Bottineau	(2)							
OHIO										
1. Feb. 25	5:35 a.m.	Hamilton	NE	1/2	100	0	Few	75,000	0	Suspected tornado did major damage to trailer camp 2 miles east of Harrison where trailers scattered and 1 concrete-block building demolished.
2. Feb. 25	5:45 a.m.	Butler	ENE	1	500	0	Few	500,000	0	At Hamilton, hundreds of homes and business buildings damaged.
3. Feb. 25	6:30 a.m.	Greene	NE	1/4	30	0	0	250,000	0	At Cedarville, poorly developed tornado passed overhead at elevation sufficient to tear roofs off houses.
4. Mar. 7	3:30 a.m.	Pike	E	3	400	0	0	50,000	0	Main destruction to cabin camps on Scioto River and to farm buildings in Wakefield area.
5. Apr. 3	8:30 p.m.	Hancock	E	(2)	(2)	0	0	0	0	Funnel cloud aloft reported at Jenera.
6. June 26	2:10 p.m.	Warren	NE	2	50	0	0	5,000	(6)	First evidence of damage about 1-1/2 miles southwest of Maineville, where top of silo and barn door blown off. Moved further, toppling brick chimneys, splintering trees, and unroofing outbuildings.
7. July 8	3:30 p.m.	Ashtabula	NE	25	30	0	0	75,000	15,000	In Hartsgrove and Denmark Townships, farm buildings, utilities, and crops damaged.
8. July 20	6:45 p.m.	Lorain	SE	1-1/2	150	0	0	4,000	5,000	No heavily populated areas hit. Main damage to orchard trees and farm buildings.
9. Aug. 5	12:52 a.m.	Trumbull and Mahoning	ESE	2	150	2	0	150,000	0	Fatalities by electrocution when powerlines fell on their automobile. Occurred in Liberty Township and Youngstown. Tore 1 home from foundation and destroyed it, tore off several roofs, overturned house trailer, collapsed concrete-block garage, and downed utility poles and lines.
OKLAHOMA										
1. Feb. 24-25	11:30 p.m.-12:15 a.m.	Muskogee and Cherokee	NE	(2)	(2)	0	0	50,000	0	Funnel reported sighted at Fort Gibson, moving along shore of lake. Considerable damage to boats, docks, and cabins as well as to roofs, windows, signs, automobiles, and trailer in Muskogee area. Home destroyed at Elm Grove.
2. Feb. 25	12 a.m.	McCurtain	SE	6	400	0	0	(6)	(6)	At Wright City, trees uprooted.
3. Mar. 27	7:20 p.m.	LeFlore	NE	1	500	0	0	100,000	0	Hail the size of chicken eggs fell over a 40-square mile area from Wilburton in Latimer County to Talihina. Tornado followed hailstorm in Talihina, damaging or destroying 7 homes, lumber company, and many outbuildings. TV antennas, trees, and utilities also damaged.

See reference notes at end of table.

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						Killed	Injured	Property (exclusive of crops)	Crops	
OKLAHOMA (Con't)										
4. Apr. 2	7:05 p.m.	Woods and Alfalfa	NE	20	400	0	2	$101,000	$0	Tornado traveled from Hopeton, Woods County to Burlington, Alfalfa County. 5 houses and 3 buildings destroyed, 15 homes and 7 buildings damaged. Grain elevator demolished and 11 boxcars overturned. 11 farmsteads received extensive damage.
5. Apr. 2	7:45 p.m.	Grant and Garfield	NE	18	100	0	4	100,000	0	Tornado traveled from northwestern Garfield County, just west of Pondcreek and Jefferson, and lifted near Medford, Grant County. Extensive damage resulted on 8 farms. 4 injuries resulted when farm home destroyed. 3 head of cattle killed when barn collapsed.
6. Apr. 2	8:45 p.m.	Kay	NE	(4)	(1)	0	0	(5)	0	Outbuildings destroyed on farm 6 miles north of Billings. Automobile, truck, tractor, hay, grain, and chickens destroyed.
7. Apr. 2	9:29 p.m.	Johnston	NE	8	25	0	0	4,000	0	Numerous outbuildings, drive-in theater concession stand, speaker posts, and fence destroyed near Tishomingo.
*8. Apr. 2	9:30 p.m.	Kay	NE	15	440-880	0	2	150,000	0	First touched down 6 miles southeast of Newkirk, skipped over Arkansas River and hit near Hardy, and on into Kansas. 2 injuries resulted when home fell in on them. Many farms destroyed. 6 cattle and 1 horse killed. Government bond found at Williamsburg, Kans., over 100 miles away.
9. Apr. 2	9:30 p.m.	Pawnee and Osage	NNE	3	100	0	1	20,300	0	Home destroyed, 3 damaged, many outbuildings destroyed, and some livestock killed near Skedee. Damaged extended to Fairfax, Osage County.
10. Apr.2	9:33 p.m.	Creek and Lincoln	NE	55	300	5	98	1,000,000	0	Tornado spawned over Grady County, and remained aloft over McClain, Cleveland, Oklahoma, Pottawatomie, and touched down at Jacktown, in Lincoln County. First destruction noted at Davenport and Stroud, Lincoln County and continued on to Drumright in Creek County. 40-block area devastated in Drumright where 63 homes destroyed, 203 damaged, 21 buildings destroyed, and 35 damaged. Several farms destroyed and a number of persons injured along path of destruction.
11. Apr. 2	10:30 a.m.	Tulsa	NE	1/4	34	0	0	(6)	0	Tornado touched ground in rural area near Owasso, destroying 2 outbuildings.
12. Apr. 2	11 p.m.	Muskogee and Wagoner	NE	(2)	(2)	0	0	0	0	Funnels aloft sighted in vicinity of Haskell, Muskogee, and Wagoner.
13. Apr. 2	11 p.m.		NE	(2)						
14. Apr. 2	11 p.m.	Ditto	NE	(2)						
15. Apr. 3	12:05 a.m.	Pushmataha	NE	2	100	0	3	20,000	0	Tornado caused damage and destruction to school and farm buildings at Sobol.
*16. Apr. 3	12:10 a.m.	Ottawa	NE	21	400	0	46	500,000	0	Tornado first struck ground near Narcissa, stayed on ground through Miami and Quapaw, then into Kansas and Missouri. Miami hardest hit, where 46 injured and 21 homes destroyed and 35 damaged. Quapaw had 5 homes destroyed. National Guard Armory and Northeastern A&M College in Miami received damage at $98,000. Many farmsteads damaged and cattle injured or killed.
17. Apr. 8	7:45p.m.	Roger Mills	NE	(4)	(1)	0	0	(6)	0	Tornado damaged trees and utility poles 1 mile west of Reydon.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
OKLAHOMA (Con't)										
18. Apr. 8	10:15p.m.	Garfield	NE	8	400	0	4	$500,000	$50,000	Several tornadoes or funnels aloft skipped around over Garfield County, causing widespread damage. Path of greatest destruction extended from near Waukomis to Enid. Numerous farmsteads destroyed, with loss of equipment and supplies. Semi-trailer tipped over and thrown 40 feet. Extensive damage to homes, businesses, utilities, etc., in Enid where 4 persons injured. $200,000 damage to hangars and 8 planes at Municipal Airport. Large radio antenna toppled. School at Garber severely damaged. 6 box cars blown over at Douglas. Homes, outbuildings, and railroad freight house destroyed or damaged in Covington.
19. Apr. 8	10:15p.m.	Garfield	NE							
20. Apr. 8	10:35p.m.	Major	SE	20	(2)	0	0	250,000	(6)	Possible tornadoes struck area from Fairview to Isabella. Debris indicated rotating motion.
21. Apr.8	10:35p.m.	Major	SE							
22. Apr. 8	11:30p.m.	Payne	SE	7	50	0	0	100,000	0	Tornado caused damage to roofs, outbuildings, utilities, etc., from Yost Lake to Glencoe.
23. Apr. 9	After Midnight	Osage	(2)	(2)	(2)	0	0	0	0	Highway Patrol reported tornado on ground near Barnsdall, evidently dissipated without damage.
24. Apr. 14	6:30p.m.	Pontotoc	NE	(2)	(2)	0	0	0	0	2 funnels aloft sighted southwest of Ada, 2 near Calvin, and 1 near Okmulgee.
25. Apr. 14	6:30p.m.	Hughes, and	NE							
26. Apr. 14	6:30p.m.	Okmulgee	NE							
27. Apr. 14	6:30p.m.	Ditto	NE							
28. Apr. 14	6:30p.m.	Ditto	NE							
29. Apr. 14	7:51p.m.	Payne	(2)	(2)	(2)	0	0	0	0	Ground Observer Corps reported funnel aloft at Glencoe.
30. Apr. 14	8:22p.m.	Payne	(2)	(2)	(2)	0	0	0	0	Ground Observer Corps reported funnel aloft at Glencoe.
31. Apr. 14	9:46p.m.	Payne	(2)	(2)	(2)	0	0	0	0	Ground Observer Corps and Highway Patrol reported funnel aloft southwest of Cushing.
32. Apr. 15	12:10p.m.	Craig	E	(2)	(2)	0	0	0	0	Funnel aloft sighted over Vinita.
33. Apr. 28	2:20 p.m.	Grady, McClain, and Cleveland	NE	25	(1)	0	0	(5)	0	Tornado first touched down 5 miles south of Chickasha, Grady County. First damage noted just south of Canadian River in McClain County to garage, automobile, and henhouse. Tornado remained aloft until 3 miles east of Norman, Cleveland County where barn and outbuildings destroyed.
34. Apr. 28	4 p.m.	Jefferson	NE	(4)	(1)	0	0	(5)	(5)	Suspected tornado damaged farmstead 8-1/2 miles east of Waurika.
35. Apr. 28	4:15p.m.	Garvin and McClain	NE	(2)	(2)	0	0	0	0	Several funnels aloft sighted in north-central Garvin and southern McClain Counties.
36. Apr. 28	4:15p.m.		NE							
37. Apr. 28	5:10p.m.	Seminole	NE	1	50	0	0	1000	0	Tornado observed at tree-top level. 2 farmsteads damaged near Konawa.
38. Apr. 28	6:05-6:12 p.m.	Seminole and Hughes	NE	(2)	(2)	0	0	0	0	2 funnels aloft sighted between Wewoka and Holdenville.
39. Apr. 28			NE							
40. Apr. 28	10 p.m.	Bryan, Atoka, and Pushmataha	NE	30	300	0	0	7 5000	0	Funnel aloft first sighted northeast of Durant. Numerous trees blown down at Matoy. Funnel moved across Antlers at tree-top level, causing damage to tops of buildings and TV antennas.
41. May 13	7:10p.m.	Payne	E	(2)	(2)	0	0	0	0	Funnel aloft sighted near Stillwater.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
OKLAHOMA (Con't)										
42. May 23	12:25p.m.	Comanche	NE	(2)	(2)	0	0	0	$0	Weather observer at Fort Sill sighted 3 funnels aloft 3 miles north of station.
43. May 23	12:25p.m.	Comanche	NE							
44. May 23	12:25p.m.	Comanche	NE							
45. May 23	2 p.m.	Nowata	NE	(4)	(1)	0	0	(6)	0	Tornado cut a small path through trees near Verdigris River near Watova.
46. May 23	3:15 p.m.	Seminole	NE	(2)	(2)	0	0	0	0	Funnel aloft reported north of Konawa.
47. May 23	3:45 p.m.	Oklahoma	NE	(2)	(2)	0	0	0	0	Funnel dipped out of base of clouds momentarily over Midwest City.
48. May 23	5 p.m.	Grady	NE	(2)	(2)	0	0	0	0	Funnel aloft sighted near Chickasha.
49. May 23	5:28 p.m.	Cleveland	NE	(2)	(2)	0	0	0	0	Funnel aloft sighted near Norman.
50. May 23	P.m.	Marshall	NE	(4)	(1)	0	0	(5)	0	Small tornado dipped down over Lake Texoma, overturning boats.
51. May 25	7:18 p.m.	Jackson	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted by Ground Observer Corps 8 miles east of Eldorado.
52. May 25	11 p.m.	Logan	NE	(2)	(2)	0	0	0	0	Tornado reported by sheriff southwest of Crescent City, touched ground in open country.
53. May 25	P.m.	Jackson	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted by telephone lineman near Blair.
54. May 26	3:20 p.m.	Jackson	NE	(2)	(2)	0	0	0	0	Funnel aloft sighted near Duke by Highway Patrol.
55. May 26	(2)	Lincoln	NE	(2)	(2)	0	0	0	0	Funnel aloft sighted 5 miles north of Davenport.
56. May 30	8:45 p.m.	Woods	(2)	(2)	(2)	0	0	(2)	0	Tornado sighted by Highway Patrol northwest of Alva.
57. May 30	9:31 p.m.	Grant	(2)	(2)	(2)	0	0	0	0	Tornado reported by Highway Patrol on ground 5 miles southeast of Wakita.
58. May 30	9:44 p.m.	Kay	(2)	(2)	(2)	0	0	0	0	Highway Patrol reported tornado northwest of Blackwell.
59. May 30	(2)	Kay	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted near Braman by Highway Patrol.
60. May 30	(2)	Grant	(2)	(2)	(2)	0	0	0	0	Funnel aloft near Medford, reported by Highway Patrol.
61. May 31	12:10a.m.	Woodward	E	(2)	(2)	0	0	0	0	Funnel aloft sighted near Quinlan.
62. May 31	12:30 -	Payne	SE	(2)	(2)	0	0	0	0	Funnel aloft reported near Stillwater, however, Meteorologists observing storm did not sight any. Observers at Cushing sighted 1 funnel and other sources reported sighting 4 others.
63. May 31	3:30a.m.	Payne	SE							
64. May 31	Ditto	Payne	SE							
65. May 31	Ditto	Payne	SE							
66. May 31	Ditto	Payne	SE							
67. May 31	Ditto	Payne	SE							
68. May 31	12:35 a.m.	Kay	ENE	(2)	(2)	0	0	0	0	Funnel sighted by several persons over southeast edge of Ponca City. Evidently did not touch ground.
69. May 31	1 a.m.	Noble	SE	(2)	(2)	0	0	0	0	Funnel aloft sighted 7 miles south of Perry.
70. May 31	8 a.m.	Seminole	SW	1-1/2	75	0	0	20,000	0	Suspected tornado northwest of Seminole struck oil company camp and drive-in theater. Numerous houses and theater screen destroyed or damaged.
71. June 3	3:55 a.m.	Caddo and	NE	2	880	0	0	200,500	30,000	Funnel aloft sighted just east of Anadarko. Observers noted twin funnels on ground just west of Mustang, formed single funnel. Damage resulted to 42 homes and many outbuildings.
72. June 3	3:55 a.m.	Canadian	NE							
73. June 5	2:10a.m.	Woods	SE	(2)	(2)	0	0	0	0	Funnel aloft observed 10 miles southwest of Alva.

See reference notes at end of table.

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
OKLAHOMA (Cont'd)										
74. June 5	3 a.m.	Comanche	NE	(2)	(2)	0	0	$0	$0	Funnel aloft sighted in vicinity of Faxon.
75. June 8	3:30 a.m.	Woods	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted west of Alva.
76. June 8	3:45 a.m.	Woods	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted southwest of Alva.
77. June 8	1:30 p.m.	Seminole	E	18	150	0	0	1,500	0	Damage first noted 6 miles northwest of Seminole and funnel first sighted 5 miles northeast of Seminole where observer indicated funnel broke in 2 parts, 1 moving east for 6 more miles, the other traveled southeast for 12 miles. Second funnel spotted 2 miles northeast of Wewoka by Highway Patrol. 2 oil derricks destroyed, small plane smashed, trees broken off, buildings and utility lines damaged.
78. June 8	1:30 p.m.	Seminole	SE							
79. June 8	4 p.m.	Logan	SW	1	150	0	0	0	0	Tornado touched ground 4 miles northwest of Crescent.
80. June 17	7 p.m.	Dewey	NE	(2)	(2)	0	0	(5)	0	Tornado near Leedey unroofed airport hanger and scattered debris.
81. June 23	1:43 a.m.	Canadian	S	(2)	(2)	0	0	0	0	Funnel aloft sighted 12 miles southwest of El Reno.
82. June 23	8 p.m.	Texas	NW	2	50	0	0	1,500	0	Near Goodwell, tornado sighted over plowed field, crossed highway, sucking top off convertible and damaged building on farmstead. Several telephone poles broken off.
83. June 23	P.m.	Ellis	(2)	(2)	(2)	0	0	(6)	0	Suspected tornado damaged trees and outbuildings at Gage.
84. June 25	8:45 p.m.	Texas	SE	(2)	(2)	0	0	0	0	Highway Patrol reported funnel aloft over north edge of Guymon.
85. June 27	3:24 p.m.	Nowata	SW	(2)	(2)	0	0	(5)	0	Tornado struck farmstead 5 miles northwest of Nowata, causing damage to TV antennas, trees, and scattered small articles.
86. June 27	11 p.m.	Payne	SE	(2)	(2)	0	0	0	0	Funnel aloft sighted north of Stillwater by Ground Observer Corps.
87. June 27	8:50 p.m.	Muskogee	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted northwest of Haskell.
88. June 27	9:15 p.m.	Wagoner	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted between Coweta and Wagoner.
89. June 27	10:40 p.m.	Wagoner	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted between Wagoner and Muskogee.
90. June 28	12:24 a.m.	Pottawatomie	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted north of Shawnee by Highway Patrol.
91. July 1	6:30 p.m.	Dewey	NE	(2)	(2)	0	1	(5)	0	Suspected tornado at Leedey damaged roof of home, utility lines, outbuildings, etc. Man injured arm closing storm cellar door.
92. July 1	6:45 p.m.	Alfalfa	SW	2	880	0	0	(5)	0	Suspected tornado caused general damage near Burlington.
93. July 2	3:30 p.m.	Jackson	(2)	1	50	0	0	300	0	Small tornado hit farm 5 miles southwest of Eldorado. Barn destroyed. Windows and door exploded out of home. Bark twisted off fence posts.
94. July 2	3:30 p.m.	Blaine	NE	(4)	(1)	0	0	(5)	0	Tornado dipped momentarily on farm near Hitchcock. House damaged, 5 barns destroyed, and trees twisted off.
95. July 2	6:27 p.m.	Canadian	NE	17	400	0	0	10,000	0	Suspected tornado unroofed barn 15 miles southwest of El Reno. Tornado struck again 1-1/2 miles east of El Reno, causing additional damage.
96. July 2	11 p.m.	Beaver	(2)	(2)	(2)	0	0	0	0	Pilot reported funnel aloft 40 to 50 miles northwest of Gage.

See reference notes at end of table.

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
OKLAHOMA (Cont'd)										
97. July 5	Evening	Lincoln and Okfuskee	(2)	(2)	(2)	0	0	$0	$0	Line of severe thunderstorms moved across the northern half of State. Funnel aloft reported between Chandler and Kendrick, Lincoln County, and another funnel aloft near Boley, Okfuskee County.
98. July 5	Evening	Ditto								
99. July 7	10:03 p.m.	Kiowa	SE	1	880	0	0	6,000	(5)	3 funnels sighted near Mountain View. 1 home and several barns damaged.
100. July 7	10:03 p.m.	Kiowa	SE							
101. July 7	10:03 p.m.	Kiowa	SE							
102. July 8	11:40 p.m.	Choctaw and Pushmataha	(2)	(2)	(2)	0	0	0	0	2 funnels aloft sighted between Hugo and Antlers by Border Patrol.
103. July 8	11:40 p.m.	Ditto								
104. July 11	9:15 p.m.	Comanche	NNW	(2)	(2)	0	0	0	0	Tower operator at Fort Sill sighted tornado 20 to 30 miles southwest. Evidently remained aloft.
105. July 17	10 a.m.	Garfield	ESE	(4)	50	0	0	0	0	Tornado dipped to ground momentarily in open field 4 miles northwest of Billings.
106. July 19	7:20 a.m.	Alfalfa	SE	(2)	(2)	0	0	0	0	Weather Bureau employee sighted 2 funnels aloft over Great Salt Plains Lake.
107. July 19	7:20 a.m.	Alfalfa	SE							
108. July 21	6 p.m.	Tulsa	NE	(2)	(2)	0	0	(6)	0	Funnel reached within 100 feet of ground at Collinsville.
109. July 22	2:36 a.m.	Kay	(2)	(2)	(2)	0	0	0	0	Pilot reported funnel aloft 10 miles west of Ponca City.
110. July 22	3:23 p.m.	Blaine	(2)	(4)	(1)	0	0	0	0	Tornado sighted on ground 2 miles west of Canton.
111. Aug. 7	4 p.m.	Jefferson	NE	1-1/2	880	0	0	1,000	0	Suspected tornado near Waurika.
112. Aug. 31	3 p.m.	Sequoyah	NE	(2)	(2)	0	0	0	0	Tornado dipped down about 7 miles east of Sallisaw.
113. Oct. 30	2:40 p.m.	Noble	(2)	(2)	(2)	0	0	(5)	0	Highway Patrol reported tornado unroofed barn 12 miles east of Perry.
114. Nov. 20	10:35 a.m.	Muskogee	NE	3	150	0	0	2,000	0	Suspected tornado at Braggs damaged outbuildings, windows, and TV antennas.
OREGON (None reported)										
PENNSYLVANIA										
1. May 13	12:35 a.m.	Beaver, Allegheny, and Somerset	SE	80	(2)	0	10	1,000,000	(6)	Discontinuous path from Aliquippa to West Mifflin, Duquesne, and Windber. Duquesne hardest hit.
2. June 13	7:45 p.m.	York	E	(4)	(1)	0	2	50,000	20,000	2 persons injured in moving car when it was struck by roof blown off nearby store at York. 8 buildings unroofed and 5 cars damaged.
3. Aug. 13	4:15 p.m.	Montgomery	SE	7	30	0	0	50,000	(5)	Tornado moved mostly through open country from east of Lansdale to Montgomeryville. Several homes and carports unroofed. 2 trailers demolished.
4. Sept. 17	5-7 p.m.	Lancaster	(2)	3	50	0	1	50,000	(5)	Twister destroyed tobacco shed and damaged dwellings. Boy injured when struck by piece of roofing material torn from nearby home.
RHODE ISLAND (None reported)										
SOUTH CAROLINA										
1. Feb. 20	7:20 a.m.	Berkeley	ESE	1/4	10	0	1	3,500	0	In Pineville area, 1 house destroyed and 3 damaged.
2. Apr. 6	1:30 p.m.	Abbeville	NE	5	50	0	5	100,000	0	In Abbeville area, 1 home destroyed and 89 damaged.
3. May 3	5:30 p.m.	Hampton	NE	10	50	0	0	6,000	0	Tornado moved from east of Estill to Red Hill section and Varnville. Residence and several outbuildings damaged.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
SOUTH CAROLINA (Cont'd)										
4. June 25	2:30 p.m.	Dillon	SE	2	200	0	0	$5,000	$0	At Little Rock, several farm houses damaged.
5. Aug. 13	4:15 p.m.	Anderson	(2)	1/4	250	0	0	1,000	0	In Hopewell community, 3 farm buildings destroyed.
6. Sept. 25	11 a.m.	Beaufort	NNW	1/2	35	0	0	(6)	0	Waterspout moving inland destroyed shed at Hiltonhead.
SOUTH DAKOTA										
1. May 10	3:45 p.m.	Bon Homme	NNE	5	100	0	2	2,000	0	Occurred 5 miles west of Tyndall.
2. May 10	5:45 p.m.	Turner	E	1-1/4	100	0	0	(5)	0	Roofs destroyed at Marion.
3. May 28	11:30 a.m.	Harding	SE	(2)	(2)	0	0	0	0	Funnel cloud aloft sighted at Buffalo.
4. May 28	3 p.m.	Corson	SW	(2)	(2)	0	0	0	0	Funnel cloud aloft sighted at McIntosh.
5. June 15	(2)	Pennington	(2)	(4)	(1)	0	0	(6)	0	2 miles northwest of Deerfield. Small trees uprooted.
6. June 19	11:50 p.m.	Brule	(2)	(2)	(2)	0	0	0	0	2 funnels aloft reported over Kimball.
7. June 19	11:50 p.m.	Brule								
8. June 21	6 p.m.	Spink	(2)	(2)	(2)	0	0	0	0	2 funnels seen near Redfield.
9. June 21	6 p.m.	Spink								
10. June 29	7 p.m.	Lake and Moody	E	20	(2)	0	1	24,000	(5)	1/2 mile northeast of Wentworth to south of Flandreau, farm buildings demolished and 2 house trailers wrecked.
11. July 3	5:40-8:30 p.m.	Haakon and Jackson	SE	(2)	(2)	0	0	0	0	Over open country 18 miles northeast and later 35 miles southeast of Philip.
12. July 16	5-8 p.m.	Buffalo and Charles Mix	(2)	(2)	(2)	0	0	0	0	Funnel clouds aloft near Platte and Gannvalley.
13. July 16	5-8 p.m.	Ditto								
14. July 18	Afternoon	Bon Homme	(2)	(2)	(2)	0	0	0	0	2 funnel clouds aloft reported north of Avon.
15. July 18	Afternoon	Bon Homme								
16. Aug. 3	4:30 p.m.	Hutchinson	(2)	(4)	(1)	0	0	1,000	0	Southeast of Parkston, farm buildings damaged.
17. Aug. 4	4:55 a.m.	Minnehaha	E	(4)	(1)	0	0	0	0	Tornado south of Sioux Falls touched ground and lifted immediately.
18. Aug. 4	4:40 p.m.	Custer	(2)	(2)	(2)	0	0	0	0	Funnel cloud observed near Hermosa.
19. Aug. 6	7:15 p.m.	Bennett	SE	35	(2)	0	0	150,000	(5)	Most of damage at Martin. Roof blown from hospital, several buildings destroyed and others damaged.
20. Aug. 8	2:45 a.m.	Minnehaha	E	(4)	(1)	0	0	5,000	0	Building destroyed at Sioux Empire Fairgrounds at Sioux Falls.
21. Aug. 10	7:25 p.m.	Minnehaha	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft sighted north of Sioux Falls.
TENNESSEE										
1. Feb. 17	8 p.m.	Lawrence and Giles	NE	10	(2)	0	2	15,000	0	Trees uprooted, 2-story house leveled, warehouse and several houses unroofed.
2. Feb. 17	10 p.m.	Fentress	NE	(2)	(2)	0	2	25,000	0	Tornado occurred between Jamestown and Allardt. 1 home destroyed, standing timber, barns, garages, and roofs of dwellings damaged, and 1 mule killed.
3. Feb. 27	3:30 p.m.	Sumner	NE	15	100	0	4	20,500	0	Most damage in sector between Portland, Gallatin, and White Horse. Eye witnesses reported twister looked like "huge rubber tire spinning along with a pink furry cloud above."
4. Feb. 27	5:30 p.m.	Fentress	(2)	(2)	(2)	0	0	(5)	0	Small tornado damaged some buildings and roofs in Roanoke community.
5. Mar. 7	8:30 a.m.	Overton	NE	4	(2)	0	0	15,000	0	4 miles west of Livingston, suspected tornado blew down barns, damaged farm houses, and uprooted trees.

See reference notes at end of table.

TORNADO DATA

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage: Property (exclusive of crops)	Estimated damage: Crops	Remarks
TENNESSEE (Cont'd)										
6. Apr. 3	4:45 p.m.	Henderson	NE	12	100	3	60	$1,250,000	$0	In Lexington area, 50 homes and 2 business houses destroyed; major damage to 75 homes; minor damage to 175 homes and 20 business houses.
7. Apr. 3	7:45 p.m.	Sumner	(2)	(2)	(2)	0	0	(5)	0	In Possumtown community, a number of homes and 12 barns destroyed.
8. July 13	2 p.m.	Putnam	E	(2)	(2)	0	0	3,000	0	At Monterey, suspected tornado blew down several trees, a few small buildings, and road signs.
9. July 21	5:15 p.m.	Shelby	(2)	(2)	(2)	0	0	0	0	Small funnel observed near Millington subsequent to severe thunderstorm 20 miles to north at Randolph Landing.
TEXAS										
1. Feb. 8	11 a.m.	Brazoria	SE	1/4	(2)	0	0	500	0	Funnel dipped down at Angleton. Shingles and tarpaper blown from roofs, phone lines torn down.
2. Feb. 14	12:30 p.m.	Jefferson and Orange	NE	(2)	(2)	0	0	25,000	(2)	Tornado destroyed barn and garage, knocked 4 utility circuits out at Port Neches, moved over city of Orange.
3. Feb. 17	1:35 p.m.	Comanche	NE	(2)	200	0	0	10,000	0	Tornado reported at Gustine.
4. Mar. 21	3 p.m.	Jim Wells	NE	(2)	(2)	0	0	0	0	Funnel touched ground 20 miles south of Alice.
5. Mar. 21	3 p.m.	Live Oak	NE	(2)	(2)	0	0	0	0	Funnel sighted aloft 10 miles north of George West.
6. Mar. 21	3 p.m.	Milam	NE	(2)	(2)	0	0	0	0	Highway Patrol reported funnel touching ground in open country 5 miles north of Cameron.
7. Mar. 21	3 p.m.	Coryell	NE	3/4	30	0	0	5,000	100	Destroyed 4-room house 10 miles southeast of Gatesville, turned car over.
8. Mar. 21	3:25 p.m.	Bell	E	10	50	0	0	0	0	Airlines pilot reported funnel cloud 10 miles northwest of Temple picking up dust as it occasionally touched ground.
9. Mar. 21	3:25 p.m.	Bell	NE	15	50	0	0	1,500	0	Demolished pump house at Willow Grove. Dipped and rose back into clouds.
10. Apr. 5	3:15 p.m.	Brazos	E	4-5	(2)	0	0	250,000	0	Destroyed buildings at south Bryan.
11. Apr. 5	3:15 p.m.	Williamson, Hardin, and Bell	E	(2)	(2)	0	0	0	0	3 funnels aloft sighted west of Fort Hood, north of Taylor, and at Saratoga.
12. Apr. 5	3:15 p.m.	Ditto	E							
13. Apr. 5	3:15 p.m.	Ditto	E							
14. Apr. 14	3 p.m.	Tarrant	NE	(2)	(2)	0	0	0	0	Funnels aloft sighted at Keller.
15. Apr. 14	3 p.m.	Tarrant	NE							
16. Apr. 14	8 p.m.	Ellis	NE	1	200	0	0	(5)	0	Suspected tornado 2 miles north of Midlothian lifted roofs off residences and barns, demolished some small buildings.
17. Apr. 30	4:45 p.m.	Pecos	(2)	(2)	(2)	0	0	300	0	Hit in open country near Hovey; tore up 3 phone poles, disrupting power and phone services.
18. May 1	P.m.	McLennan	(2)	(2)	(2)	0	0	400	0	5 miles north of Waco, demolished barn and knocked over small building.
19. May 1	Night	Coryell	(2)	(2)	(2)	0	0	(6)	0	Outbuilding destroyed southwest of Gatesville.
20. May 1	Night	Hamilton	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted at Hamilton.
21. May 1	Night	Lampasas	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted at Lampasas.
22. May 1	Night	Bell	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted at Belton.
23. May 1	Night	Bosque	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted at Valley Mills.
24. May 1	Night	McLennan	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted at McGregor.
25. May 1	Night	Lampasas	(2)	(2)	(2)	0	0	1,100	0	Barn and house destroyed at Rumley.
26. May 1	P.m.	McLennan	(2)	(2)	(2)	0	0	0	0	Funnel sighted aloft.
27. May 7	6:35 p.m.	Andrews	NE	1/4	50	0	1	20,000	0	Damaged 3 houses in Andrews.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
TEXAS (Cont'd)										
28. May 7	10 p.m.	Stonewall	NE	(2)	(2)	0	0	$1,500	$0	House unroofed, TV antennas twisted and broken, trees uprooted in southwestern part of Aspermont.
29. May 8	1:45 a.m.	Cottle	NW	(2)	(2)	0	0	1,000	0	At Paducah, brick wall demolished.
30. May 14	8:30 p.m.	Tom Green	(2)	1	25	0	0	2,500	(5)	Suspected tornado near Miles destroyed 28 turkey shelters, 8-foot water-tank platform, and scattered tin roofing a mile.
31. May 23	1:40 p.m.	Lubbock	SE	3	75	0	0	0	0	2 funnels aloft sighted at New Deal.
32. May 23	1:40 p.m.	Lubbock	SE							
33. May 23	8 p.m.	Wilbarger	SE	(2)	(2)	0	0	25,000	(5)	12 miles south of Vernon, tornado overturned 7-car garage, a smaller garage, and a water tank.
34. May 25	3:19 p.m.	Dallam	NE	(2)	(2)	0	0	0	0	Airline pilot reported 2 funnels 40 miles east-southeast of Dalhart, could not determine whether they touched ground.
35. May 25	3:19 p.m.	Dallam	NE							
36. May 25	4 p.m.	Hockley	NE	1-1/2	400	0	0	4,000	6,000	Occurred 3 miles south of Levelland.
37. May 27	4:30 p.m.	Knox and Haskell	SSE	(2)	(2)	0	0	0	0	Funnels reported to have touched ground at Jud and Knox City.
38. May 27	4:30 p.m.	Knox and Haskell	SSE							
39. May 27	5 p.m.	Haskell	SSE	(2)	(2)	0	0	0	0	Reported touching ground at Rochester.
40. May 27	5:30 p.m.	Kent	SSE	(2)	(2)	0	0	0	0	Reported touching ground at Jayton.
41. May 27	4:30 p.m.	Taylor and Haskell	SSE	(2)	(2)	0	0	12,500	0	22 funnels reported to Abilene Weather Bureau. 7 miles northwest of Stamford barn deroofed, debris thrown about 300 yards in southeastern direction; combine pushed about 20 feet. 4 miles south of Rule, windmill destroyed and tool shed damaged.
42. May 27	4:30 p.m.	Ditto	SSE							
43. May 27	4:30 p.m.	Ditto	SSE							
44. May 27	4:30 p.m.	Ditto	SSE							
45. May 27	4:30 p.m.	Ditto	SSE							
46. May 27	4:30 p.m.	Ditto	SSE							
47. May 27	4:30 p.m.	Ditto	SSE							
48. May 27	4:30 p.m.	Ditto	SSE							
49. May 27	4:30 p.m.	Ditto	SSE							
50. May 27	4:30 p.m.	Ditto	SSE							
51. May 27	4:30 p.m.	Ditto	SSE							
52. May 27	4:30 p.m.	Ditto	SSE							
53. May 27	4:30 p.m.	Ditto	SSE							
54. May 27	4:30 p.m.	Ditto	SSE							
55. May 27	4:30 p.m.	Ditto	SSE							
56. May 27	4:30 p.m.	Ditto	SSE							
57. May 27	4:30 p.m.	Ditto	SSE							
58. May 27	4:30 p.m.	Ditto	SSE							
59. May 27	4:30 p.m.	Ditto	SSE							
60. May 27	4:30 p.m.	Ditto	SSE							
61. May 27	4:30 p.m.	Ditto	SSE							
62. May 27	4:30 p.m.	Ditto	SSE							
63. May 29	8 p.m.	Lamb	SE	(2)	(2)	0	0	0	0	2 funnels reported aloft near Olton.
64. May 29	8 p.m.	Lamb	SE							
65. May 29	8-11 p.m.	Swisher	SE	(2)	(2)	0	0	0	0	3 miles east of Kress, tornado touched ground.
66. May 29	8-11 p.m.	Cochran	NE	(2)	(2)	0	0	0	0	Near Whiteface, tornado touched ground.
67. June 7	4:30 p.m.	Hale	(2)	(2)	(2)	0	0	0	0	Funnel aloft reported northwest of Plainview.
68. June 7	4:30 p.m.	Floyd	(2)	(2)	(2)	0	0	0	0	Funnel aloft reported 15 miles northwest of Lockney.
69. June 17	3 p.m.	Hockley	NE	(2)	(2)	0	0	1,000	0	Suspected funnel destroyed tenant house near Anton. Funnel obscured by heavy rain.
70. June 17	3:30 p.m.	Trinity	(2)	(2)	(2)	0	0	1,000	0	2 miles south of Carlisle, unconfirmed tornado dipped down on farm, smashed tractor shed; lifted into clouds, then dipped down again about 1/4 mile east, demolishing overhead water tank.
71. June 18	8 a.m.	Jim Wells	(2)	(2)	(2)	0	0	0	0	Tornado west of Alice dissipated without damage.
72. June 19	1:30 p.m.	San Patricio	(2)	1/2	300	0	2	1,500	0	6 miles east of Sinton, suspected tornado destroyed 13x18-foot sheet-iron building injuring 2 persons.

See reference notes at end of table.

TORNADO DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons: Killed	Number of persons: Injured	Estimated damage: Property (exclusive of crops)	Estimated damage: Crops	Remarks
TEXAS (Cont'd)										
73. June 22	6:45 p.m.	Howard	SE	(2)	(2)	0	1	(5)	$0	2 miles west of Big Spring tornado overturned car and trailer, injuring 1 person.
74. July 4	3:50 p.m.	Jones	(2)	(2)	(2)	0	0	$0	0	Tornado reported touching ground 7 miles north of Anson.
75. July 4	5 p.m.	Randall	NE	20	880	0	0	1,000	600	Funnel cloud touched ground for short time near Canyon.
76. July 4	(2)	Dawson	(2)	(2)	(2)	0	0	0	0	4 small tornadoes aloft reported near Lamesa.
77. July 4	(2)	Dawson								
78. July 4	(2)	Dawson								
79. July 4	(2)	Dawson								
80. July 8	5 p.m.	Cooke	E	(2)	(2)	0	0	0	0	3 funnel clouds sighted at Valley View.
81. July 8	5 p.m.	Cooke	E							
82 July 8	5 p.m.	Cooke	E							
83. July 8	5 p.m.	Grayson	E	(2)	(2)	0	0	0	0	2 funnel clouds reported at Gunter.
84. July 8	5 p.m.	Grayson	E							
85. July 8	5 p.m.	Cooke	E	(2)	(2)	0	0	0	0	Funnel cloud sighted south of Gainesville.
86. July 8	5 p.m.	Wise	E	(2)	(2)	0	0	0	0	Funnel sighted at Slidell.
87. July 20	Afternoon	San Saba	(2)	(2)	(2)	0	0	2,000	0	Small tornado near San Saba unroofed ranch house, a new stone house, and damaged several barns.
88. July 24	2:30 p.m.	Tarrant	(2)	(2)	(2)	0	0	3,000	(5)	Near Rendon, 2 small tornadoes reported. 1 destroyed a barn, driving 2x4-inch lumber a foot into ground 150 to 300 feet away. Pulled pipe out of well. The other carried away barn roof, 2x6-inch lumber carried 400 feet. Tree limbs twisted off.
89. July 24	2:30 p.m.	Tarrant								
90. July 24	6:30 p.m.	Panola	(2)	(2)	(2)	0	1	10,000	0	At Carthage, tornado damaged homes, destroyed garage, and uprooted trees.
91. July 26	9:50 a.m.	Chambers	(2)	(2)	(2)	0	0	0	0	Highway Patrol reported funnel aloft between Winnie and Galveston Bay.
92. Aug. 8	4 p.m.	Clay	(2)	2	50	0	0	2,500	0	Tornado hit western section of Byers, caused roof damage, tore TV antennas from roofs, lifted house from foundation.
93. Aug. 14	6:40 p.m.	Ellis	NE	4	25	0	0	2,000	0	At Britton, roof of cotton gin blown off, several outbuildings destroyed, a building 20x30 feet moved about 8 feet from its foundation.
94. Aug. 29	6:30 p.m.	Wise	NE	9	(2)	0	0	5,000	0	Funnel reported 1 mile north of Boyd. Chickenhouses, barns, and other outbuildings destroyed.
95. Aug. 29	Evening	Dallas	(2)	7	(2)	0	0	0	0	Garland police reported 3 funnel-shaped clouds which later merged. Funnel sighted near Richardson soon dissipated.
96. Aug. 29	Evening	Dallas								
97. Aug. 29	Evening	Dallas								
98. Aug. 29	Evening	Dallas								
99. Aug. 31	2 p.m.	Johnson	SE	1/2	100	0	0	2,500	0	Near Concord, trees uprooted, poles and buildings blown down.
100. Sept. 4	4 p.m.	Williamson and Lee	SE	50	150	0	0	10,600	0	Tornado hit Georgetown, ripping roofs from buildings, lifted, touched down again at Lexington about 50 miles away for 10 to 20 seconds, lifting small frame church off its foundations.
101. Sept. 7	5 p.m.	Zapata	W	3 100	200	0	0	1,000	0	2 tourist courts unroofed and utility poles knocked down at Zapata.
102. Oct. 3	8:28 p.m.	Dallas	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft sighted northeast of Dallas.
103. Oct. 4	1:30 p.m.	Nueces	S	(2)	(2)	0	0	3,000	0	3 miles northeast of Bishop, several small homes and outbuildings damaged, and poultry barn razed.
104. Oct. 4	1:30 p.m.	Nueces	S	(2)	(2)	0	0	0	0	State Police sighted funnel cloud between Corpus Christi and Robstown.

See reference notes at end of table.

TORNADO DATA

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
TEXAS (Cont'd)										
105. Oct. 4	3:25 p.m.	Jefferson	S	(2)	(2)	0	2	$11,000	$0	Tornado struck southwestern part of Port Arthur.
106. Oct. 15	Evening	San Patricio	(2)	(2)	(2)	0	0	0	0	3 funnel clouds aloft sighted 30 miles northwest of Corpus Christi.
107. Oct. 15	Evening	San Patricio								
108. Oct. 15	Evening	San Patricio								
109. Oct. 15	Evening	San Patricio	(2)	(2)	(2)	0	0	0	0	3 funnel clouds aloft sighted 25 miles southwest of Corpus Christi.
110. Oct. 15	Evening	San Patricio								
111. Oct. 15	Evening	San Patricio								
112. Oct. 16	Morning	San Patricio	(2)	(2)	(2)	0	0	0	0	Funnel cloud aloft sighted 25 miles southwest of Corpus Christi.
113. Oct. 18	7 a.m.	Zavala	SE	(2)	(2)	0	0	5,000	0	At Crystal City, tornado demolished 2 homes, ripped roofs off others, and damaged warehouse.
114. Oct. 20	12:56 p.m.	Travis	SE	(2)	(2)	0	0	(5)	(5)	Tornado dipped down northeast of Austin, damaging trees and oat fields, dissipated after touching ground.
115. Oct. 20	1:35 p.m.	McMullen	SE	(2)	(2)	0	0	0	0	4 tornadoes sighted in Tilden area over open country.
116. Oct. 20	1:35 p.m.	McMullen	SE							
117. Oct. 20	1:35 p.m.	McMullen	SE							
118. Oct. 20	1:35 p.m.	McMullen	SE							
119. Oct. 20	2:20 p.m.	Brazos	(2)	(2)	(2)	0	0	0	0	3 funnels aloft sighted at Bryan and College Station.
120. Oct. 20	2:20 p.m.	Brazos								
121. Oct. 20	2:20 p.m.	Brazos								
122. Oct. 20	4:10 p.m.	Nueces	SE	(2)	(2)	0	0	0	0	2 funnel clouds aloft reported in Corpus Christi area.
123. Oct. 20	4:10 p.m.	Nueces	SE							
124. Oct. 20	4:25 p.m.	Guadalupe	E	(2)	(2)	0	1	3,000	0	At Seguin, tornado demolished home and barn, removed roof from another house, and snapped off trees.
125. Oct. 24	10:13 p.m.	Howard	(2)	(2)	(2)	0	0	0	0	Funnel aloft sighted northwest of Big Spring.
126. Nov. 1	5:45 p.m.	Matagorda	SW	(2)	(2)	0	0	0	0	Waterspout over Gulf, moved over Matagorda Island and dissipated.
127. Nov. 5	11:50 a.m.	Jefferson	N	3/ 400	20	0	0	5,000	(2)	At Port Acres, 2 houses lifted from foundations, 6 garages and carport blown down, roofs torn from barns and outbuildings.
UTAH										
1. May 27	6:30 p.m.	Davis and Weber	E	(2)	(2)	0	0	0	0	Funnel aloft, observed south of Hill Field AFB, which moved up Farmington Canyon and disappeared without doing any damage.
VERMONT (None reported)										
VIRGINIA										
1. July 20	12:28 p.m.	Henrico and Chesterfield	NW	(2)	(2)	0	0	150,000	(5)	Funnel cloud aloft reported at Richmond's Byrd Field Airport over runway 400 yards from WBAS. 3 other tornadoes, 2 in South Richmond and 1 in Seven Pines (2 miles to northeast) reliably reported.
2. July 20	12:28 p.m.	Ditto	NW							
3. July 20	12:28 p.m.	Ditto	NW							
4. July 20	12:28 p.m.	Ditto	NW							
WASHINGTON										
1. May 9	1 p.m.	Benton	SE	10	100	0	0	0	0	Small tornado observed approximately 10 miles southwest of Kennewick in Horse Heaven Hills. Funnel traveled for some distance through sparsely settled section.
WEST VIRGINIA										
1. Mar. 7	5:45 a.m.	Lewis	E	1	200	0	1	250,000	0	At Camden, 2 houses destroyed, other buildings damaged, and numerous trees and telephone poles blown down.
WISCONSIN										
1. Apr. 3	11 a.m.	Iowa	NE	4	200	0	0	100,000	0	Struck in rural area 5 miles northeast of Highland.

See reference notes at end of table.

TORNADO DATA

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
WISCONSIN (Cont'd)										
2. Apr. 3	12:50 p.m.	Portage	NE	18	100	2	7	$180,000	$0	From Bancroft to near Amherst, buildings, cars, and trees damaged.
3. Apr. 3	2:05 p.m.	Green Lake and Winnebago	NE	12	400	7	50	1,000,000	0	Berlin and northeastward, 20 homes demolished, many more damaged. Knitting mill and Carnation plant wrecked.
4. July 1	Noon	Calumet	NE	(2)	(2)	0	0	0	0	Waterspouts over Lake Winnebago.
5. July 1	Noon	Calumet	NE							
6. July 1	Noon	Door	NE	(2)	(2)	0	0	100,000	10,000	At Brussels, 15 barns demolished and numerous other buildings damaged.
7. July 1	Noon	Brown	NE	(2)	(2)	0	0	0	0	Funnel reported at Bellevue.
8. July 1	Noon	Brown	NE	(2)	(2)	0	0	0	0	Funnel reported at De Pere.
9. July 15	6:47 a.m.	Waushara	(2)	(2)	(2)	0	0	0	0	Funnel aloft at Plainfield reported.
10. July 16	12:30 p.m.	Waukesha	E	3	30	0	0	0	1,000	Occurred in Big Bend and Muskego areas.
11. July 21	4 p.m.	Dodge	E	(2)	(2)	0	0	0	0	Tornado briefly touched ground west of Beaver Dam. 3 other funnels observed.
12. July 21	4 p.m.	Dodge	E							
13. July 21	4 p.m.	Dodge	E							
14. July 21	4 p.m.	Dodge	E							
WYOMING										
1. June 21	11 a.m.	Campbell	NE	(2)	(2)	0	0	5,000	0	Observer about 4 miles from storm reported seeing 2 funnels, but they were high in the air. Based on this report and damage to buildings, it is quite likely that this storm could have been a tornado 20 miles southwest of Gillette.
*2. July 4	2 p.m.	Laramie	NE	1	(2)	0	0	0	0	Storm formed 8 miles northeast of Albin about mile inside Wyoming and moved over into Nebraska.
3. July 15	6:30 p.m.-midnight	Weston	SE	(2)	(2)	0	0	0	0	15 to 25 miles south of Sundance. Funnel cloud may have been associated with this storm although type and pattern of damage did not so indicate.
ALASKA (None reported)										
HAWAII (None reported)										
WEST INDIES (None reported)										

* Denotes State boundary-crossing tornado.
T Includes crop damage.
C Damage to crops.
1 Narrow.
2 Datum not obtained.
3 Yards instead of miles.
4 Short.
5 Loss occurred; amount not reported.
6 Amount of damage reported as small; no monetary estimate.
7 Additional loss occurred.

DUST DEVIL DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
1. Ind. Apr. 13	1 p.m.	Clay	E	[3] 8	2	0	0	$0	$0	Day cloudless and wind nearly calm when dust devil moved through several yards at Brazil, making sound like a bad windstorm.
2. Wyo. Apr. 13	1 p.m.	Albany	NE	1/8	10	0	0	300	0	Small dust devil at Laramie caused large plate-glass window to burst outward, carried floorlamp out of building, tore swinging door off hinges, splintered glass, and broke aluminum frame.
3. R. I. Apr. 20	11 a.m.	Kent	NE	6	3-4	0	0	0	0	Small dust devil at Warwick lifted 2 garbage cans 25 feet in air and hurled them 75 feet.
4. Mass. Apr. 20	11:40 a.m.	Bristol	ENE	6	3-4	0	0	0	0	Dust devil reported at Seekonk.
5. Mass. May 2	P.m.	Norfolk	W	1/10	(2)	0	0	100	0	At Milton, dust devil, borne on sea-breeze front, lifted planks and debris into air and threw 12-foot plank through car windshield; it was short-lived and attended by roaring noise.
6. Mass. May 17	11:20 a.m.	Middlesex	E	1/4	12	0	0	0	0	At Lowell, sight and roar of dust devil caused workmen to throw themselves prone to escape injury.
7. Mass. May 25	Afternoon	Essex and Worcester	(2)	(2)	(2)	0	2	500	0	1 dust devil at Ipswich and 1 at Dudley each injured a child. Child at Ipswich hurled through air 40 feet with her bicycle. Child at Dudley thrown from tricycle for distance of 10 feet. Property damage slight at Ipswich and Dudley.
8. Mass. May 25	Afternoon	Ditto								
9. S.C. May 30	4:35-4:48 p.m.	Lexington	(2)	1/2	10	0	0	0	0	3 unusually large dust devils observed 6 miles south of Columbia Airport. Weather was fair as funnels extended into base of towering cumulus at times. Cumulus base estimated at 3,500 feet above m.s.l.
10. S.C. May 30	Ditto	Lexington								
11. S.C. May 30	Ditto	Lexington								
12. Ariz. June 2	Late afternoon	Pima	SW	(2)	(2)	0	0	4,000	0	Dust devil observed at Tucson.
13. Ariz. June 4	Afternoon	Cochise	NE	(2)	(2)	0	0	(5)	0	Dust devil at Benson caused roof damage, then skipped to north Benson where it demolished small house and carport.
14. Mass. June 18	1:40 p.m.	Middlesex	S	(2)	5	0	0	(6)	0	At Woburn, dust devil lifted objects from yard 30 feet into air.
15. Ariz. June 26	Late afternoon	Gila	SE	(2)	(2)	0	0	4,000	0	Dust devil at Globe where rear wall of church collapsed.
16. Ariz. July 4	Afternoon	Pima	(2)	(2)	(2)	0	0	1,000	0	Dust devil damaged plate-glass windows at Tucson.
17. Mass. July 19	1-1:02 p.m.	Hampden	E	[3] 500	(2)	0	0	100	0	Dust devil at Springfield. Several panes of skylight blown out. Debris observed 1,000 feet in air.
18. Mass. July 19	Afternoon	Worcester	E	(2)	(2)	0	0	(6)	0	Dust devil at Lunenburg. Funnel whirling air "swooped down" on windrows of hay for about 3 or 4 minutes. Hay sucked up and dropped when dust devil reached clump of trees at end of field.
19. Wyo. July 25	Evening	Laramie	E	1/2-2	5-25	0	0	1,500	0	Several dust devils observed at Cheyenne.
20. Wyo. July 25	Evening	Laramie	E							
21. Okla. Aug. 7	3:15 p.m.	Oklahoma	(2)	(2)	(2)	0	0	1,000	0	At Edmond, dust devil ripped roof off building and broke plate-glass window.
22. Wyo. Aug. 9	11:30 a.m.	Albany	(2)	(2)	(2)	0	0	(6)	0	At Laramie, dust devil broke glass in store door.
23. Okla. Aug. 12	12:30 p.m.	Pottawatomie	N	1/4	25	0	0	(5)	0	At Shawnee, dust devil lifted roof from metal barn 75 feet in air and scattered debris over 10-acre area.
24. Mass. Aug. 17	3 p.m.	Worcester	NE	(2)	(2)	0	0	100	0	At Winchendon, dust devil caused minor damage to home. Column about 200 feet high filled with hay and sand.
25. Okla. Aug. 17	Afternoon	Oklahoma	(2)	(2)	(2)	0	0	(6)	0	At Edmond, strong dust devil blew gravel against large plate-glass window, causing it to shatter.

See reference notes at end of table.

DUST DEVIL DATA

YEAR 1956

State and date	Hour	County	Direction of advance	Length of path, miles	Width of path, yards	Number of persons		Estimated damage		Remarks
						Killed	Injured	Property (exclusive of crops)	Crops	
26. N. J. Aug. 23	2:30 p.m.	Mercer	NW	[3]25-30	(1)	0	0	$100	$0	In Ewing Township, sudden, local wind twisted fully-loaded umbrella-type clothesline and deposited it on roof of nearby home. No rain, lightning, or unusual cloud formation noted.
27. Okla. Aug. 24	Afternoon	Pittsburg	(2)	(2)	(2)	0	0	(6)	0	At McAlester, dust devil damaged 2 TV antennas and broke windows.
28. Okla. Aug. 28	2:15 p.m.	Pottawatomie	N	[3]50	7	0	0	(6)	0	Dust devil at Tecumseh. Portion of roof of outbuilding blown off and slammed into house. Utility lines broken.
29. Mass. Sept. 3	Midday	Bristol	(2)	(2)	(2)	0	0	100	0	Dust devil at Somerset. Damage to lawn furniture, etc., picked up by funnel.

1 Narrow.
2 Datum not obtained.
3 Yards instead of miles.
5 Loss occurred; amount not reported.
6 Amount of damage reported as small; no monetary estimate.

TORNADO SUMMARY

YEAR 1956

State	January	February	March	April	May	June	July	August	September	October	November	December	Total
ALABAMA													
Number			1	1	1		1					1	5
Days			1	1	1		1					2	6
Deaths			0	25	0		0					0	25
Injuries			0	200	2		0					1	203
Damage ($)			20,000	1,500,000	15,000		2,500					70,000	1,607,500
ARIZONA													
Number							5			1			6
Days							2			1			3
Deaths							0			0			0
Injuries							0			0			0
Damage ($)							300			0			300
ARKANSAS													
Number	1	8		3	1								13
Days	1	3		2	1								7
Deaths	0	1		0	0								1
Injuries	12	7		0	0								19
Damage ($)	27,000	1/ 120,000		106,500	800								1/ 254,300
CALIFORNIA													
Number				1	1								2
Days				1	1								2
Deaths				0	0								0
Injuries				1	1								2
Damage ($)				10,000	25,000								35,000
COLORADO													
Number						5	5			1			11
Days						3	3			1			7
Deaths						0	0			0			0
Injuries						0	0			0			0
Damage ($)						(2)	(2)			(2)			(2)
CONNECTICUT													
Number								1					1
Days								1					1
Deaths								0					0
Injuries								0					0
Damage ($)								100					100
DELAWARE													
Number						1							1
Days						1							1
Deaths						0							0
Injuries						0							0
Damage ($)						0							0
DISTRICT OF COLUMBIA													
(None)													
FLORIDA													
Number		1	1	1	6	1	6	4	3	2	2		27
Days		1	1	1	4	1	3	4	1	2	2		20
Deaths		0	0	0	0	0	0	0	0	0	0		0
Injuries		0	0	20	6	0	0	0	0	0	0		26
Damage ($)		(2)	0	1/ 1,000,000	1/ 153,000	0	0	(2)	155,000	2,000	(3)		1/ 1,310,000
GEORGIA													
Number	1	3	2	2	3	1		3	2			1	18
Days	1	3	2	2	2	1		2	2			1	16
Deaths	0	0	0	0	0	0		0	0			0	0
Injuries	0	0	0	0	2	0		0	0			1	3
Damage ($)	(3)	1/ 900,000	(2)	1/ 150,000	1/ 100,000	1/ 25,000		1/ 10,000	1/ 5,000			(2)	1/ 1,190,000
IDAHO													
Number					1	2	1	1					5
Days					1	2	1	1					5
Deaths					0	0	0	0					0
Injuries					0	0	0	0					0
Damages ($)					(2)	(2)	(3)	1,000					1/ 1,000
ILLINOIS													
Number		2	2	12	2	2	2	9	1				32
Days		1	1	6	2	2	2	6	1				21
Deaths		6	0	2	0	0	0	0	0				8
Injuries		22	6	0	0	0	0	3	0				31
Damages ($)		2,300,000	165,000	427,000	25,000	44,000	0	319,000	10,000				3,290,000
INDIANA													
Number		9	8	7	2	2	7	2	1				38
Days		1	2	1	1	2	6	1	1				15
Deaths		0	1	0	0	0	0	0	0				1
Injuries		5	37	12	0	0	0	1	0				55
Damages ($)		1,270,500	2,163,000	859,000	3,000	3,000	37,000	232,000	0				4,567,500
IOWA													
Number				1	3		1	3					8
Days				1	1		1	3					6
Deaths				0	0		0	0					0
Injuries				0	0		1	8					9
Damages ($)				12,000	6,000		10,000	495,000					523,000
KANSAS													
Number				18	33	15	22	11		10		2	111
Days				6	7	9	11	3		1		1	38
Deaths				2	0	0	1	0		0		0	3
Injuries				42	0	0	0	0		5		1	48
Damages ($)				1/ 1,225,000	(2)	1/ 2,500	1/ 158,800	(2)		1/ 554,300		1/ 300	1/ 1,940,900
KENTUCKY													
Number				3			6						9
Days				2			3						5
Deaths				1			0						1
Injuries				4			12						16
Damage ($)				33,500			1/ 935,000						1/ 968,500
LOUISIANA													
Number		1		1			7	1		4		2	16
Days		1		1			4	1		2		1	10
Deaths		0		0			0	0		0		0	0
Injuries		0		2			0	0		2		0	4
Damage ($)		50,000		1/ 200,000			1/ 35,000	(4)		1/ 10,000		0	1/ 295,000
MAINE													
Number					1	1	1		1				4
Days					1	1	1		1				4
Deaths					0	0	0		0				0
Injuries					0	0	0		0				0
Damage ($)					800	10,000	0		15,000				25,800

See reference notes at end of table.

TORNADO SUMMARY

YEAR 1956

State	January	February	March	April	May	June	July	August	September	October	November	December	Total
MARYLAND													
Number							5						5
Days							2						2
Deaths							0						0
Injuries							0						0
Damages ($)							(2)						(2)
MASSACHUSETTS													
Number						6			3		3	1	13
Days						2			2		2	1	7
Deaths						0			0		0	0	0
Injuries						12			0		0	0	12
Damages ($)						300,800			300		785,000	300	1,086,400
MICHIGAN													
Number			1	5	20	5	2	5	1		1		40
Days			1	2	4	1	1	4	1		1		15
Deaths			0	20	4	0	0	0	0		0		24
Injuries			0	376	149	2	0	0	0		0		527
Damages ($)			50,000	12,111,000	5,706,000	135,200	7,000	5,000	500		1,500		18,016,200
MINNESOTA													
Number					1	5	8	5		1			20
Days					1	5	4	3		1			14
Deaths					0	0	0	0		0			0
Injuries					0	1/ 0	1/ 0	0		0			1/ 0
Damage ($)					100,000	75,000	10,000	(2)		(2)			185,000
MISSISSIPPI													
Number		3		2			2						7
Days		2		1			2						5
Deaths		1		0			0						1
Injuries		55		1/ 8			1/ 0						1/ 63
Damage ($)		1,145,000		570,000			5,000						1,720,000
MISSOURI													
Number		8	1	4	3	2	4	2				4	28
Days		2	1	3	2	1	3	2				1	15
Deaths		0	0	0	0	0	0	0				0	0
Injuries		1/ 16	0	1/ 3	0	0	0	0				4	1/ 23
Damage ($)		195,500	30,000	111,000	(2)	0	(2)	15,000				195,000	546,500
MONTANA													
(None reported)													
NEBRASKA													
Number				2	6	10	19	2	1	4	1		45
Days				2	4	6	8	2	1	1	1		25
Deaths				0	0	0	0	0	0	0	0		0
Injuries				1/ 0	4	1/ 3	1/ 0	0	0	1/ 2	0		1/ 9
Damage ($)				77,000	171,500	270,300	5,500	2,600	(2)	475,000	0		1,001,900
NEVADA													
(None reported)													
NEW HAMPSHIRE													
Number						1	1						2
Days						1	1						2
Deaths						0	0						0
Injuries						0	0						0
Damage ($)						400	8,000						8,400
NEW JERSEY													
Number					1		2		1				4
Days					1		1		1				3
Deaths					0		0		0				0
Injuries					0		1/ 8		0				1/ 8
Damage ($)					10,000		30,000		(2)				40,000
NEW MEXICO													
Number					2		2	2					6
Days					2		2	2					6
Deaths					0		0	0					0
Injuries					0		0	0					0
Damage ($)					0		0	1,200					1,200
NEW YORK													
Number							1						1
Days							1						1
Deaths							0						0
Injuries							0						0
Damage ($)							(2)						(2)
NORTH CAROLINA													
Number			7	2				1					10
Days			2	1				1					4
Deaths			0	0				0					0
Injuries			2	0				0					2
Damage ($)			35,000	60,000				0					95,000
NORTH DAKOTA													
Number					1	3	14	5	4				27
Days					1	2	4	2	2				11
Deaths					0	0	0	0	0				0
Injuries					0	1	0	8	0				1/ 9
Damage ($)					5,000	151,000	(2)	270,000	18,000				444,000
OHIO													
Number		3	1	1		1	2	1					9
Days		1	1	1		1	2	1					7
Deaths		0	0	0		0	0	2					2
Injuries		Few	0	0		1/ 0	0	0					1/ Few
Damage ($)		825,000	50,000	0		5,000	99,000	150,000					1,129,000
OKLAHOMA													
Number		2	1	37	30	20	20	2		1	1		114
Days		2	1	7	6	8	10	2		1	1		38
Deaths		0	0	5	0	0	0	0		0	0		5
Injuries		1/ 0	0	1/ 160	1/ 0	1/ 0	1/ 1	0		0	0		1/ 161
Damage ($)		50,000	100,000	2,801,300	20,000	233,500	16,300	1,000		(2)	2,000		3,224,100
OREGON													
(None reported)													
PENNSYLVANIA													
Number					1	1		1	1				4
Days					1	1		1	1				4
Deaths					0	0		0	0				0
Injuries					1/ 10	2		1/ 0	1/ 1				1/ 13
Damage ($)					1,000,000	70,000		50,000	50,000				1,170,000

See reference notes at end of table.

TORNADO SUMMARY

YEAR 1956

State	January	February	March	April	May	June	July	August	September	October	November	December	Total
RHODE ISLAND													
(None reported)													
SOUTH CAROLINA													
Number		1		1	1	1		1	1				[illegible]
Days		1		1	1	1		1	1				6
Deaths		0		0	0	0		0	0				0
Injuries		1		5	0	0		0	0				6
Damage ($)		3,500		100,000	6,000	5,000		1,000	(3)				[1] 115,500
SOUTH DAKOTA													
Number					4	6	5	6					21
Days					2	4	3	5					14
Deaths					0	0	0	0					0
Injuries					2	1	0	0					3
Damage ($)					[1] 2,000	[1] 24,000	0	[1] 156,000					[1] 182,000
TENNESSEE													
Number		4	1	2			2						9
Days		2	1	1			2						6
Deaths		0	0	3			0						3
Injuries		8	0	60			0						68
Damage ($)		[1] 60,500	15,000	[1] 1,250,000			3,000						[1] 1,328,500
TEXAS													
Number		3	6	8	49	7	18	8	2	24	2		127
Days		3	1	3	8	5	5	4	2	7	2		40
Deaths		0	0	0	0	0	0	0	0	0	0		0
Injuries		0	0	0	1	3	1	0	0	3	0		8
Damage ($)		[1] 35,500	6,600	[1] 250,300	[1] 74,000	[1] 3,500	[1] 16,600	12,000	11,600	[1] 22,000	5,000		[1] 437,100
UTAH													
Number					1								1
Days					1								1
Deaths					0								0
Injuries					0								0
Damage ($)					0								0
VERMONT													
(None reported)													
VIRGINIA													
Number							4						4
Days							1						1
Deaths							0						0
Injuries							0						0
Damage ($)							[1] 150,000						[1] 150,000
WASHINGTON													
Number					1								1
Days					1								1
Deaths					0								0
Injuries					0								0
Damage ($)					0								0
WEST VIRGINIA													
Number			1										1
Days			1										1
Deaths			0										0
Injuries			1										1
Damage ($)			250,000										250,000
WISCONSIN													
Number				3			11						14
Days				1			4						5
Deaths				9			0						9
Injuries				57			0						57
Damage ($)				1,280,000			111,000						1,391,000
WYOMING													
Number						1	2						3
Days						1	2						3
Deaths						0	0						0
Injuries						0	0						0
Damage ($)						5,000	0						5,000
ALASKA													
(None reported)													
HAWAII													
(None reported)													
WEST INDIES													
(None reported)													
TOTALS													
Number	2	48 *47	33	117 *114	175	99 *98	188 *187	76	22	48	10	11	829 *823
Days	**2	**12	**7	**15	**26	**24	**29	**25	**12	**11	**7	**4	**174
Deaths	0	8	1	67	4	0	1	2	0	0	0	0	83
Injuries	12	[1] 114	46	950	177	24	23	20	1	12	0	7	[1] 1,386
Damage ($)	[1] 27,000	[1] 6,955,500	[1] 2,884,600	[1] 24,133,600	[1] 7,423,100	[1] 1,363,200	[1] 1,640,000	[1] 1,720,900	[1] 265,400	[1] 1,063,300	[1] 793,500	[1] 265,600	[1] 48,535,700

* Corrected for boundary-crossing tornadoes.
** Tornado days for country as a whole.
1. Additional losses occurred.
2. Losses occurred; amount not reported.
3. Slight
4. Datum not obtained.

NUMBER OF TORNADOES, TORNADO DAYS, AND RESULTING LOSSES BY YEARS; 1916-1956

Year	Number reported	Number tornado days	Total loss of life	Most deaths in a single tornado	Total reported property losses	Number of tornadoes causing losses of	
						$100,000	$1,000,000
1916	90	36	150	30	$2,264,500	6	1
1917	121	38	509	101	15,007,700	22	5
1918	81	45	135	36	7,431,200	19	1
1919	65	35	206	59	6,861,500	9	2
1920	87	49	498	87	15,007,500	24	7
1921	106	55	202	61	5,456,300	13	1
1922	108	65	135	16	6,880,000	20	0
1923	102	59	109	23	2,968,700	8	0
1924	130	58	376	85	26,072,400	25	6
1925	119	64	794	689	24,039,900	29	1
1926	111	56	144	23	4,324,000	16	0
1927	164	63	540	92	43,455,700	28	7
1928	203	79	92	14	13,235,600	25	4
1929	197	73	274	40	10,112,400	30	1
1930	192	72	179	41	12,289,100	28	3
1931	94	57	36	6	3,215,900	7	1
1932	152	67	394	37	8,888,500	11	1
1933	260	96	362	34	16,190,600	31	5
1934	147	77	47	6	4,424,900	9	0
1935	182	77	70	11	4,661,400	15	0
1936	159	73	552	216	26,228,500	17	6
1937	148	76	29	5	3,155,900	11	0
1938	220	78	183	32	8,793,500	18	3
1939	155	75	87	27	5,891,900	10	2
1940	128	65	65	18	6,015,300	9	1
1941	118	57	53	25	4,492,700	15	0
1942	170	68	384	65	15,269,000	32	3
1943	155	63	58	5	12,198,400	25	4
1944	173	67	275	100	21,644,200	34	7
1945	126	68	210	69	22,069,800	25	8
1946	109	66	78	15	12,232,000	31	3
1947	171	80	313	169	23,994,700	42	5
1948	190	74	140	33	40,699,700	53	6
1949	262	84	212	58	27,367,400	45	7
1950	210	92	70	18	13,637,300	31	1
1951	300	119	34	6	29,484,400	27	7
1952	270	104	230	57	35,193,900	48	10
1953	532	151	516	116	224,345,900	43	15
1954	690	177	35	6	28,367,400	41	3
1955	870	170	125	80	33,975,700	54	4
1956	823	174	83	25	48,535,700	61	13
Total	8,690	3,202	8,984	---	---	1,047	154
Average	212.0	78.1	219.1	---	---	---	---
Median	155	68	150	---	---	---	---

NOTE.--The above estimated losses are based on values at time of occurrence. Adjustments for the change in price index would necessarily have to be made in comparing damages of the present time with those of previous years.

HAILSTORM LOSSES

YEAR 1956

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
Alabama					$15,000					$500		$25,500	$3,000	$32,000
Arizona														1,800
Arkansas			(2)	1/ 3/ $10,000	(2)	(2)	1/ 3/ 4/ $304,500	1/ 3/ $15,000	3/ 4/ $8,500	3/ $40,000	(2)	(2)	1/ 3/ 5/ 600	1/ 3/ 55,700
California	5 $5,000						(2)						(6)	
Colorado										(2)	4/ $250,000	3/ 500,800	(2)	(2)
Connecticut													3/ 5/ 20,000	3/ 30,000
Delaware											(2)	(2)	(2)	(2)
District of Columbia														
Florida								(2)		(2)		(2)		(2)
Georgia	(6)		(6)	(6)	(6)	(6)	(2)	(2)		120,000	(2)	4/ 200,000		(2)
Idaho							(2)		(2)	250,000	(2)	(2)	3/ 5/ 10,000	3/ 4/ 300,000
Illinois			$225,000				7/ 20,000		5,000	10,000		106,500	20,000	893,000
Indiana					6,000				400			17,000		41,000
Iowa					3/ 5/ 27,700		3/ 5/ 197,000		3/ 4/ 7,000		3/ 16,500	3/ 99,000	3/ 4/ 587,200	3/ 4/ 5/ 5,746,000
Kansas							4,056,000	(6)	1/ 55,000	1/ 111,000	1/ 14,100	1/ 278,000	1/ 64,800	1/ 399,000
Kentucky													1,500	24,500
Louisiana					(2)	(2)	(2)	(2)					(2)	(2)
Maine											(6)		(6)	1/ 500
Maryland											(2)	(2)	(2)	(2)
Massachusetts											(2)	(2)		
Michigan					250,000		10,000		7,500,000		300,000	25,000	561,000	720,000
Minnesota									4/ 25,000	(6)	38,500	3/ 4/ 213,000	1/ 3/ 25,000	1/ 3/ 3,970,000
Mississippi							1/ 3/ 10,000	(2)					(2)	(2)
Missouri			$20,000	(6)			1/ 62,000	1/ 5,000		(2)			(6)	(2)
Montana											3/ 12,000	3/ 331,000	1/ 4/ 13,500	1/ 1,825,100
Nebraska									27,000	1/ 287,000	1/ 19,500	1/ 435,500	1/ 397,000	1/ 4,791,000
Nevada														

HAILSTORM LOSSES

Section	August		September		October		November		December		Crop season April–Sept		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
Alabama											$3,000	$58,000	$18,000	$58,000	$76,000
Arizona		1/ $400										1/ 2,200		1/ 2,200	1/ 2,200
Arkansas	(2)	1/ 3/ 4/ 48,500		$50,000						(2)	1/ 3/ 4/ 5/ 313,600	1/ 3/ 4/ 209,200	1/ 3/ 4/ 5/ 313,600	1/ 3/ 4/ 219,200	1/ 3/ 4/ 5/ 532,800
California					(2)	(2)					(2)		1/ 5/ 5,000	(2)	1/ 5/ 5,000
Colorado	$40,000	20,000									1/ 4/ 290,000	1/ 3/ 520,800	1/ 4/ 290,000	1/ 3/ 520,800	1/ 3/ 4/ 810,800
Connecticut											3/ 5/ 20,000	3/ 30,000	3/ 5/ 20,000	3/ 30,000	3/ 5/ 50,000
Delaware											(2)	(2)	(2)	(2)	(2)
District of Columbia															
Florida												(2)		(2)	(2)
Georgia		(6)			(6)	(6)					(2)	1/ 4/ 320,000	(2)	1/ 4/ 320,000	1/ 4/ 320,000
Idaho	(2)	(2)		(2)							1/ 3/ 5/ 10,000	1/ 3/ 4/ 550,000	1/ 3/ 5/ 10,000	1/ 3/ 4/ 550,000	1/ 3/ 4/ 5/ 560,000
Illinois	5,000	60,000	$5,000	20,000							7/ 55,000	1,089,500	7/ 280,000	1,089,500	1,369,500
Indiana			8,000	12,000							8,400	70,000	14,400	70,000	84,400
Iowa	3/ 4/ 5/ 824,300	1/ 4/ 1,404,600									3/ 4/ 5/ 1,632,000	3/ 4/ 5/ 7,249,600	3/ 4/ 5/ 1,659,700	3/ 4/ 5/ 7,249,600	3/ 4/ 5/ 8,909,300
Kansas	20,000	5,000					(6)				1/ 4,209,900	1/ 793,000	1/ 4,209,900	1/ 793,000	1/ 5,002,900
Kentucky		3/ 59,000		19,000							1,500	3/ 102,500	1,500	3/ 102,500	3/ 104,000
Louisiana					(2)	(2)					(2)	(2)	(2)	(2)	(2)
Maine	200	500	(2)	1/ 50,000							1/ 200	1/ 51,000	1/ 200	1/ 51,000	1/ 51,200
Maryland											(2)	(2)	(2)	(2)	(2)
Massachusetts	(2)	1/ 1,000	1/ 500	(6)	(6)						1/ 500	1/ 1,000	1/ 500	1/ 1,000	1/ 1,500
Michigan	5,000	45,000		2,000							8,376,000	792,000	8,626,000	792,000	9,418,000
Minnesota	3/ 212,000	1/ 3/ 215,000									1/ 3/ 4/ 300,500	1/ 3/ 4/ 4,398,000	1/ 3/ 4/ 300,500	1/ 3/ 4/ 4,398,000	1/ 3/ 4/ 4,698,500
Mississippi	(6)	(6)									1/ 3/ 10,000	(2)	1/ 3/ 10,000	(2)	1/ 3/ 10,000
Missouri	(2)	(2)									1/ 62,000	1/ 5,000	1/ 82,000	1/ 5,000	1/ 87,000
Montana	505,200	3,807,000		29,100							1/ 3/ 4/ 530,700	1/ 3/ 5,992,200	1/ 3/ 4/ 530,700	1/ 3/ 5,992,200	1/ 3/ 4/ 6,522,900
Nebraska	1/ 7,400	542,000			(2)						1/ 450,900	1/ 6,055,500	1/ 675,900	1/ 5,830,500	1/ 6,506,400
Nevada											0	0	0	0	0

See reference notes at end of table.

HAILSTORM LOSSES

YEAR 1956

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
New Hampshire														
New Jersey									$50,000	(6)	3/5/7/ $250,000		$2,500	
New Mexico								(2)	(2)	3,600	(2)	(2)	75,000	1/ 115,000
New York										(2)		(2)	500	105,000
North Carolina									26,000	699,400	1,000	128,200	10,000	1,941,500
North Dakota											16,000	1,300,000	40,000	2,600,000
Ohio														5,000
OKLAHOMA			(2)		1/ $50,000	(2)	1/3/5/ $210,000	1/ $262,000	1/3/4/ 32,000	1/4/ 30,000	1/ 870,000	1/ 50,000	1/3/ 50,100	1/ 12,600
Oregon									(6)	1,400	(6)	(6)	80,000	180,000
Pennsylvania											5/ 108,000	130,000	1/4/5/ 11,000	1/ 350,000
Rhode Island													3/7/ 5,000	(2)
South Carolina			$100		100	6,500		10,000		70,000		3/4/5/ 710,000	200	4/ 369,000
South Dakota									5,000	(2)	1/ 11,000	3/4/ 95,000	68,000	1/4/ 1,207,000
Tennessee											1/ 1,000	5,000	3/ 95,000	3/ 560,000
Texas			1/3/ 50,000		51,000	3/ 400,000	1/3/ 515,000			(2)	(2)	(2)	(2)	1/3/ 200,000
Utah								(2)	(6)	(2)		(6)	(6)	(6)
Vermont													400	
Virginia									(2)	(2)	(2)	(2)	(2)	(2)
Washington										3/4/ 20,000	1/3/ 50,000	3/4/5/ 75,000	3/4/5/ 20,000	1/3/ 100,000
West Virginia													1/3/4/7/ 500,000	(2)
Wisconsin											(2)	(2)	3/4/5/ 95,000	3/4/5/ 130,000
Wyoming									(6)	(2)		(6)	1,800	205,000
Alaska														
Hawaii														
West Indies														
Total	1/5/ 5,000		1/3/ 295,100	1/3/ 10,000	1/3/5/ 399,800	1/3/ 406,500	1/3/4/5/7/ 5,384,500	1/3/ 292,000	1/3/4/ 7,740,900	1/3/4/ 1,642,900	1/3/4/5/7/ 1,957,600	1/3/4/5/ 5,024,500	1/3/4/5/7/ 2,788,100	1/3/4/5/ 26,912,700

HAILSTORM LOSSES

Section	August		September		October		November		December		Crop season April–Sept.		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
New Hampshire			(2)	$10,000							(2)	$10,000	(2)	$10,000	1/ $10,000
New Jersey											3/5/7/ $302,500	(6)	3/5/7/ $302,500	(6)	1/3/5/ 302,500
New Mexico		1/ $112,000		20,000							1/ 75,000	1/ 250,600	1/ 75,000	1/ 250,600	1/ 325,600
New York		(6)	(2)	(2)							1/ 500	1/ 105,000	1/ 500	1/ 105,000	1/ 105,500
North Carolina	$18,000	951,200		307,200		$5,000					85,000	4,330,500	85,000	4,335,500	4,420,500
North Dakota	30,000	4,600,000		100,000							86,000	8,600,000	86,000	8,600,000	8,686,000
Ohio	2,500	(2)									2,500	1/ 5,000	2,500	1/ 5,000	1/ 7,500
Oklahoma	1/3/ 240,000	1/3/ 195,000			$35,000	65,000					1/3/4/5/ 1,402,100	1/3/4/ 549,600	1/3/4/5/ 1,487,100	1/3/4/ 614,600	1/3/4/5/ 2,101,700
Oregon	1,500	27,000	(6)	(6)							1/ 81,500	1/ 208,400	1/ 81,500	1/ 208,400	1/ 289,900
Pennsylvania	3/5/ 265,000	1/ 50,000	3/4/5/ $150,000	(2)							3/4/5/ 534,000	1/ 530,000	3/4/5/ 534,000	1/ 530,000	1/3/4/5/ 1,064,000
Rhode Island											3/7/ 5,000	(2)	3/7/ 5,000	(2)	1/3/ 5,000
South Carolina		16,500									200	3/4/5/ 1,175,500	400	3/4/5/ 1,182,000	3/4/5/ 1,182,400
South Dakota	10,000	260,000		(2)		(6)					1/ 94,000	1/3/4/ 1,562,000	1/ 94,000	1/3/4/ 1,562,000	1/3/4/ 1,656,000
Tennessee	3/ 55,000	3/ 90,000									1/3/ 151,000	3/ 655,000	1/3/ 151,000	3/ 655,000	1/3/ 806,000
Texas	3/4/ 1,005,000				1/3/4/ 410,000	2,134,000					1/3/4/ 1,520,000	1/3/ 200,000	1/3/4/ 2,031,000	1/3/ 2,734,000	1/3/4/ 4,765,000
Utah		7,000							(6)		(6)	1/ 7,000	(6)	1/ 7,000	1/ 7,000
Vermont			(2)	(2)							1/ 400	(2)	1/ 400	(2)	1/ 400
Virginia	1/3/4/ 13,500	1/3/4/ 293,000									1/3/4/ 13,500	1/3/4/ 293,000	1/3/4/ 13,500	1/3/4/ 293,000	1/3/4/ 306,500
Washington	1/3/4/5/ 700,000	1/3/4/ 2,100,000									1/3/4/5/ 770,000	1/3/4/5/ 2,295,000	1/3/4/5/ 770,000	1/3/4/5/ 2,295,000	1/3/4/5/ 3,065,000
West Virginia											1/3/4/7/ 500,000	(2)	1/3/4/7/ 500,000	(2)	1/3/4/ 500,000
Wisconsin	4/ 150,000	4/ 30,000									1/3/4/5/ 245,000	1/3/4/5/ 160,000	1/3/4/5/ 245,000	1/3/4/5/ 160,000	1/3/4/5/ 405,000
Wyoming	80,100	17,500									1/ 81,900	1/ 222,500	1/ 81,900	1/ 222,500	1/ 304,400
Alaska											0	0	0	0	0
Hawaii											0	0	0	0	0
West Indies											0	0	0	0	0
Total	1/3/4/5/ 4,189,700	1/3/4/ 14,957,200	1/3/4/5/ 163,500	1/ 619,300	1/3/4/ 445,000	1/ 2,204,000	(6)	0	(6)	(2)	1/3/4/5/7/ 22,224,300	1/3/4/5/ 49,448,600	1/3/4/5/7/ 23,369,200	1/3/4/5/ 52,069,100	1/3/4/5/ 75,438,300

1. Additional losses occurred.
2. Losses occurred; amount not reported.
3. Includes damage from attendant high winds.
4. Includes damage from attendant heavy rain.
5. Includes lightning damage.
6. Damage reported as slight.
7. Includes crop damage.

HAILSTORM LOSSES FOR PAST YEARS

Year	Property (exclusive of crops)	Crops	Total	Year	Property (exclusive of crops)	Crops	Total
1933			$ 6,773,800	1945	$3,608,200	$31,513,400	$35,121,600
1934			11,390,400	1946	9,783,800	30,382,000	40,165,800
1935			9,471,400	1947	3,829,300	54,348,900	58,178,200
1936	$1,953,900	$9,053,100	11,007,000	1948	12,163,200	56,180,800	68,344,000
1937	1,797,400	10,991,900	12,789,300	1949	6,336,400	41,646,600	47,983,000
1938	2,634,700	12,170,200	14,804,900	1950	21,072,800	28,094,500	49,167,300
1939	358,800	3,153,700	3,512,500	1951	26,416,400	49,015,800	75,432,200
1940	2,245,900	7,162,400	9,408,300	1952	9,454,400	40,094,300	49,548,700
1941	1,854,600	11,449,100	13,303,700	1953	11,457,800	38,330,900	49,788,700
1942	1,513,500	16,407,600	17,921,100	1954	20,177,900	52,517,700	72,695,600
1943	3,149,200	33,854,200	37,003,400	1955	20,162,300	40,514,100	60,676,400
1944	9,061,000	49,987,900	59,048,900	1956	23,369,200	52,069,100	75,438,300

NOTE.--The above estimated losses are based on values at time of occurrence. Adjustments for the change in price index would necessarily have to be made in comparing damages of the present time with those of previous years.

WINDSTORM LOSSES

(Windstorms other than tornadoes)

YEAR 1956

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
Alabama			$1,178,000		$500		$142,700		$18,700		$9,800		$30,400	
Arizona			5,000						14,000		[3] 19,000		[4] 34,100	500
Arkansas			[3] 2,256,600	[3] $10,000	(5)	(5)	[3] 46,100	(5)	[3,6] 8,500	(5)	[3,4] 22,100	(5)	[3,4,6] 50,000	(5)
California	$50,000	(5)	125,000	(5)	200,000	(1)								
Colorado					500	(5)			[3,4] 6,500	(5)	(5)	(5)	[2,6] 5,000,000	(5)
Connecticut			(5)		(5)		(5)				[2,8] 10,000	(1)	[3] 5,000	[6] $30,000
Delaware														
District of Columbia													(5)	
Florida	[3] 2,000		(5)		(5)		[3] 65,000	(5)	[3,4] 200		[3] 25,000	(5)	[3] 46,000	(5)
Georgia	2,000		(5)		[2,4] 26,500	(1)	(5)	(5)	[2,4] 15,000	(1)	[2,4] 25,000		[2,4] 185,000	(5)
Idaho	(1)		(5)		(5)		(5)		(5)	(5)	(5)	(5)	(5)	(5)
Illinois			75,000		30,000		[4] 190,000		[4] 160,000		[4] 149,000		[4] 100,000	
Indiana			[2] 112,800		15,000		500		160,000		84,000		51,000	3,000
Iowa	[7] 5,000				[4,6] 27,700		[6] 552,500		[2,6] 15,500		[2,4,6] 79,600	[2,6] $18,900	[2,6] 602,100	[2,6] 4,379,000
Kansas	(5)	(5)	(5)		(1)	(5)	70,000	(5)	[2] 159,200	[3] $5,000	28,000	3,000	237,600	3,000
Kentucky			2,016,500		20,500		4,000		2,500		11,000	500	23,500	252,500
Louisiana			26,000				[3] 8,000	[6] $5,000			[3] 12,000		[3] 50,500	(5)
Maine	[2] 1,000,000		[2] 40,000		(5)		(5)		300		(5)	(5)	(5)	(5)
Maryland			150,000				(1)		(5)		(1)		(5)	
Massachusetts	[2] 900,000		[2] 150,000		(5)		[3] 25,000		[3] 1,000		(5)	(5)		
Michigan					1,000,000		300,000		151,000		325,000	25,000	1,550,000	250,000
Minnesota					[3,7] 130,000		(5)		(5)	(5)	[2,4,6] 455,000	[2,6] 330,000	(5)	
Mississippi			[6] 30,500				[6] 55,000	(1)			(5)		[3] 5,000	2,000
Missouri			30,000				[3] 85,000		[3] 200,000				(5)	(5)
Montana					[3] 17,000						28,700		5,000	[3] 78,000
Nebraska							15,000		4,000		[3] 45,500		[3] 116,000	2,000
Nevada									(1)				(5)	

See reference notes at end of table.

WINDSTORM LOSSES

(Windstorms other than tornadoes)

YEAR 1956

Section	August		September		October		November		December		Crop season April–Sept		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
Alabama	$12,000	(1)	2/ $503,500	2/ $5,000,000					$5,500		2/ $717,100	2/3/ $5,000,000	2/ $1,901,100	2/3/ $5,000,000	2/3/ $6,901,100
Arizona	183,000	$32,100	500				$7,400				3/4/ 250,600	32,600	3/4/ 263,000	32,600	3/4 295,600
Arkansas	2/3/4/6/ 267,000	(5)							4/6/ 19,700		2/3/4/6 393,700	(5)	2/3/4/6 2,670,000	3/ 10,000	2/3/4/6 2,680,000
California					(5)	(1)	(5)	(1)	(5)	(5)			3/ 375,000	(5)	3/ 375,000
Colorado	2/ 3,000	(5)	3/4/ 3,000		2/3/4/6/ 1,500		4/7/ 18,500				2/3/4/6/ 5,012,500	(5)	2/3/4/6/7/ 5,033,000	(5)	2/3/4/6/7/ 5,033,000
Connecticut	(5)		4/8/ 30,000	(5)							2/3/4/8/ 45,000	3/6/ 30,000	2/3/4/8/ 45,000	3/6/ 30,000	2/3/4/6/ 75,000
Delaware															
District of Columbia			(5)								(5)		(5)		(5)
Florida	31,100	(5)	3/ 8,700	(5)	3/ 3,000,000	(5)	3/ 1,000,000				3/4/ 176,000	(5)	3/4/ 4,178,000	(5)	3/4/ 4,178,000
Georgia	2/4/ 10,000	(1)	2/ 75,000	2/ 40,000							2/3/4/ 310,000	4/3 40,000	2/3/4/ 338,500	2/3/ 40,000	2/3/4/ 378,500
Idaho	3,800	(5)	31,000	(1)	4/ 300				3/7/ 4,000		3 34,800	(5)	3/4/7 39,100	(5)	3/4/7/ 39,100
Illinois	4/ 255,000		4/ 50,000								4/ 904,000		4 1,009,000		4/ 1,009,000
Indiana	207,000	6,000	8,500				3,400				511,000	9,000	2/ 612,200	9,000	2 651,200
Iowa	2/4/6/ 1,723,100	2/4/6/ 1,693,000			4/ 53,000		700		1,000		2/4/6/ 2,972,800	2/4/6/ 6,090,900	2/4/6/7 3,063,200	2/4/6/ 6,090,900	2/4/6/7/ 9,154,100
Kansas	235,000		20,000				7/ 6,000	(5)	2,000		2 749,800	3/ 11,000	2/3/7 757,800	3/ 11,000	2/3/7/ 768,800
Kentucky	19,200	6/ 59,000									60,200	6/ 312,000	2,097,200	6/ 312,000	6/ 2,409,200
Louisiana	2/4/ 16,000		7,750,000	3,750,000	3/ 3,000	(5)			1,000		2/3/4/ 7,836,500	3/6 3,755,000	2/3/4 7,866,500	3/6/ 3,755,000	2/3/4/6/ 11,621,500
Maine	3/ 500	500	(5)	(5)	2,500		70,000		(5)		3/ 800	3/ 500	2/3/ 1,113,300	3 500	2/3/ 1,113,800
Maryland	(5)		(5)								(5)		3/ 150,000		3/ 150,000
Massachusetts	3/ 36,000		3/ 2,000				300,000		(5)		3/ 64,000	(5)	2/3/ 1,414,000	(5)	2/3/ 1,414,000
Michigan	20,000	3,000	4,000				100,000		7,000		2,350,000	278,000	3,457,000	278,000	3,735,000
Minnesota	3/4/6/ 250,500	2/3/6/ 18,000			3/ 25,000	(5)	(1)				2/3/4/6/ 705,500	2/3/6/ 348,000	2/3/4/6/7/ 860,500	2/3/6/ 348,000	2/3/4/6/7/ 1,208,500
Mississippi	3/ 2,500	(5)	50,000	750,000							3/6/ 112,500	3/ 752,000	3/6/ 143,000	3/ 752,000	3/6/ 895,000
Missouri	3/ 500,000	(5)	(5)		(5)		300		(5)		3/ 785,000	(5)	3/ 815,300	(5)	3/ 815,300
Montana							10,000	$40,000	3/ 1,000,000	(5)	33,700	3/ 78,000	3/ 1,060,700	3/ 118,000	3/ 1,178,700
Nebraska	(5)	20,000	1,000		(5)		7/ 5,000				3/ 181,500	22,000	3/7/ 186,500	22,000	3/7/ 208,500
Nevada					(1)						(5)		(5)		(5)

WINDSTORM LOSSES

(Windstorms other than tornadoes)

Section	January		February		March		April		May		June		July	
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops
New Hampshire	2/ $100,000		2/ $30,000		(5)		(5)				3/ $2,500	(5)		
New Jersey			(5)		(5)	(5)	$100,000	(1)	4/ $50,000	(1)	4/6/8/ 250,000		3/ $7,500	(5)
New Mexico							3,000							
New York			3/ 125,000		$25,000		30,000						128,000	$51,000
North Carolina	50,000		60,000		16,000		79,000	2,000	8,000		25,000		19,000	
North Dakota							25,000		10,000		55,000	$2,000		
Ohio							15,000		8,750,000	(1)	150,000	(5)		
Oklahoma			3/4/ 1,108,000	(5)	3/4/ 3,000		3/4/6/ 119,900	3/6/ 12,000	3/4/6/ 72,400	2/6/ $24,000	3/4/ 91,900	(5)	3/4/6/ 244,800	2/3/6/ 75,000
Oregon	225,000	$1,000	10,000		245,000	5,000	(1)	(1)	2,000	2,600	(1)	(1)	8,000	2,000
Pennsylvania			2/ 10,000,000		7/ 5,000		2/4/ 210,000		2/4/6/ 845,000		100,000		4/ 5,500	(5)
Rhode Island			(5)		(5)		(5)						6/8/ 5,000	(5)
South Carolina	2,000		4/ 48,700		22,900		2/4/ 34,100	2/4/6 16,000	4/6 1,000		10,900	4/6/ 15,000	2/ 165,300	6/ 2,700
South Dakota	7/ 10,000		(1)		3/ 2,500	(5)	(1)				6/ 125,000	3/ 20,000	100,000	800,000
Tennessee	20,000		3/ 48,500		15,000		40,000				16,000		3/ 99,200	3/6/ 10,000
Texas			2/3/ 1,002,000				3/ 65,000	(5)	2/3/ 233,000	4/6/ 6,000	3/4/6/ 258,000	7,000	2/3/4/6/ 266,800	
Utah	(5)				(1)		(5)		(1)		(1)		(1)	
Vermont			2/ 30,000		3/ 5,000		(5)						400	
Virginia	(5)	(5)	80,000	(5)	(5)	(5)	(1)	(1)	3 5,500	(5)	(5)	(5)	2/3/ 17,000	
Washington	2/3/7/ 50,000		2/3/7/ 200,000		2/3/7/ 150,000		3/ 100,000	3/ 150,000	3/4/6/ 50,000	3/6/ 20,000	3/4/ 10,000	3/6/ 25,000		
West Virginia			(5)		3/ 8,000				2/ 518,000		(5)		2/3/6/8/ 500,000	(5)
Wisconsin									7,500		3/ 20,000	(5)	200,000	20,000
Wyoming							300		(1)	(1)	5,000	(1)	10,300	2,500
Alaska	23,000		9,000				7/ 101,000		1,000				8,000	
Hawaii	36,000													
West Indies														
Total	2/3/7/ 2,475,000	3/ 1,000	2/3/4/6/7/ 18,946,600	3/ 10,000	2/3/4/6/7/ 1,965,100	3/ 5,000	2/3/4/6/7/ 2,481,100	2/3/4/6/ 185,000	2/3/4/6/ 11,469,800	2/3/4/6/ 57,600	2/3/4/6/8/ 2,448,000	2/3/4/6/ 446,400	2/3/4/6/8/ 9,876,000	2/3/6/ 5,963,200

See reference notes at end of table.

WINDSTORM LOSSES

(Windstorms other than tornadoes)

YEAR 1956

Section	August		September		October		November		December		Crop season April–Sept		Total		
	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property	Crops	Property and crops
New Hampshire			[2,4] $6,000				$125,000		[3] $300		[2,3,4] $8,500	(5)	[2,3,4] $263,800	(5)	[2,3,4] $263,800
New Jersey	[2,3,4,8] $251,000	(5)	[3,4,6,8] 500,000	(5)	[2] $2,500				[3] 25,000		[2,3,4,6,8] 1,158,500	(5)	[2,3,4,6,8] 1,186,000	(5)	[2,3,4,6] 1,186,000
New Mexico											3,000		3,000		3,000
New York	(5)	(5)	(5)	(5)	50,000						[3] 158,000	[3] $51,000	[3] 358,000	[3] $51,000	[3] 409,000
North Carolina	50,000		100,000	$1,000,000	150,000	$700,000					281,000	1,002,000	557,000	1,702,000	2,259,000
North Dakota	600,000	1,100,000							15,000		690,000	1,102,000	705,000	1,102,000	1,807,000
Ohio	2,080,000	(5)									10,995,000	(5)	10,995,000	(5)	[3] 10,995,000
Oklahoma	[3,4] 424,300	(5)	[3,4] 1,400	(5)	[2,3,4] 132,200	(5)			(5)	(5)	[3,4,6] 954,700	[2,3,6] 111,000	[2,3,4,6] 2,197,900	[2,3,6] 111,000	[2,3,4,6] 2,308,900
Oregon	1,000	1,511,000	(1)	(1)	(1)	(1)	(1)	(1)	15,000	(1)	[3] 11,000	[3] 1,515,600	[3] 506,000	[3] 1,521,600	[3] 2,027,600
Pennsylvania	[2,4] 3,500,000	(5)	[2,4,6] 20,000								[2,4,6] 4,680,500	(5)	[2,4,6,7] 14,685,500	(5)	[2,3,4,6,7] 14,685,500
Rhode Island			[4,8] 10,000	(5)			10,000		(5)		[3,4,6,8] 15,000	(5)	[3,4,6,8] 25,000	(5)	[3,4,6] 25,000
South Carolina	[4] 40,700						500				[2,4,6] 252,000	[2,4,6] 33,700	[2,4,6] 326,100	[2,4,6] 33,700	[2,4,6] 359,800
South Dakota	8,500	(5)	[6] 3,000		4,000	(5)	[3] 10,000		500		[3,6] 236,500	[3] 820,000	[3,6,7] 263,500	[3] 820,000	[3,6,7] 1,083,500
Tennessee	[6] 55,300	[6] 30,000	(5)	(5)							[3,6] 210,500	[3,6] 40,000	[3,6] 294,000	[3,6] 40,000	[3,6] 334,000
Texas	[2,3,4,6] 919,600	100,000	[3,6] 11,500	[3] 2,500	[3,4,6] 894,200		10,000	15,000			[2,3,4,6] 1,753,900	[3,4,6] 115,500	[2,3,4,6] 3,660,100	[3,4,6] 130,500	[2,3,4,6] 3,790,600
Utah	4,000		(1)		[3] 300				(5)		[3] 4,000		[3] 4,300		[3] 4,300
Vermont			15,000				5,000		(5)		[3] 15,400		[2,3] 55,400		[2,3] 55,400
Virginia	[2,3,6] 28,500	[2,3,6] 157,000	(5)	(5)							[2,3,6] 51,000	[2,3,6] 157,000	[2,3,6] 131,000	[2,3,6] 157,000	[2,3,6] 288,000
Washington			[3,4] 20,000	[3] 40,000	[2,3,4] 100,000				[3,7] 75,000		[3,4,6] 180,000	[3,6] 235,000	[2,3,4,6,7] 755,000	[3,6] 235,000	[2,3,4,6,7] 990,000
West Virginia	(5)	(5)	(5)	(5)							[2,3,6,8] 1,018,000	(5)	[2,3,6,8] 1,026,000	(5)	[2,3,6] 1,026,000
Wisconsin	16,000	2,000			2,000						[3] 243,500	[3] 22,000	[3] 245,500	[3] 22,000	[3] 267,500
Wyoming							[7] 22,000				[3] 15,600	[3] 2,500	[3,7] 37,600	[3] 2,500	[3,7] 40,100
Alaska			[3] 5,500				65,700				[3,7] 115,500		[3,7] 213,200		[3,7] 213,200
Hawaii									5,000	$15,000			41,000	15,000	56,000
West Indies	1,787,100	32,130,700					(5)	(5)			1,787,100	32,130,700	[3] 1,787,100	[3] 32,130,700	[3] 33,917,800
Total	[2,3,4,6,8] 13,540,700	[2,3,4,6] 36,862,300	[2,3,4,6,8] 9,229,600	[2,3] 10,582,500	[2,3,4,6] 4,420,500	[3] 700,000	[3,4,7] 1,769,500	[3] 55,000	[3,4,6,7] 1,179,000	[3] 15,000	[2,3,4,6,7,8] 49,045,200	[2,3,4,6] 54,097,000	[2,3,4,6,7,8] 79,800,900	[2,3,4,6] 54,883,000	[2,3,4,6,7] 134,683,900

1. Damage reported as slight.
2. Includes damage from attendant heavy rain.
3. Additional losses occurred.
4. Includes lightning damage.
5. Losses occurred; amount not reported.
6. Includes damage from attendant hail.
7. Includes damage from attendant heavy snow.
8. Includes crop damage.

WINDSTORM LOSSES PAST YEARS

(Windstorms other than tornadoes)

Year	Total loss of life	Total losses
1916	65	$11,712,100
1917	25	1,400,600
1918	79	7,602,200
1919	344	28,170,000
1920	42	4,735,400
1921	65	13,174,700
1922	133	5,055,800
1923	68	5,261,800
1924	78	13,545,800
1925	88	11,612,400
1926	357	93,610,300
1927	64	6,783,200
1928	1,947	88,836,000
1929	46	20,334,600
1930	49	5,705,500
1931	17	7,773,000
1932	306	42,657,400
1933	156	65,604,100
1934	109	19,497,200
1935	461	17,191,000
1936	121	17,256,300

Year	Total loss of life	Total losses
1937	43	$6,292,900
1938	630	315,435,400
1939	60	3,988,100
1940	251	25,588,900
1941	43	15,523,300
1942	68	32,691,600
1943	61	25,056,500
1944	448	207,745,900
1945	85	36,498,700
1946	70	29,515,200
1947	117	135,377,500
1948	52	59,169,900
1949	102	69,476,600
1950	210	134,798,860
1951	289	86,296,600
1952	137	78,484,000
1953	118	151,958,400
1954	292	786,173,400
1955	301	318,963,300
1956	196	134,683,900
Total	8,193	-------

NOTE.--The above estimated losses are based on values at time of occurrence. Adjustments for the change in price index would necessarily have to be made in comparing damages of the present time with those of previous years.

NORTH ATLANTIC HURRICANES AND TROPICAL DISTURBANCES—1956

Compiled by
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BETSY, FLOSSY and GRETA presented the chief hurricane threats during a season that was one of the mildest in recent years. These three, in addition to hurricane ANNA, the first of the year, and four tropical storms of less than hurricane intensity comprise the eight storms of the 1956 season. In addition a number of weak cyclonic disturbances of tropical origin were covered by warnings and bulletins issued by the Weather Bureau.

Individual reviews of these storms are given in this summary. A synopsis of the important features of those reaching tropical storm force (40 knots) is given in the accompanying table and their tracks are plotted on the accompanying chart, Tracks of North Atlantic Hurricanes and Tropical Disturbances, 1956.

Unnamed Tropical Storm of June 11-14. An unusually early tropical storm developed south of the Louisiana coast during the early morning hours of June 13, 1956. It moved inland over southeastern Louisiana a short distance west of Grand Isle during the late forenoon of the same day.

The highest wind reported ashore was 55 m.p.h. from the east at Grand Isle at 7:15 a.m., c.s.t., on the 13th. The lowest reported pressure was 1004 millibars (29.66 inches) at Moissant Airport, New Orleans, and at McComb, Miss. The highest measured tide was 4.7 feet above mean sea level at Biloxi, Miss.

General rains over the Middle Gulf States, associated with this storm, ended a drought situation that had become critical. The heaviest rainfall was within 100 miles of and to the east of the storm track. Precipitation ranged between 2 and 7 inches over southeastern Louisiana, coastal Mississippi and southwestern Alabama. Lesser amounts were general over the remainder of these states and in Arkansas. The benefit to crops probably exceeded property losses from wind and water along the coast. Four persons drowned, three when the tug MAY DEE sank off the Mississippi coast and the other, a truck driver, when his truck skidded on the bridge over Lake Pontchartrain and plunged into the lake.

Hurricane ANNA, July 25-26. The easterly wave in which ANNA developed passed through the Lesser Antilles on July 20 and continued westward through the Caribbean. Intensification was steady after the center passed into the Bay of Campeche during the afternoon of the 25th. Development continued until the storm moved inland on the Mexican coast during the afternoon of the 26th as a small hurricane.

During the morning of the 26th Navy aircraft located the center with lowest pressure 991 millibars (29.26 inches) and maximum winds estimated at 50 knots in the northern semicircle. That evening when the storm moved inland south of Tampico a maximum wind of 70 knots (81 m.p.h.) was reported with lowest pressure 1002 millibars (29.60 inches). Apparently winds of hurricane force prevailed for only about 3 hours as the storm approached and crossed the coastline.

At Tampico downtown streets were flooded by a 2½ inch rain that accompanied the storm. Many houses were blown down in the poorer sections and some roofs were blown off the more substantial homes. There were no reports of injuries or loss of life. Damages were reported at about $50,000.

Hurricane BETSY, August 9-19. This storm appeared on the 1830GMT Surface Chart of August 6, near latitude 13°N., longitude 33°W., as an easterly wave that moved westward across the Atlantic until August 9, when some intensification was indicated in a report from the SS MARISA. During the 10th reports from vessels including the SS MORMACLARK, the MS SAGOLAND and the SS WILLEMSTADT, strategically located near the storm, confirmed the presence of a tropical storm, and at 11:00 a.m., e.s.t., the first advisory on BETSY was issued. When reconnaissance aircraft reached the storm later in the day, it was found to be a very small hurricane but with winds of 120 m.p.h. near the center and central pressure 979 millibars (28.91 inches). The eye was defined by a very tightly closed pattern on the radar only 10 miles in diameter. Reports indicate the storm had reached hurricane intensity as it crossed through the central Lesser Antilles, over the south portion of the Island of Marie Galente, and between Les Saintes and the extreme south portion of Basse Terre, Guadeloupe. Reports indicate 18 lives lost and severe damage. On Guadeloupe 1000 dwellings were extensively damaged, all communications disrupted, and 50 to 60 percent of the banana, bread fruit, coconut and papaya trees destroyed, a serious blow to the economy of the country.

By 4:00 p.m., e.s.t., August 11 BETSY had entered the northeastern Caribbean Sea passing about 30 miles south of St. Croix, Virgin Islands, between 4:00 and 4:30 a.m., e.s.t., on the morning of August 12 with winds from the ESE at 86 m.p.h. in gusts. The center entered the southeast coastal area of Puerto Rico in the vicinity of Maunabo at approximately 7:00 a.m., e.s.t., on August 12 moving on a north-northwest course at about 20 m.p.h., and passed out to sea in the Atlantic near Camuy about 10:15 a.m., e.s.t., on the same day.

Reports indicate all of Puerto Rico, except the southwestern portion which was protected by the backbone of the island, experienced winds of 75 m.p.h. or higher in gusts. Maximum sustained winds at San Juan were 73 m.p.h. with gusts to 92 m.p.h. and rainfall totaling 3.19 inches. An extreme gust of 115 m.p.h. was reported from Ramey Air Force Base. Nine deaths were reported in Puerto Rico and property damage totaled over $25,500,000.

Continuing a northwestward movement at a speed of about 17 m.p.h. the hurricane moved to a position near Turks Island early on August 13 and, with some acceleration, reached the vicinity of San Salvador in the Bahamas about 8:00 p.m., e.s.t., on that date. Winds at San Salvador reached 132 m.p.h. in gusts with sustained winds 100 m.p.h. or more. Approximately 5 inches of rain fell in 5 hours.

Aircraft reconnaissance on August 13 showed a slight increase in the size of the storm but little changes in central pressure or maximum winds. Gales were reported as extending 125 miles to the north and 60 miles to the south of the center. On August 14 recurvature began with a sharp deceleration in forward movement. By the 16th movement was toward the northeast at an increased forward speed of about 20 m.p.h. Total damage from this hurricane was about $35,600,000. An estimated 27 persons lost their lives.

Tropical Storm CARLA, September 5-11. The first indication of this storm appeared early in the morning of September 5 when a weak circulation showed up along an easterly wave that was moving into the southeastern Bahamas. This circulation drifted north-northwestward and by the morning of the 6th was located near latitude 24°N., longitude 75°W. By the 7th the storm had recurved to the northeastward, some deepening had occurred and the area of strong winds had expanded to cover an area 300 to 400 miles in diameter. On the morning of the 8th highest winds were 35 to 45 m.p.h., mainly to the east and south of the center.

Reconnaissance aircraft on the morning of the 9th located an ill-defined center but reported no eye existed and no spiral bands were in evidence. Highest surface winds were estimated at 30 knots. During the afternoon about the same conditions existed as far as the center was concerned; however, maximum winds of 40 to 50 m.p.h. extended 200 miles to the west and northwest. Highest winds to the east and south were about 40 m.p.h.

Advisories on this tropical storm began at 5:30 p.m., e.s.t., on the 9th and were discontinued at 5:00 a.m. of the 10th after the storm reached the vicinity of latitude 35.0°N., longitude 63.5°W., and had taken on extratropical characteristics. No casualties or loss of life have been reported in connection with this storm.

Tropical Storm DORA, September 10-12. This tropical storm formed on the afternoon of September 11 and was associated with a low pressure area drifting westward over the southwestern Gulf of Mexico. Evidence of a circulation had previously appeared in the winds aloft reports from Merida and Carmen as early as September 7.

Reconnaissance on the 11th indicated a lowest pressure of 1004 millibars (29.65 in.) and a maximum wind speed of 65 knots. This storm has not been classified as a hurricane since the 65 knot wind was estimated and not measured and it is not believed that the required pressure gradient for hurricane velocity existed. On the next morning reconnaissance again located the center and reported the same central pressure, 1004 millibars, and maximum winds of 50 knots. The center moved inland near Tuxpam about noon of the 12th with lowest pressure 1002 millibars (29.59 inches) and highest winds of 30 knots (35 m.p.h.).

Heavy rains associated with the storm caused a landslide in which 13 bus passengers were killed. Additional fatalities, including 7 persons drowned in the overflowing Pachuapan River near San Andreas Tuxtla, brought the total death toll to 27. Some flooding occurred but damage from the heavy rains is believed to have been slight.

Tropical Storm ETHEL, September 11-13. On the afternoon of September 11 a weak circulation was noted over Great Exuma Island in the Bahamas. During the following 24 hours this tropical depression drifted northeastward and gradually intensified.

The following afternoon aircraft on reconnaissance entered the storm and found a well developed eye, about 20 miles in diameter, entirely surrounded by a tropical wall cloud extending upward to about 30,000 feet. A maximum wind of about 66 knots, extending for a distance of some 3 miles, was encountered while entering the eye. Thirty knot winds extended outward 30 to 100 miles in all directions but no hurricane winds were found in any other quadrant. The storm assumed extratropical characteristics late on the 13th and lost intensity.

Hurricane FLOSSY, September 21-30. This hurricane, the only one to reach the coastline of the United States during 1956, passed over the Mississippi River Delta between Grand Isle and Burrwood, La., during the night of September 23-24. Winds as high as 90 m.p.h. with gusts to 100 m.p.h. were experienced in this area of Louisiana. After passing northeastward across the northern Gulf the center again entered the United States mainland just south of Pensacola with sustained winds of 64 m.p.h. and gusts reaching 88 m.p.h.

During the early history of this storm barometric pressures were below normal for several days over the western Caribbean Sea prior to the location of a definite wind circulation between Chetumal and Belize. By early morning of September 22 this circulation had moved north-northwestward across the Yucatan Peninsula and into the Gulf of Mexico near Merida. It increased to storm intensity during that day with disturbed conditions spreading over a large portion of the Gulf of Mexico. The storm intensified gradually while moving northward over the Gulf and reached hurricane intensity about noon on the 23d when the center was located about 125 miles off the southeastern Louisiana coast.

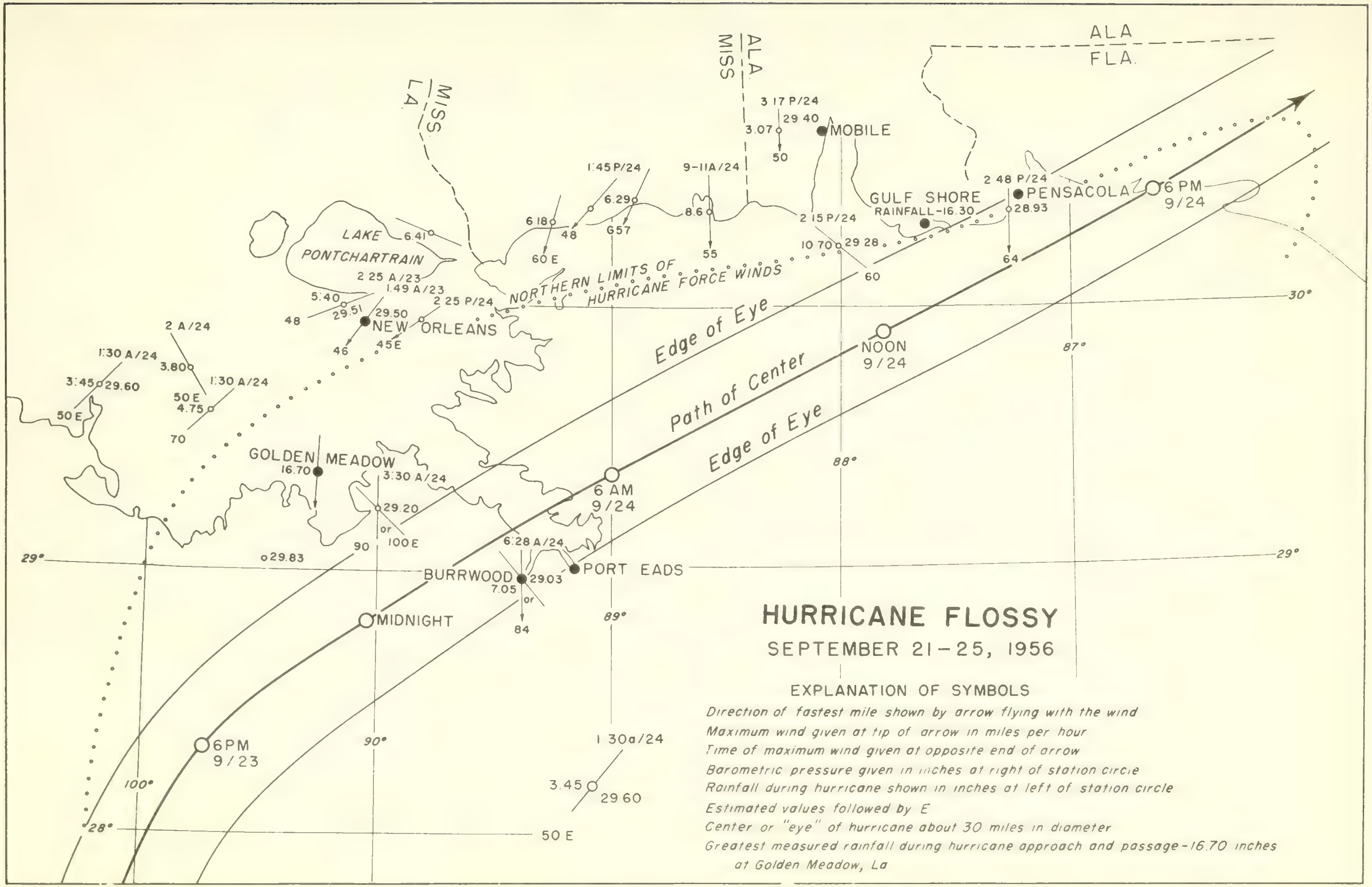
Soon after FLOSSY reached hurricane force she turned sharply east-northeastward and crossed the Delta a short distance north of Burrwood, near Pilottown. Here the hurricane seems to have reached maximum intensity with highest measured wind 84 m.p.h. and lowest pressure 983 millibars (29.03 inches) at Burrwood. An oil rig a little to the west of Grand Isle reported a maximum wind of 83 m.p.h. and gusts to 95 m.p.h. The wind, being offshore velocities along the Mississippi coast, was below hurricane force.

The area of heavy rainfall was sharply defined over Louisiana and Mississippi. The heaviest reported was 16.70 inches at Golden Meadow, La. High water, raised by northeasterly gales and hurricane winds, moved inland as far west as the Mississippi River levee in Plaquemines Parish and to the Orleans and St. Bernard parish protection levees. The St. Bernard levee failed to hold the sea water back in places. Water from Lake Pontchartrain splashed over and damaged the seawall and flooded parts of the Gentilly section. The Lake levee kept sea water out of adjacent lowlands in Jefferson Parish. West of the Mississippi River flooding from the sea did not extend far inland, reaching only 28 inches at Golden Meadow, but flooding from torrential rains was a problem in some sections.

The center passed a little south of Pensacola during the afternoon of the 24th and somewhat later over Ft. Walter, Fla. At the time the eye of the hurricane was over Ft. Walton a Navy reconnaissance plane reported winds estimated at 93 m.p.h. over the Gulf southeast of the hurricane center. As far as known, no hurricane winds were reported at any point in Florida, but winds near hurricane force were experienced eastward along the coast as far as Panama City. The lowest pressure reported during the storm was 980 millibars (28.93 inches) at the Pensacola Naval Station.

The storm became extratropical shortly after the center passed out of Florida, but it remained an energetic storm as it moved northeastward inside the coastline until it passed out to sea near the Virginia Capes. High tides flooded portions of Norfolk with depths reaching 2½ feet in several of the principal streets.

Damage in the states of Louisiana, Florida, Alabama and Mississippi totaled $24,774,000 of which $15,204,000 was to crops. Damage in other states including Georgia, the Carolinas and Virginia was $100,000 or less and was outweighed by the beneficial rains which relieved drought conditions.



HURRICANE FLOSSY

SEPTEMBER 21–25, 1956

EXPLANATION OF SYMBOLS

Direction of fastest mile shown by arrow flying with the wind
Maximum wind given at tip of arrow in miles per hour
Time of maximum wind given at opposite end of arrow
Barometric pressure given in inches at right of station circle
Rainfall during hurricane shown in inches at left of station circle
Estimated values followed by E
Center or "eye" of hurricane about 30 miles in diameter
Greatest measured rainfall during hurricane approach and passage - 16.70 inches at Golden Meadow, La

Deaths, mainly resulting from car and plane accidents attributed to the storm, totaled 15.

Data observed at selected stations during passage of hurricane FLOSSY are contained in the table. The course of this hurricane along the Gulf coast is indicated on the accompanying chart which includes a selection of data observed during passage.

Hurricane GRETA, October 30-November 6. A depression was first noted southeast of Jamaica on October 30 when a reconnaissance flight observed southeasterly winds of 35 m.p.h. Numerous showers and a large area of relative calm prevailed near the location of lowest pressure. The Woods Hole research vessel CRAWFORD was near the center during the afternoon and evening of the 30th and encountered winds of 25 m.p.h. from the southeast and a minimum pressure of 1005 millibars (29.68 inches).

The depression moved northward at a speed of 15 m.p.h. with gradually increasing intensity. By November 1, pressure had dropped to 998 millibars (29.47 inches) with winds of 30 to 40 m.p.h. over a large area surrounding the center. Gentle, variable winds and calms still covered an extensive area. By November 2 the storm had reached a position about 450 miles east of Florida where, blocked by a stagnated high pressure area off the middle Atlantic coast, it described a counterclockwise loop and moved southeastward to a location about 275 miles north of Puerto Rico. It was during this period that planes of the National Hurricane Research Project entered the storm system and found that GRETA had taken on tropical storm characteristics with a minimum pressure of 992 millibars (29.29 inches).

GRETA apparently reached hurricane intensity on the afternoon of November 3, or early on the 4th, and continued to intensify until November 5 when reports from reconnaissance aircraft indicated winds in excess of 100 m.p.h. and a minimum pressure of 970 millibars (28.64 inches). Forward motion of the storm system at this stage was northeastward at 20 to 25 m.p.h. During the following 2 days the storm increased the speed of its trajectary to the northeastward, lost intensity and gradually assumed extratropical characteristics.

The wind systems formed by the hurricane and the large anticyclone to the north covered a large expanse of the Atlantic Ocean and the long fetch, provided for the winds, set up larger waves and swells than would be anticipated by normal wind sea swell relationships. The track of this tropical cyclone is unusual and the intensification to hurricane force with a movement to the southeastward is rarely observed.

Damage in the United States has been estimated at over 1½ million dollars and at near 2 million in Puerto Rico, Dominica and the other West Indian Islands. One death was reported in Puerto Rico.

Along the south Atlantic coast damage was greatest on the Jacksonville beaches where water is relatively deep a short distance off shore. Rough seas, high swells and high tides occurred along the coasts of Puerto Rico, the Dominican Republic and the Leeward Islands. Damage in Puerto Rico from swells, at least 20 feet high, was heavy despite the fact that the hurricane center passed some 400 miles northward. Residents along the south and west coasts reported the highest seas in the memory of the oldest inhabitants. The Army pier at Ramey was destroyed and the Alcoa pier at Ronce loaded with a $100,000 cargo was demolished. St. Lucia, British West Indies, reported 20-foot swells and an occasional 25 footer from the west-northwest. Reports indicate 80 percent of the port installations were destroyed at Basse Terre, French West Indies.

In addition to the hurricanes and tropical storms covered above, there were a number of minor to moderately severe tropical or quasi-tropical disturbances observed during the 1956 season. With the exception of the quasi-tropical low of October 13-19, in which winds of 60 to 65 m.p.h. were reported, none of these tropical disturbances were accompanied by winds greater than 40 to 45 m.p.h.

The following summarizations cover the two storms in this class for which damage was reported.

Tropical depression of July 4-8. A complete though weak circulation began development about 7:30 p.m. on July 4 near latitude 26.2°N., longitude 86.2°W. This depression moved north-northwestward and northwestward on the 6th causing gusts of 38 knots at Panama City, Fla., as it passed offshore. It moved inland near Pensacola late on the 6th with lowest pressure reported as 1011 millibars (29.85 inches). Whatley, Ala., reported 14.22 inches of rain during passage of the storm, 10.85 inches of which fell in 24 hours. Property damage was estimated at $400,000 from the heavy rains and in addition there was $100,000 damage to crops and $3,000 to livestock. Many highway and railroad bridges were washed out and erosion of roads was extensive.

Quasi-tropical Low, October 13-19. Forming as a wave on the polar front north of Hispaniola on the 12th, this Low moved west-northwestward reaching a position near the southeast Florida coast south of Miami by the 15th. It then turned north and north-northeastward passing over the North Carolina Capes west of Hatteras. Rainfall ranged from 6 to 20 inches over a 50 mile wide belt from the northeastern corner of Lake Okeechobee to Jacksonville. Highest winds ashore were reported as gusts of 60 to 65 m.p.h., with the probability that sustained winds of 60 m.p.h. prevailed at sea. Damage in Florida resulting from flooding that accompanied this disturbance totaled about $3,000,000. Two persons drowned in the surf during passage of the storm.

TROPICAL STORM DATA

for storm of September 21-30, 1956 (FLOSSY)

Station	Date	Pressure (Inches)		Wind (m. p. h.)				Rainfall (inches)	Remarks
		Low	Time †	Fastest mile	Time	Gusts	Time		
Brownsville, Texas									
Galveston, Texas	23	29.76	1700 c.	21 E	0125 c.	32	0125c.	0.18	Slight flooding around Island
Port Arthur, Texas	23	29.75	1630 c.	34 NE	1505 c.	37	1505c.		Tide at Sabine Pass 3.5 feet above mean low water at 1900 c. on 23d.
Lake Charles, La.	23	29.73	1828 c.	17 NE	1500 c.			None	
Baton Rouge, La.	23	29.66	0230 c.	23	1428 c.	35			
New Orleans, La.	23					70	2325c.	5.40	
(Airport)	24	29.51	0208 c.	48 ENE	0225 c.				
Grand Isle, La.	24	29.20		90* NW	0300 c.	100*			Tide exceeded 8 feet. Wind shifted southeast to northeast then northwest. Worst from northwest.
Burrwood, La.	24	29.03	0500 c.	90* NW	0605 c.	110*	0605c.	7.05	Tide 1.5 feet above normal.
Bay St. Louis, Miss.	24			60*					Tide 3.5 feet above mean low water. Rain estimated 6 to 7 inches.
Pass Christian, Miss.	24			60 NNE					Tide 3.5 feet above mean low water.
Gulfport, Miss.	24			60 NE					Tide 3.5 feet above mean low water.
Biloxi, Miss.	24			60*		70*			Tide 3.5 feet above mean low water. Waves 7 feet above mean sea level
Pascagoula, Miss.	24			50* NE	0200 c.	60*	0200c.		Tide 3.4 feet above mean low water.
Mobile, Ala.	24	29.40		50 N	1517 c.	58	1517c.	7.09	
Pensacola, Fla. (Airport)	24	29.07	1410 c.	58 NE	1410 c.	78	1635c.	10.69	Tide 4.4 feet above mean low water. Wind at Naval Air Station 64 m.p.h. with gusts to 88. Minimum pressure 29.01 inches at 1430 c.
Tallahassee, Fla.	24			30 SE	1600 e	40	1600e.		Tide 5 feet above normal at St. Marks, Fla. Tornado reported 1/2 mile west of Dale Mabry field morning of 24th
	25	29.47	0500 c.					4.13	
Tampa, Fla.	25	29.71	0330 e.	20 SSW	0502 e.	32	0502e.	1.07	Tide 3.6 feet above normal.
St. Petersburg, Fla.	25			45*SSW	0500 e.	75*	0500e.	1.70	
Savannah, Ga.	24			43 SW	2354 e.	52	2354e.	3.76	Tornado reported near Hilton Head Island. Minor damage.
	25	29.52	1547 e.						
Columbia, S. C.	25	29.61	1930 e.	23 NE	1913 e.	32	1913e.	4.41	
Charleston, S. C.	25	29.54	1550 e.	35 E	1247 e.			2.62	Highest tide (6.8 feet) was 1.7 feet above normal.
Wilmington, N. C.	26	29.61	1326 e.	32 NE	0140 e.	54	0040e.	2.20	
Hatteras, N. C.	26	29.66	1630 e.	52 NE	0243 e.			3.42	Sea tide on highway from Oregon Inlet to Hatteras.
Norfolk, Va.	26			56 NE	2030 e.	61	2025e.	2.69	Tide 7.2 feet above mean low water (4.5 feet above normal) sent 2 1/2 feet of water over downtown streets at 0140 e. on 27th.
	27	29.79	0120 e.						
Richmond, Va.	27	29.94	0330 e.	37 NE	0010 e.			1.50	River 4 feet above normal due to tidal action at 8 a.m. on 27th.

† c. Indicates central standard time and e. eastern standard time; i.e. 0230 c. is 2:30 a.m., c.s.t. and 1547 e. is 3:47 p.m., e.s.t.

* Estimated

HURRICANES AND TROPICAL DISTURBANCES

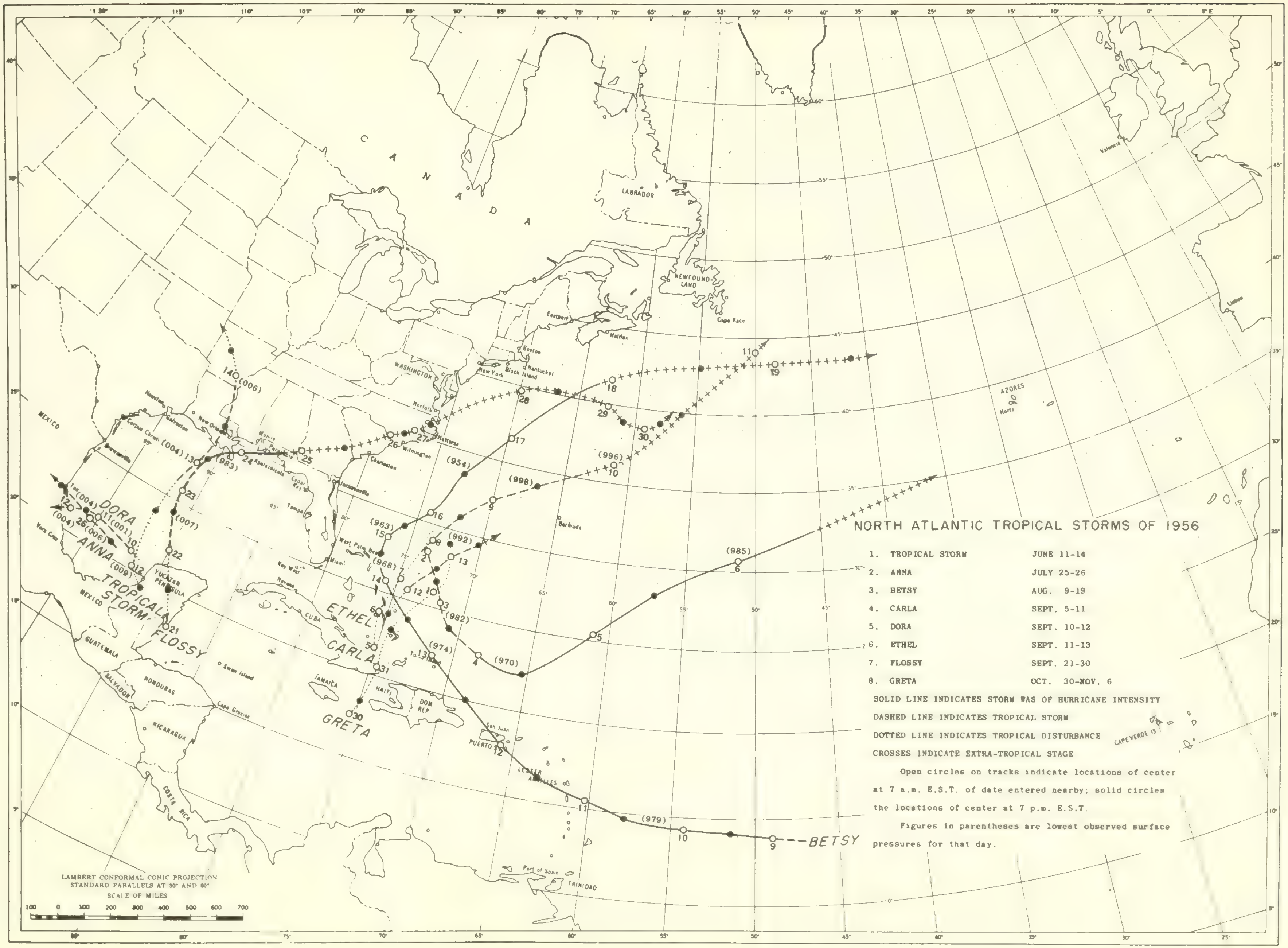
(Names of storms in table correspond to names on tracks on accompanying chart)

YEAR 1956

Storm name	Date	Area where first reported	Coast lines crossed	Highest wind speed reported	Lowest pressure reported *	Place of dissipation reported	Intensity	Remarks
Un-named	June 11-14	Gulf of Campeche	Louisiana	55 m.p.h. from the E at Grand Isle, La.	1004 mb (29.66 in) at Moisant Airport, La.	Western Arkansas	Tropical Storm	Highest Tides 4 1/2 to 5 feet along coast south of Houma, La. Four deaths.
ANNA	July 25-26	Gulf of Campeche	Mexico	81 m.p.h. at Tampico, Mex.	991 mb (29.26 in) by aircraft 120 mi. ESE of Tampico	West of Tampico, Mexico	Hurricane	Tampico downtown streets flooded. Many of the more fragile homes demolished. Damage estimated at $50,000.
BETSY	Aug. 9-19	Near Lat. 13°N., Long. 33°W.	Puerto Rico	132 m.p.h. in gusts at San Salvador, Bahamas	978 mb (28.59 in.) at Marie-Galente, F.W.I.	North Atlantic near Lat. 43°N. Long. 40° W.	Hurricane	Twenty-seven deaths and $35,600,000 in property damage reported from Puerto Rico and the Bahamas.
CARLA	Sept. 5-11	North of eastern Cuba	None	40-50 m.p.h. by aircraft reconnaissance near Lat. 32.1°N., Long. 69.5°W.	Not reported	North Atlantic near Lat. 35°N. Long. 65°W.	Tropical Storm	No damage or loss of life reported
DORA	Sept. 10-12	Gulf of Campeche	Mexico (Tuxpam area)	Estimated 75 m.p.h. by aircraft over the Gulf of Campeche	1002 mb (29.59 in.) reported by aircraft near Tuxpam	Mexico west of Tuxpam	Tropical Storm	Death toll of twenty-seven in Mexico. Some flooding near Tuxpam - damage slight.
ETHEL	Sept. 11-13	North of eastern Cuba	None	Estimated 75 m.p.h. by aircraft reconnaissance near Lat. 27.8°N., Long. 72.9°W.	999 mb (29.50 in.) Near Lat. 27.8°N., Long. 72.9° W.	North Atlantic near Lat. 30°N., Long. 70° W.	Tropical Storm	No damage or loss of life reported
FLOSSY	Sept. 21-28	Near Belize on the Yucatan Peninsula	Yucatan La. and Florida	Highest measured wind 84 m.p.h. at Burrwood, La.	980 mb (28.93 in.) at Pensacola Naval Air Station	North Atlantic near Lat. 40°N, Long. 55° W.	Hurricane	Fifteen deaths and damage estimated $25,000,000 in the United States
GRETA	Oct. 30-Nov. 6	Between Jamaica and Haiti	Cuba	Aircraft reconnaissance estimated highest winds near Lat. 27°N., Long. 60°W. at 135 m.p.h.	970 mb (28.64 in.) by aircraft on Nov. 5.	Dissipated over the North Atlantic near Lat. 35°N., Long. 35° W.	Hurricane	Several million dollars damage in Florida, Puerto Rico and the Virgin Islands from rough seas, high swells (16 to 20 feet) and high tides.

(* Reduced to sea level)

TRACKS OF NORTH ATLANTIC HURRICANES AND TROPICAL DISTURBANCES, 1956.



NORTH ATLANTIC TROPICAL STORMS OF 1956

1.	TROPICAL STORM	JUNE 11-14
2.	ANNA	JULY 25-26
3.	BETSY	AUG. 9-19
4.	CARLA	SEPT. 5-11
5.	DORA	SEPT. 10-12
6.	ETHEL	SEPT. 11-13
7.	FLOSSY	SEPT. 21-30
8.	GRETA	OCT. 30-NOV. 6

SOLID LINE INDICATES STORM WAS OF HURRICANE INTENSITY
DASHED LINE INDICATES TROPICAL STORM
DOTTED LINE INDICATES TROPICAL DISTURBANCE
CROSSES INDICATE EXTRA-TROPICAL STAGE

Open circles on tracks indicate locations of center at 7 a.m. E.S.T. of date entered nearby; solid circles the locations of center at 7 p.m. E.S.T.

Figures in parentheses are lowest observed surface pressures for that day.

NORTH ATLANTIC HURRICANES AND TROPICAL DISTURBANCES FOR PAST YEARS

Frequency of tropical storms by month and season and number of storms reaching hurricane intensity

	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.	Total
1887									
Number of tropical storms	1		2	2	3	6	1	2	17
Number of hurricanes			1	2	3	2	1	1	10
1888									
Number of tropical storms		1	1	2	2	1	3		10
Number of hurricanes		1		2	1	1	1		6
1889									
Number of tropical storms	1	1		1	5	1			9
Number of hurricanes	1			1	3				5
1890									
Number of tropical storms				1					1
Number of hurricanes				1					1
1891									
Number of tropical storms			1	2	3	4	1		11
Number of hurricanes			1	2	3	2			8
1892									
Number of tropical storms		1		1	4	3			9
Number of hurricanes				1	2	1			4
1893									
Number of tropical storms		1	1	5	3	1	1		12
Number of hurricanes			1	5	3				9
1894									
Number of tropical storms				2	1	3			6
Number of hurricanes				1	1	3			5
1895									
Number of tropical storms				2	1	3			6
Number of hurricanes				1		1			2
1896									
Number of tropical storms			1	1	2	2			6
Number of hurricanes			1	1	2	2			6
1897									
Number of tropical storms				1	2	2			5
Number of hurricanes				1	1				2
1898									
Number of tropical storms				2	5	2			9
Number of hurricanes				2	2				4
1899									
Number of tropical storms			1	2	1	2			6
Number of hurricanes			1	2	1	1			5
1900									
Number of tropical storms				1	3	3			7
Number of hurricanes				1	2				3
1901									
Number of tropical storms		1	2	2	3	2			10
Number of hurricanes			1	2					3
1902									
Number of tropical storms		2			1	1	1		5
Number of hurricanes		1			1	1			3
1903									
Number of tropical storms			1	1	4	2	1		9
Number of hurricanes			1	1	3	2	1		8
1904									
Number of tropical storms		1			1	3	1		6
Number of hurricanes					1	1			2
1905									
Number of tropical storms					3	2			5
Number of hurricanes						1			1
1906									
Number of tropical storms		2		1	3	4	1		11
Number of hurricanes		1		1	2	2			6
1907									
Number of tropical storms		1			2	1			4
Number of hurricanes									0
1908 (Mar.)									
Number of tropical storms 1			1	1	3	2			8
Number of hurricanes 1			1		2	1			5
1909									
Number of tropical storms		2	2	2	2	1	2		11
Number of hurricanes			1	1	1	1			4

Frequency of tropical storms by month and season and number of storms reaching hurricane intensity

	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Total
1910									
Number of tropical storms				1	2	1			4
Number of hurricanes					2	1			3
1911									
Number of tropical storms				2	1	1			4
Number of hurricanes				2	1				3
1912									
Number of tropical storms		1	1		2	3	1		8
Number of hurricanes		1			1	2	1		5
1913									
Number of tropical storms		1		1	1	1			4
Number of hurricanes		1		1	1				3
1914									
Number of tropical storms					1				1
Number of hurricanes									0
1915									
Number of tropical storms			1	2	2				5
Number of hurricanes				2	2				4
1916									
Number of tropical storms		1	2	3	4	3	1		14
Number of hurricanes		1	2	3	2	2	1		11
1917									
Number of tropical storms				2	1				3
Number of hurricanes				1	1				2
1918									
Number of tropical storms				3	2				5
Number of hurricanes				2	1				3
1919									
Number of tropical storms			1		1		1		3
Number of hurricanes					1				1
1920									
Number of tropical storms					4				4
Number of hurricanes					4				4
1921									
Number of tropical storms		1			3	1			5
Number of hurricanes		1			2	1			4
1922									
Number of tropical storms		1			1	2			4
Number of hurricanes		1			1	1			3
1923									
Number of tropical storms				1	1	3			5
Number of hurricanes				1	1	2			4
1924									
Number of tropical storms		1		2	2	2	1		8
Number of hurricanes				2	1	1	1		5
1925									
Number of tropical storms					1		1		2
Number of hurricanes							1		1
1926									
Number of tropical storms			1	2	5	1	1		10
Number of hurricanes			1	2	4	1			8
1927									
Number of tropical storms				1	3	2	1		7
Number of hurricanes				1	3				4
1928									
Number of tropical storms				2	3	1			6
Number of hurricanes				2	1	1			4
1929									
Number of tropical storms		1			1	1			3
Number of hurricanes		1			1	1			3
1930									
Number of tropical storms				2					2
Number of hurricanes				2					2
1931									
Number of tropical storms		1	1	2	4	1	1		10
Number of hurricanes					2				2
1932									
Number of tropical storms	1			3	3	3	1		11
Number of hurricanes				3	1	1	1		6

NORTH ATLANTIC HURRICANES AND TROPICAL DISTURBANCES FOR PAST YEARS —Continued

Frequency of tropical storms by month and season and number of storms reaching hurricane intensity

	May	June	July	Aug	Sept.	Oct.	Nov.	Dec	Total
1933									
Number of tropical storms	1	1	3	7	5	3	1		21
Number of hurricanes		1	1	3	3	1			9
1934									
Number of tropical storms	1	1	1	2	2	3	1		11
Number of hurricanes		1	1	1	1	1	1		6
1935									
Number of tropical storms				3	1	2			6
Number of hurricanes				2	1	2			5
1936									
Number of tropical storms		3	2	6	5	1			17
Number of hurricanes		1	1	3	2				7
1937									
Number of tropical storms			1	2	6				9
Number of hurricanes					3				3
1938									
Number of tropical storms				2	1	3	1		7
Number of hurricanes				2	1				3
1939									
Number of tropical storms		1		1	1	2			5
Number of hurricanes						2			2
1940									
Number of tropical storms	1			3	2	2			8
Number of hurricanes				3	1				4
1941									
Number of tropical storms					4	2			6
Number of hurricanes					3	1			4
1942									
Number of tropical storms				3	3	3	1		10
Number of hurricanes				3			1		4
1943									
Number of tropical storms			1	2	4	3			10
Number of hurricanes			1	1	2	1			5
1944									
Number of tropical storms			3	2	3	2			10
Number of hurricanes			2	1	2	1			6
1945									
Number of tropical storms		1	1	4	3	1			10
Number of hurricanes		1		1	1	1			4
1946									
Number of tropical storms		1	1	1	1	2			6
Number of hurricanes			1		1	1			3
1947									
Number of tropical storms			1	2	3	3			9
Number of hurricanes				2	1	2			5
1948									
Number of tropical storms	2		1	3	2	1	1		10
Number of hurricanes				2	2	1	1		6
1949									
Number of tropical storms				3	8*	2	1		14
Number of hurricanes				2	4	1			7
1950									
Number of tropical storms				4	3	6			13
Number of hurricanes				4	3	4			11
1951									
Number of tropical storms	1			3	4	2			10
Number of hurricanes	1			2	3	2			8
1952 (Feb)									
Number of tropical storms	1			2	2	2			7
Number of hurricanes				2	2	2			6
1953									
Number of tropical storms	1			3	4	4	1	1	14
Number of hurricanes				2	3	1			6
1954									
Number of tropical storms		1	1	2	4	1	1		10
Number of hurricanes		1		2	3	1			7
1955 (Jan)									
Number of tropical storms	1		1	4	5	2			13
Number of hurricanes	1			3	5	1			10
1956									
Number of tropical storms		1	1	1	4	1			8
Number of hurricanes			1	1	1	1			4

Total number of tropical storms by month and season and number reaching hurricane intensity for period 1887 to 1956

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1887 to 1956													
Number of tropical storms	1	1	1		10	31	38	126	185	130	29	3	555
Number of hurricanes	1		1		2	14	20	94	115	63	11	1	322

Storms are listed under the month in which they were first observed. Exception - ALICE, 1955 (Dec. 30, 1954 - Jan. 5, 1955) is carried as a January storm.

Total number of hurricanes and tropical storms, loss of life and damage

	Total Number Tropical Storms*		Total Number Hurricanes		Loss of Life		Damage by Categories**	
Year	In all areas	Reaching U. S. Coast	In all areas	Reaching U.S. Coast	Total all areas	In United States	Total all areas	In United States
1887	17	4	10	3				
1888	10	6	6	4				
1889	9	4	5	2				
1890	1	0	1	0				
1891	11	4	8	2				
1892	9	3	4	0				
1893	12	7	9	5				
1894	6	3	5	2				
1895	6	4	2	1				
1896	6	4	6	4				
1897	5	4	2	1				
1898	9	6	4	3				
1899	6	4	5	3				
1900	7	3	3	1		6,000		7
1901	10	6	3	2		10		6
1902	5	3	3	2		#		#
1903	9	2	8	2		9		6
1904	6	4	2	2		#		6
1905	5	2	1	0		#		#
1906	11	6	6	4		285		7
1907	4	3	0	0		#		#
1908	8	3	4	1		#		#
1909	11	7	4	3		404		7
1910	4	3	3	2		13		6
1911	4	3	3	2		17		6
1912	8	6	5	3		12		6
1913	4	3	3	2		#		#
1914	1	1	0	0		#		#
1915	5	4	4	3		600		8
1916	14	9	11	6		107		7
1917	3	1	2	1		5		5
1918	5	2	3	1		34		6
1919	3	2	1	1		287		7
1920	4	3	4	3		2		6
1921	5	2	4	2		5		6
1922	4	1	3	0		0		#
1923	5	3	4	2		0		4
1924	8	4	5	3		2		3
1925	2	2	1	1		6		3
1926	10	3	8	3		269		8
1927	7	1	4	0		0		#
1928	6	3	4	3		1,836		7
1929	3	2	3	2		3		6
1930	2	1	2	0		0		2
1931	10	3	2	0		0		#
1932	11	6	6	2		0		#
1933	21	6	9	4		63		7
1934	11	5	6	3		17		6
1935	6	2	5	2		414		7
1936	17	8	7	3		9		6
1937	9	4	3	0		0		4
1938	7	4	3	2		600		8
1939	5	3	2	0		3		3
1940	8	4	4	3		51		6
1941	6	4	4	2		10		7
1942	10	3	4	2	17	8	7	7
1943	10	4	5	3	19	16	7	7
1944	10	4	6	3	1,076	64	8	8
1945	10	5	4	3	29	7	8	8
1946	6	4	3	1	5	0	7	7
1947	9	7	5	3	72	53	8	8
1948	10	5	6	3	24	3	7	7
1949	14	4	7	2	[illegible]	4	8	8
1950	13	4	11	4	27	19	7	7
1951	10	1	8	0	244	0	7	6
1952	7	2	6	1	16	3	6	6
1953	14	6	6	2	3	2	7	7
1954	10	5	7	4	720+	193	9	9
1955	13	5	10	3	1,518+	218	9	9
1956	8	2	4	1	76	21	8	7
Total	555	261	321	143:	-----	-----	---	---
Median	8	4	4	2	-----	-----	---	---

* Including hurricanes

# Not reported in literature, believed minor

+ Additional deaths for which figures are not available

** This is a new form of presentation of storm damage estimates. The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total damage, storms are placed in categories varying from 1 to 9 as follows:

1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to 5,000,000,000

Blank spaces indicate no figures available

: There were three additional storms (Aug. 31-Sept. 19, 1930; July 5-10, 1946 and Sept. 28-Oct. 8, 1951) which reached hurricane force after leaving the U.S. mainland.

EASTERN NORTH PACIFIC HURRICANES AND TROPICAL DISTURBANCES—1956

EUGENE H. QUINN
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San Francisco, California

Eleven tropical storms were charted off the west coast of Mexico during the 1956 season. Five of these storms were known to have reached hurricane strength (75 m.p.h. or more). The 1956 season was characterized by unusual early season activity, with the first tropical storm occurring about the middle of May. By the middle of July six storms had been so identified whereas a like number comprised the entire season's total for the preceding 1955 season. The number of tropical storms for so early in the season, i.e., before the month of August, generally averages about two. Another unusual feature of the 1956 season is that only one storm, the hurricane of June 12 to 13, crossed into Mexico; all others continued at sea where they finally dissipated.

Special advisories were issued on all storms that were believed to be intensifying to Beaufort force 7 (32 m.p.h.) or greater. The San Francisco forecast center of the U. S. Weather Bureau issued 110 advisories. All storms were between latitudes 13° and 18° north when first detected. No information has been received concerning damage to property or loss of life as a result of these storms.

A synopsis of the important features of these storms is given in the accompanying table. Pacific Standard Time is used throughout the table and in the following discussion.

I. Hurricane of May 17 to 19.--Although synoptic reports did not indicate this hurricane, later receipt of the log from the ARAPAHOE, an American freighter enroute from the Canal Zone to Hawaii, established the existence of a very small hurricane about 600 miles southwest of Manzanillo, Mexico, on May 17. At 9 p.m., p.s.t., the ARAPAHOE suddenly encountered a northeasterly wind of 43 m.p.h. at approximately latitude 14°N. and longitude 111°W. The barometer was 29.80 inches. The wind increased to 51 m.p.h. from north-northeast at 11 p.m. Waves were estimated to be 11 feet high. One hour later the ARAPAHOE experienced its lowest pressure of 28.90 inches during the storm. This was also the lowest pressure reported during the entire season. At that time the hurricane's center is believed to have been near latitude 13.7°N. and longitude 111.6°W. and moving westward at about 15 m.p.h. By 2 a.m., p.s.t., May 18, the wind had shifted to south-southeast 43 m.p.h., and was estimated to occasionally reach 92 m.p.h. Seas were mountainous. The strong south-southeast wind continued through 7 a.m., p.s.t., May 18, at which time the storm was estimated centered near latitude 13.8°N. and longitude 114.7°W. By noon, p.s.t., the weather had moderated. The ship's position was then at latitude 14.1°N., longitude 116.3°W. No other reports have been available to trace the subsequent history of this hurricane, but it is assumed to have continued its westward movement dissipating near latitude 14.3°N. and longitude 121.8°W. by 4 a.m., p.s.t., May 19.

II. Tropical Disturbance of May 29 to June 3. On the morning of May 29 the HAWAIIAN RETAILER, heading westward, had been experiencing increasing westerly wind. By 10 a.m., p.s.t., the wind had increased to 46 m.p.h. At 4 p.m., a storm center was charted at latitude 15.7°N. and longitude 104.1°W., and moving westward slowly. The Norwegian ship RAVNAAS was about 30 miles east of the storm center at 3 p.m., p.s.t., May 30, and was buffeted by a Beaufort force 8 to 9 southerly wind. The barometer read 29.53 inches, the lowest reported pressure for the storm. The storm continued on westward and by 4 p.m., p.s.t., May 31 the RAVNAAS, at latitude 16.3°N., longitude 109.0°W., was reporting easterly wind up to 72 m.p.h. and very rough seas. This was the highest reported wind for the storm. The center was then believed to be located at latitude 15.8°N. and longitude 108.6°W. No further reports of severe wind were received, and the storm is believed to have headed west-northwestward and gradually weakened.

III. Hurricane of June 9 to 10.--This storm is an illustration of the great dependence forecasters must place on ship reports in the eastern North Pacific Tropical Zone. Only one ship reported severe wind in this hurricane. The ship was the SAN JUAN TRADER and it indicated at 6 a.m., p.s.t., June 9, that it had passed near the center, encountering wind up to about 85 m.p.h. The ship position was at latitude 15.5°N. and longitude 106.0°W. The barometer read 29.09 inches. This was the highest wind and lowest pressure reported for the hurricane. One hour later the SAN JUAN TRADER, on an eastward course, had left the zone of hurricane wind and was reporting only 29 m.p.h. Subsequent ship reports in the vicinity of the storm were only occasionally adequate to delineate the general location of the storm center. They indicated that it moved north-northwestward at 10 m.p.h. to the vicinity of latitude 20°N. and longitude 109°W. by 1 p.m., p.s.t., June 10, gradually becoming indistinct.

IV. Hurricane of June 12 to 13.--A small low pressure system was centered about 300 miles south of the Gulf of Tehuantepec at noon, p.s.t., June 11. Winds reached close to 30 m.p.h. around the low system. However, by 4 a.m., p.s.t., June 12, the system had apparently intensified as indicated by an east-northeast wind of 52 m.p.h. reported by the PACIFIC UNITY. The storm was then estimated centered at latitude 13.2°N., longitude 96.8°W. and moving west-northwestwatd slowly. An unusually close determination of the center location and lowest barometer was obtained from the PORTLAND STAR on June 13 as it headed east-southeastward. It estimated its position near the center of the storm at 10:15 a.m., p.s.t., at latitude 16.8°N. and longitude 101.2°W. Wind had reached 104 m.p.h. shortly before passage of the center, but after the center passed southerly gusts exceeding 115 m.p.h. were encountered. The lowest barometer was 29.06 inches. Several high breaking waves were judged to be about 30 feet in height. The air was filled with rain and spray driving so hard as to be painful on contact to exposed skin, and reducing visibility to less than 65 feet. The barometer thereafter rose rapidly although conditions did not moderate until about noon, p.s.t. The hurricane subsequently moved north-northwestward onto the Mexican coast about 150 miles east-southeast of Manzanillo, and gradually dissipated.

V. Hurricane of July 8 to 12.--A small low pressure system had been moving west-northwestward just off the southern Mexican coast on July 6 and 7. Wind up to 35 m.p.h. had been reported by ships in its area. At 10 a.m., p.s.t., July 8, the SIMON VON UTRECHT observed an easterly wind of 46 m.p.h. with squally weather. A storm center was then estimated at latitude 17.1°N. and longitude 106.9°W. with lowest pressure 29.65 inches. The storm travelled west-northwestward at 15 m.p.h. and was located at latitude 19.7°N. and longitude 112.6°W. at 10 a.m., p.s.t., July 9. An hour and a half later the Santa Anita, just north of the center, was beset by easterly wind up to 98 m.p.h., the strongest reported wind for the hurricane. Seas were mountainous. The barometer read 29.50 inches, the lowest reported. The hurricane was assumed to continue on westward, dissipating near latitude 20.0°N. and longitude 125.0°W. by 1 a.m., p.s.t., July 12. No reports were received near the storm after 4 p.m., p.s.t., July 9.

VI. Tropical Disturbance of July 14 to 17.--At 6 p.m., p.s.t., July 14, the NATIONAL LIBERTY observed an east-northeast wind up to 54 m.p.h. at latitude 16.0°N. and longitude 120.2°W. The barometer read 29.47 inches. This was the lowest pressure and highest wind for the storm. A storm center was estimated at latitude 15.5°N. and longitude 120.5°W. The storm travelled west-northwestward at about 7 m.p.h. The TILLIE LYKES reported an easterly wind of 46 m.p.h. at latitude 18.5°N. and longitude 123.2°W. at 4 p.m., p.s.t., July 15. Later, wind up to 35 m.p.h. was reported through 10 a.m., p.s.t., July 16, when the storm was centered at latitude 17.4°N. and longitude 125.3°W. The storm moved westward at 9 m.p.h. and was believed to fade out near latitude 17.4°N. and longitude 128.9°W.

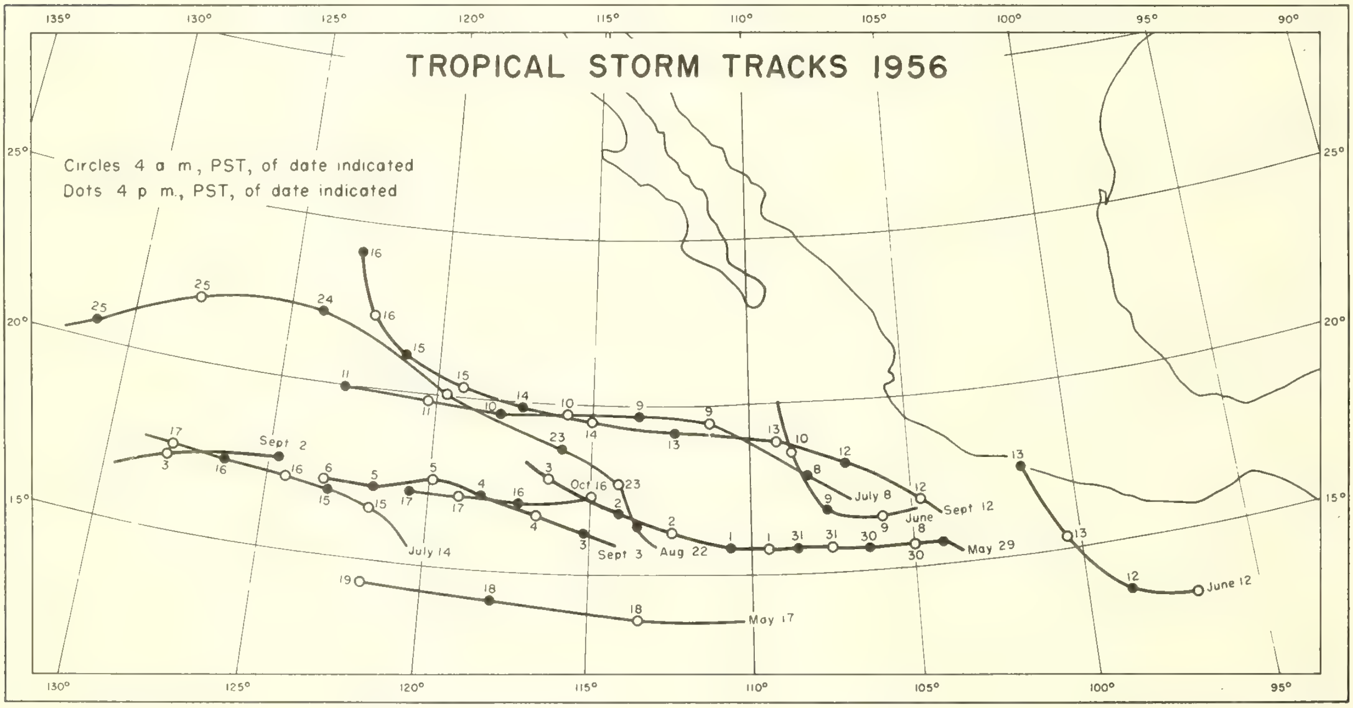
VII. Tropical Disturbance of August 22 to 26. At 10 a.m., p.s.t., August 22, the Norwegian motor vessel, SOMERVILLE, bound westward from the Canal Zone, encountered a westerly wind of 46 m.p.h. at approximately latitude 14.1°N. and longitude 113.4°W. Six hours later the SOMERVILLE'S wind had slackened a little, but seas were still rough. The barometer stood at 29.74 inches, the lowest for the storm. The storm center was located near latitude 16.7°N. and longitude 113.5°W. at 4 p.m., p.s.t., August 22. The J. O. Maria, a tuna clipper, was located about 260 miles north of the center and was experiencing a northeast wind up to 35 m.p.h. with heavy seas. The storm apparently moved northwestward at 8 m.p.h. to latitude 18.7°N. and longitude 116.0°W. at 4 p.m., p.s.t., August 23, with a central pressure estimated at 29.44 inches. It was headed for an area where ship reports are scarce; a request was made to McClellan Air Force Base, Sacramento, for a reconnaissance flight into the storm. The flight obtained a good fix on the storm center at latitude 22.2°N. and longitude 124.0°W. at 4 p.m., p.s.t., August 24. The storm had evidently been moving west-northwestward for 24 hours at an accelerated speed. The flight observers estimated the strongest surface wind to be northerly up to 70 m.p.h. This was the highest wind reported. As the plane approached the storm center, multi-layered clouds were forming in circular patterns. Later ship reports were insufficient to define the location of the storm or its intensity but the storm was evidently continuing on westward and weakening. This was indicated by the STEEL DESIGNER, which passed near the center of the former storm on the night of August 26. It reported only light to moderate wind.

VIII. Tropical Disturbance of September 2 to 3.--The existence of this storm was first substantiated at 10 p.m., p.s.t., September 2, when the AGHIOS NICOLAOS, at latitude 18.0°N., longitude 118.0°W., reported a north wind up to 46 m.p.h. A storm center was charted at latitude 17.5°N. and longitude 126.9°W. It was apparently the intensification of a small low pressure system which had been moving west-northwestward for at least 12 hours. At 4 p.m., p.s.t., September 2, the CECIL N. BEAN, at latitude 17.6°N. and longitude 126.0°W., had a barometer reading of 29.71 inches, the lowest for the storm. Later ship reports were scanty in the vicinity of this storm, but it evidently moved west-southwestward at about 14 m.p.h., dissipating near latitude 16.7°N. and longitude 129.7°W. at 10 a.m., p.s.t., September 3. Storm IX was developing at that time about 1,000 miles to the east, and this may have been a factor in the weakening of storm VIII.

IX. Hurricane of September 3 to 6.--At 1 p.m., p.s.t., September 3, the LA SALLE was at latitude 16.0°N. and longitude 115.5°W. and had been encountering increasing northerly wind and rapidly falling pressure as it steamed eastward. Within 3 hours the barometer had dropped 0.18 inch to a reading of 29.41 inches. A tropical storm was then centered near latitude 16.3°N. and longitude 115.3°W. This location was close to the area where the storm VII (August 22 to 26) first appeared. The intense nature of the storm was revealed when the LA SALLE was buffeted by a 73 m.p.h. south wind at latitude 15.4°N., longitude 114.8°W., the highest wind reported for this hurricane. The hurricane moved west-northwestward at 8 m.p.h., and at 10 a.m., p.s.t., September 4, was centered at latitude 17.0°N. and longitude 117.5°W. The HAWAIIAN TRAVELER, located at latitude 16.8°N., longitude 118.4°W., had the lowest barometer reading for the hurricane of 29.23 inches. Its wind at that time was north-northeast 52 m.p.h. Six hours later, the HAWAIIAN TRAVELER, heading southeastward, experienced a 69 m.p.h. west-southwest wind, and waves up to 21 feet. The hurricane subsequently passed on westward into an area where very few reports were available. It was assumed to move westward at 7 m.p.h. and to become indistinct near latitude 17.0°N., longitude 124.0°W. on September 6.

X. Tropical Disturbance of September 12 to 16. This storm was rather unusual in that two ships passed close to the center. These were the NERVA (on September 12) and the WINNIPEG (on September 13). A small low pressure system was suspected near latitude 13.0°N., longitude 99.0°W. at 10 a.m., p.s.t., September 10. The NERVA, located about 150 miles south of this center, was encountering a 35 m.p.h. southwesterly wind. Ship reports were insufficient to trace the path of this low system closely, but it apparently was moving west-northwestward at about 13 m.p.h. parallel to the coast. At 4 p.m., p.s.t., September 11, ship report provided a good determination of the low center at latitude 16.3°N. and longitude 102.5°W. The LETITIA LYKES, about 90 miles northeast of the center was reporting an east-southeast wind near 35 m.p.h. There was another lapse of adequate reports for about 21 hours but at 1 p.m., p.s.t., September 12, the NERVA was experiencing a 69 m.p.h. northwest wind at latitude 17.8°N., longitude 106.7°W. This was the strongest reported wind for the storm. The barometer had dropped almost 0.3 inch in 3 hours to read 29.37 inches. The storm center was located at latitude 17.9°N. and longitude 106.5°W. The NERVA, steaming northwestward, reported at 5 p.m., p.s.t., September 12, that the center of the storm had been observed at latitude 18.2°N., longitude 107.1°W. with a barometer of 29.18 inches. At 7 p.m. the NERVA'S wind had shifted to south 60 m.p.h. and the barometer had risen to 29.44 inches. No further definitive reports were received until the afternoon and evening of the 13th when the WINNIPEG passed close to the center. It apparently passed close to the center between 4 p.m. and 7 p.m., p.s.t., September 13. At 4 p.m. the ship was located near latitude 19.5°N., longitude 112.5°W. and heading southeastward. The wind shifted from north-northeast 46 m.p.h. at 4 p.m. to south 63 m.p.h. at 7 p.m., indicating a center near latitude 19.3°N., longitude 112.7°W. The lowest barometer on the WINNIPEG was 29.12 inches at about 5 p.m., near latitude 19.3°N., longitude 112.3°W. This was the lowest barometer reported for the storm. The center had been moving west by north at approximately 14 m.p.h. Beginning at 4 a.m., p.s.t., September 14, there were no reports received near the center. Occasional reports of wind near 35 m.p.h. on the periphery of the storm were received. There was some uncertainty as to the movement of the storm, but it apparently curved to the northwestward at 8 m.p.h. on about 10 a.m., p.s.t., September 15, and has been assumed to have dissipated near latitude 24.0°N. and longitude 123.0°W. on September 16.

XI. Tropical Disturbance of October 16 to 17. At 4 a.m., p.s.t., October 16, the HAWAIIAN CITIZEN reported a west-northwest wind of 35 m.p.h. at latitude 16.9°N., longitude 116.5°W. The barometer had dropped to 29.71 inches, the lowest for the storm. A small tropical storm was estimated to be located at latitude 17.3°N., longitude 115.0°W. As the HAWAIIAN CITIZEN headed for the Canal Zone it encountered a backing wind, and at 10 a.m., p.s.t., October 16, it reported the strongest wind for the storm, southwest 38 m.p.h. at latitude 16.0°N. and longitude 115.4°W. Subsequently, only meager reports were received in the vicinity of the storm. There were no further reports of severe weather. The storm apparently drifted westward slowly and is believed to have weakened materially near latitude 17.2°N., longitude 120.6°W. at 4 p.m., p.s.t., October 17.



HURRICANES AND TROPICAL DISTURBANCES

EASTERN NORTH PACIFIC

SEASON 1956

Storm Number	Date	Area where first reported	Coast lines crossed	Highest wind speed reported	Lowest pressure reported	Place of dissipation reported	Intensity	Remarks
I	May 17-19	Lat. 13.6°N., Long. 110.3°W., or about 600 mi. SW of Manzanillo, Mex.	None	92 m.p.h. May 18	28.90 in. May 17	Lat.14.3° N., Long. 121.8°W.		No land area affected
II	May 29-June 3	Lat. 15.3°N. Long. 103.5°W., or 250 mi. WSW of Acapulco, Mex.	None	72 m.p.h. May 31	29.53 in. May 30	Lat. 18.3° N., Long. 117.0°W.		No land area affected
III	June 9-10	Lat. 16.5° N., Long. 106.0°W., or about 400 mi. W of Acapulco, Mex.	None	85 m.p.h. June 9	29.09 in. June 9	Lat. 20.0° N, Long. 109.0°W.		No land area affected
IV	June 12-13	Lat. 13.2°N., Long. 96.8°W., or about 230 mi. SSW of Salina Cruz, Mex.	Mex. about 150 mi. ESE of Manzanillo	115+ m.p.h. June 13	29.06 in. June 13	ESE of Manzanillo, Mex.		No damage reports available
V	July 8-12	Lat. 17.1°N., Long. 106.9° W., or about 200 mi. SW of Manzanillo, Mex.	None	98 m.p.h. July 9	29.50 in. July 9	Lat. 20.0° N., Long. 125.0°W.		No land area affected
VI	July 14-17	Lat. 15.5°N.; Long. 120.5 W., or about 700 mi. WSW of Socorro Island	None	54 m.p.h. July 14	29.47 in. July 14	Lat. 17.4° N.,Long. 128.9°W.		No land area affected
VII	Aug. 22-26	Lat. 16.0°N., Long. 113.2°W., or about 250 mi. SW of Socorro Island	None	70 m.p.h. Aug. 24	29.74 in. Aug. 22	Lat. 20.4° N., Long. 132.3°W.		No land area affected
VIII	Sept. 2-3	Lat. 17.6°N., Long. 124.5°W.	None	46 m.p.h. Sept. 2	29.71 in. Sept. 2	Lat. 16.7° N., Long. 129.7°W.		No land area affected
IX	Sept. 3-6	Lat. 16.0°N., Long. 114.4°W., or about 300 mi. SW of Socorro Island	None	73 m.p.h. Sept. 3	29.23 in. Sept. 4	Lat. 17.0° N., Long. 124.0 W.		No land area affected
X	Sept. 12-16	Lat. 16.7°N., Long. 104.2°W., or about 200 mi. S of Manzanillo, Mex.	None	69 m.p.h. Sept. 12	29.12 in. Sept. 13	Lat. 24.0° N., Long. 123.0°W		No land area affected
XI	Oct. 16-17	Lat. 17.3°N., Long. 115.0°W., or about 300 mi. WSW of Socorro Island	None	38 m.p.h. Oct. 16	29.71 in. Oct. 16	Lat. 17.2° N., Long. 120.6°W		No land area affected

GENERAL SUMMARY OF FLOOD LOSSES, 1955

Monetary losses from floods in the United States during 1955, estimated at $995,489,500, was the second largest loss suffered from floods in any one year since records were started 54 years ago. It approached within 4 percent of the record flood loss of $1,028,742,000 reported in 1951. In comparison with 1954 it was more than 9 times the total of that year. The National average, based on the 10-year period 1942-1951 and adjusted to the 1951 price index, is $275,000,000. The total loss of life this year was 302 compared to 51 in 1951, the year of the record flood loss. It was also considerably greater than the National annual average of 86 lives lost during the last 32 years (1924-1955). The savings resulting from the flood forecasting and warning service was, as compiled from fragmentary information, approximately $15,000,000--this figure represents only 27 percent of the river systems where flooding occurred during the year.

The most significant flooding during 1955 occurred in southern New England, eastern Pennsylvania, southeastern New York and northern New Jersey during August due to torrential rains associated with Hurricane Diane. Both rains and floods were of record proportions and resulted in tremendous property damage. The floods on the West Coast in December ranked second in importance. Record to near record floods resulted in streams in northern and central California, western Nevada, southwestern Oregon and southwestern Idaho.

ESTIMATED FLOOD LOSSES FOR 1955

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
HUDSON BAY DRAINAGE																
Red River of the North........	....	....	$2,000	....	....	....	....	....	....	....	....	....	....	....	$2,000	0
Total....	....	....	2,000	....	....	....	....	....	....	....	....	....	....	....	2,000	0
ST. LAWRENCE DRAINAGE																
Lake Erie																
Cazenovia, Buffalo, Smokes and Cayuga Creeks........	$3,500	....	17,000	....	$2,000	....	....	....	$2,500	$1,500	$2,500	....	....	$1,925,000	1,954,000	0
Genessee River and tributaries........	3,500	....	....	....	20,000	....	....	....	....	....	1,000	....	....	....	24,500	0
Lake Champlain																
Mississquoi River........	....	....	....	....	....	....	....	....	....	....	....	....	....	615,000	615,000	0
Total....	7,000	....	17,000	....	22,000	....	....	....	2,500	1,500	3,500	....	....	2,540,000	2,593,500	0
ATLANTIC SLOPE DRAINAGE																
Blackstone River and tributaries........	....	....	A52,690,000	....	....	....	....	....	B20,000	....	10,620,000	$2,090,000	....	2,570,000	*67,990,000	2
Thames River and tributaries........	....	....	A42,990,000	....	....	....	....	....	B60,000	....	13,630,000	1,310,000	....	3,810,000	*61,800,000	8
Connecticut River and tributaries........	....	....	A62,740,000	....	....	....	....	....	B1,550,000	....	47,650,000	6,990,000	....	12,820,000	*131,750,000	34
Housatonic River and tributaries........	....	....	A212,690,000	....	....	....	....	....	B20,000	....	30,160,000	5,270,000	....	32,390,000	*280,530,000	50
Coastal streams in Southern New England	....	....	A6,000,000	....	....	....	....	....	....	....	6,984,000	....	$710,000	25,786,000	*39,480,000	13
Hudson River and tributaries........	....	....	....	....	....	....	....	....	....	....	....	....	....	17,803,000	*17,803,000	1
Delaware River and tributaries and other streams in New Jersey........	....	....	....	....	....	....	....	....	....	....	....	....	....	135,728,000	*135,728,000	89
Lackawana River and tributaries........	C1,316,200	....	2,056,000	1,027,600	4,589,900	$1,000	....	$8,000	385,600	1,000	1,000,000	1,300,000	....	10,000	#11,695,300	6
Susquehanna and tributaries........	C240,500	....	33,300	1,000	600	2,600	....	....	22,000	....	186,100	26,500	500	....	513,100	1
Patuxent River........	C6,800	....	D126,700	....	47,700	....	....	....	B1,219,200	....	51,200	....	11,700	281,000	*1,744,300	0
Potomac River and tributaries........	C355,700	....	D206,000	....	31,900	....	....	....	B3,629,000	....	788,200	159,200	146,800	1,402,700	*6,719,500	7
Rappahannock River and tributaries........	C37,000	....	D38,700	....	4,200	....	....	....	B2,095,600	....	136,700	7,900	12,900	2,871,600	*5,204,600	0
Piankatank River and Chesapeake Bay........	....	....	....	....	....	....	....	....	276,300	....	8,500	....	....	60,700	*345,500	0
James River and tributaries........	....	$1,000	....	....	....	80,000	....	3,500	....	....	101,000	....	16,500	....	202,000	2
Tar River........	....	....	....	....	....	10,000	....	....	....	....	....	....	....	....	10,000	0
Neuse River........	....	....	200	....	30,000	548,500	....	....	....	....	21,000	....	12,400	....	612,100	0
Cape Fear River........	....	....	....	....	....	....	....	....	....	....	....	....	3,000	....	3,000	0
Waccamaw River........	12,000	....	5,000	....	....	25,000	....	....	5,000	....	1,000	....	17,000	....	65,000	0
Pee Dee River........	....	....	....	....	....	7,000	....	300	....	....	....	....	....	....	7,300	0
Santee River........	....	....	....	....	....	2,000	....	500	....	....	....	....	....	....	2,500	0
Savannah River........	....	....	....	....	....	....	....	....	....	....	....	....	300	....	300	0
Total....	1,968,200	1,000	379,575,900	1,028,600	4,704,300	676,100	....	12,300	9,282,700	1,000	111,337,700	17,153,600	931,100	235,533,000	762,205,500	213
EAST GULF OF MEXICO DRAINAGE																
Escambia and Perdido Rivers........	....	....	....	....	....	5,000	....	....	....	....	200,000	....	....	....	205,000	0
Alabama River and tributaries........	....	....	....	8,000	30,000	150,000	....	....	....	....	250,000	....	1,500	362,000	#801,500	1
Black Warrior and Tombigbee Rivers........	300,000	70,000	150,000	75,000	100,000	100,000	50,000	175,000	345,000	50,000	638,000	125,000	300,000	....	#2,478,000	1
Pearl and Pascagoula Rivers........	....	....	....	....	....	....	....	....	....	....	1,567,000	....	....	248,400	#1,815,400	4
Total....	300,000	70,000	150,000	83,000	130,000	255,000	50,000	175,000	345,000	50,000	2,655,000	125,000	301,500	610,400	5,299,900	6

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1955

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
MISSISSIPPI SYSTEM Upper Mississippi Basin																
Trempealeau River	....	....	....	....	....	$5,000	....	....	....	....	....	....	....	....	$5,000	0
Black River	....	$1,000	....	....	....	5,000	....	....	....	....	$8,000	....	....	....	14,000	0
La Crosse River	....	....	....	....	$15,000	10,000	....	....	....	....	....	....	....	....	25,000	0
Root River	....	1,000	....	....	....	2,000	....	....	....	....	....	....	....	$3,000	6,000	0
Rock and Fox Rivers	....	....	....	....	....	5,000	$3,000	....	$2,000	$1,000	....	....	....	....	11,000	0
Boone River	$5,000	10,000	....	$7,000	2,000	....	....	....	....	....	....	....	....	....	24,000	0
Total	5,000	12,000	....	7,000	17,000	27,000	3,000	....	2,000	1,000	8,000	....	....	3,000	85,000	0
Missouri Basin																
Milk River	1,500	3,000	$2,000	200	....	....	....	....	....	....	25,000	$100	$100	11,500	43,400	0
Shields River	....	....	....	....	....	....	....	$5,000	10,000	....	5,500	....	....	....	20,500	0
White River and tributaries	....	....	....	....	....	....	....	....	....	....	11,000	....	....	....	11,000	0
North Platte River and tributaries	90,000	60,000	40,000	70,000	175,000	120,000	20,000	6,000	75,000	28,000	263,000	681,000	173,500	....	#1,801,500	1
Solomon River	....	....	....	....	....	....	....	....	B103,400	....	19,300	....	....	....	122,700	0
Kansas River and tributaries	....	....	....	....	....	....	....	....	B12,200	....	200	....	....	....	12,400	0
Blackwater and Lamine Rivers and tributaries	....	....	....	....	....	17,000	....	....	B538,900	....	3,100	....	....	....	#559,000	0
Weir and Peters Creeks (Missouri)	3,500	....	....	....	....	....	....	....	B42,500	....	53,700	....	....	....	#99,700	0
Osage River and tributaries	10,700	....	....	....	500	....	....	....	B66,100	....	5,300	....	....	....	#82,600	0
Total	105,700	63,000	42,000	70,200	175,500	137,000	20,000	11,000	848,100	28,000	386,100	681,100	173,600	11,500	2,752,800	1
Ohio Basin																
Muskingum River	....	....	....	....	....	....	....	....	....	....	....	....	....	150,000	*150,000	0
Hocking River	....	....	....	....	....	....	....	....	....	....	....	....	....	44,000	* 44,000	0
Licking River	....	....	....	....	....	2,000	....	....	....	....	2,500	....	....	....	4,500	0
Kentucky River	124,000	40,000	90,000	20,000	52,000	60,000	78,000	10,000	180,000	85,000	40,000	10,000	9,000	....	#798,000	8
White River	40,000	5,000	20,000	15,000	5,000	25,000	500	1,000	1,000	1,000	....	....	4,000	....	117,500	0
Wabash River	4,000	1,000	1,000	5,000	....	500	....	....	....	....	....	....	3,000	....	14,500	0
Cumberland River	26,000	5,000	309,500	20,000	20,000	258,000	....	300	102,000	....	....	6,000	21,600	....	#768,900	0
Tennessee River and minor tributaries	C17,300	....	D127,200	....	....	1,500	....	4,500	6,100	....	90,000	500	12,500	97,500	357,100	1
Ohio River	799,000	171,200	1,410,400	151,200	2,085,600	1,226,000	44,000	8,100	524,000	372,500	1,087,500	1,473,500	1,295,500	1,741,700	12,390,200	6
Total	1,010,300	222,200	1,958,100	211,200	2,163,100	1,573,000	122,500	23,900	813,100	458,500	1,220,000	1,490,000	1,345,600	2,033,200	14,644,700	15
Arkansas Basin																
Purgatoire River and tributaries	291,600	91,800	89,500	56,000	51,200	246,000	....	1,700	8,000	800	1,260,200	21,000	347,500	....	#2,465,300	1
Chisholm Creek (Kansas)	130,000	50,000	15,000	10,000	7,000	....	....	....	3,000	2,000	10,000	5,000	30,000	....	#262,000	0
Cimarron River and tributaries	....	....	....	....	....	32,000	....	....	....	....	....	1,000	....	5,000	#38,000	0
Canadian River and tributaries	18,000	66,500	15,000	15,000	140,000	150,000	....	25,000	38,000	63,000	245,000	....	45,000	....	#820,500	0
Poteau River	....	....	....	....	15,000	87,000	....	....	....	....	16,000	....	....	....	#118,000	0
Arkansas River and minor tributaries	98,000	65,300	23,000	42,900	16,000	635,300	....	23,200	30,800	17,500	487,300	27,300	181,200	10,000	#1,657,800	1
Total	537,600	273,600	142,500	123,900	229,200	1,150,300	....	49,900	79,800	83,300	2,018,500	54,300	603,700	15,000	5,361,600	2

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1955

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
MISSISSIPPI SYSTEM--CONT. **Red Basin**																
Wichita River	$10,000	$5,000	$5,000	$2,500	$5,000	...	...	...	...	...	$5,000	$5,000	$15,000	...	$52,500	0
Beaver Creek (Texas)	A313,800	...	...	...	...	$517,300	...	...	B242,700	...	453,500	...	163,700	...	1,691,000	0
Little River	...	...	...	...	...	...	...	$600	...	...	...	...	...	...	600	0
Little Missouri, Saline and Ouachita Rivers	...	...	...	...	...	5,000	...	1,000	3,000	$3,500	12,500	...	1,000	...	26,000	0
Red River and minor tributaries	70,000	33,000	6,000	69,000	25,000	6,000	...	2,500	1,500	...	5,000	...	14,500	...	232,500	0
Total	393,800	38,000	11,000	71,500	30,000	528,300	...	4,100	247,200	3,500	476,000	5,000	194,200	...	2,002,600	0
Lower Mississippi Basin																
St. Francis River	...	...	...	...	...	...	...	...	1,000	...	2,500	...	4,000	...	7,500	0
Yazoo and Big Black Rivers	...	...	...	...	...	782,000	...	...	...	...	B535,000	...	...	...	#1,317,000	0
Mississippi River	...	...	...	...	...	...	...	...	5,000	...	10,000	3,000	10,000	...	28,000	0
Total	...	...	...	...	...	782,000	...	...	6,000	...	547,500	3,000	14,000	...	1,352,500	0
WEST GULF OF MEXICO DRAINAGE																
Mermentau, Calcasieu and Sabine Rivers	3,500	...	17,000	...	2,000	1,000	...	...	2,500	500	2,500	...	1,000	...	30,000	2
Brazos River and tributaries	A271,000	...	35,000	6,500	...	868,500	...	...	B594,800	...	235,500	6,500	94,000	...	#2,111,800	0
Colorado River and tributaries	...	...	...	...	15,000	83,100	...	...	B91,600	...	12,100	...	37,900	...	239,700	0
Nueces River and tributaries	15,000	19,000	50,000	100,000	260,000	70,000	15,000	23,700	25,000	34,500	200,000	11,000	14,000	...	837,200	0
Rio Grande	A554,000	150,000	10,000	50,000	139,000	10,000	...	...	30,000	...	51,000	5,000	48,000	$20,000	1,067,000	0
Total	843,500	169,000	112,000	156,500	416,000	1,032,600	15,000	23,700	743,900	35,000	501,100	22,500	194,900	20,000	4,285,700	2
GULF OF CALIFORNIA DRAINAGE Colorado Basin																
Las Vegas Wash	C250,000	...	D550,000	...	30,000	...	...	...	...	...	330,000	120,000	220,000	...	#1,500,000	0
Colorado River and tributaries	...	700	...	1,400	90,000	100,000	...	24,500	...	...	452,000	...	4,000	...	672,600	0
Total	250,000	700	550,000	1,400	120,000	100,000	...	24,500	...	...	782,000	120,000	224,000	...	2,172,600	0
GREAT BASIN																
Weber River	C3,000	...	D18,000	...	...	...	...	...	B6,000	...	E33,000	...	...	10,000	*70,000	0
Truckee River	C55,000	...	D430,000	...	732,000	...	...	...	B496,000	...	E313,000	...	...	800,000	*2,826,000	0
Carson River	...	...	...	...	807,000	...	...	...	B671,000	...	E8,000	...	...	600,000	*2,086,000	0
Walker River	...	...	...	...	244,000	...	...	...	B231,000	...	E5,000	...	...	210,000	*690,000	0
Owens River and Mono Basin	...	...	...	...	...	...	...	...	B5,000	...	E188,900	...	...	80,000	*273,900	0
Total	58,000	...	448,000	...	1,783,000	...	...	...	1,409,000	...	547,900	...	...	1,700,000	5,945,900	0
PACIFIC SLOPE DRAINAGE Coastal Drainage																
Coastal streams between Santa Barbara and Gaviota, Calif.	400	...	...	...	2,600	4,000	1,000	...	72,500	10,000	33,000	45,000	...	...	168,500	0
Minor coastal streams near Monterey and San Francisco Bay Area	C3,099,800	...	D3,296,500	...	...	...	...	...	B3,283,300	...	2,123,900	...	728,500	1,240,200	*13,772,200	1
Russian River and tributaries	C864,300	...	D1,411,500	...	...	...	...	...	B830,400	...	55,000	767,700	427,600	660,700	5,017,200	1
Eel, Mad, Klamath and Smith Rivers and Redwood Creek (California)	C3,705,500	...	D9,563,600	...	26,300	...	...	...	B4,438,200	...	11,301,000	1,093,400	2,562,000	2,381,300	#35,071,300	9

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1955

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
PACIFIC SLOPE DRAINAGE--CONT. Coastal Drainage--Cont.																
Rogue River	$425,100	$250,000	$360,000	$230,900	$24,700	$199,800	...	$27,700	$717,100	...	$523,500	...	$881,600	$408,100	# $4,048,500	0
Coquille River	18,200	21,300	10,100	43,300	25,100	412,200	...	320,200	160,400	...	569,100	...	959,800	37,100	*2,596,800	0
Umpqua River	79,800	46,800	69,600	175,400	18,500	92,800	...	46,800	362,300	...	328,500	...	753,600	169,000	*2,143,100	1
Minor coastal streams in Oregon	9,000	3,800	7,700	5,000	1,200	107,500	...	31,100	60,900	...	39,200	...	205,000	69,800	540,200	2
Total	8,202,100	321,900	14,719,000	454,600	98,400	816,300	$1,000	425,800	9,925,100	$10,000	14,973,200	$1,906,100	6,518,100	4,986,200	63,357,800	14
Monterey Bay																
Salinas River and tributaries	...	...	...	...	29,900	...	...	...	B10,000	...	96,500	...	...	...	*136,400	0
Pajaro River and tributaries	C251,000	...	D50,500	...	...	...	...	...	B1,279,000	...	270,200	...	647,700	763,100	3,261,500	0
San Lorenzo River and tributaries	C1,291,700	...	D5,549,900	...	...	...	...	...	B159,800	...	280,800	...	232,400	1,186,300	*8,700,900	7
Total	1,542,700	...	5,600,400	...	29,900	...	...	...	1,448,800	...	647,500	...	880,100	1,949,400	12,098,800	7
San Pablo Bay																
Napa River and tributaries	C48,500	...	D101,100	...	1,200	...	...	...	B172,300	...	136,800	19,500	...	62,600	542,000	0
Total	48,500	...	101,100	...	1,200	...	...	...	172,300	...	136,800	19,500	...	62,600	542,000	0
Tulare Lake Basin																
Kern River	...	...	...	...	36,000	...	...	...	...	...	...	...	...	...	36,000	0
Tulare Lake	C3,765,000	...	1,736,000	...	4,194,000	...	...	...	B5,859,000	...	E1,055,000	...	...	...	*16,609,000	0
Total	3,765,000	...	D1,736,000	...	4,230,000	...	...	...	5,859,000	...	E1,055,000	...	...	...	16,645,000	0
San Joaquin Basin																
San Joaquin River and tributaries	C3,496,000	...	D711,000	...	4,633,000	...	...	...	B6,414,000	...	E860,000	...	...	...	*16,114,000	0
Total	3,496,000	...	711,000	...	4,633,000	...	...	...	6,414,000	...	860,000	...	...	...	16,114,000	0
Sacramento Basin																
Yuba River	C50,000	...	D103,000	...	2,189,000	...	...	...	B386,000	...	E392,000	...	...	...	*3,120,000	0
Bear River	C19,000	...	D33,000	...	464,000	...	...	...	B1,126,000	...	E335,000	...	...	...	*1,977,000	0
Feather River	C10,929,000	...	D2,974,000	...	12,846,000	...	...	...	B20,946,000	...	E3,850,000	...	...	...	*51,545,000	40
American River	C106,000	...	D2,000	...	287,000	...	...	...	...	...	E413,000	...	...	...	*808,000	0
Sacramento River and tributaries	C281,000	...	D97,000	...	4,227,000	...	...	...	B3,776,000	...	E179,000	...	...	...	*8,560,000	0
Total	11,385,000	...	3,209,000	...	20,013,000	...	...	...	26,234,000	...	5,169,000	...	...	...	66,010,000	40
Columbia Basin																
Kootenai River	1,000	1,500	...	...	20,500	75,000	...	2,000	500	1,000	5,000	...	21,000	...	#127,500	0
Payette River	...	...	1,000	...	...	11,000	9,000	1,400	26,400	6,300	105,000	...	13,400	...	#173,500	0
Weiser River	5,600	1,900	5,000	3,000	1,300	26,500	1,900	300	41,100	1,000	180,300	7,300	9,800	...	#285,000	0
Little Salmon River	...	...	...	...	...	1,000	2,500	1,000	71,000	1,500	604,000	...	4,500	...	#685,500	0
Snake River and minor tributaries	5,000	...	...	...	...	1,000	...	...	500	...	...	...	...	60,000	#66,500	0
Willamette River and tributaries	206,000	55,200	128,900	110,600	136,200	2,909,400	...	68,100	1,774,900	...	E1,965,000	...	1,782,700	377,600	#9,514,600	2
Total	217,600	58,600	134,900	113,600	158,000	3,023,900	13,400	72,800	1,914,400	9,800	2,859,300	7,300	1,831,400	437,600	10,852,600	2

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1955

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
PACIFIC SLOPE DRAINAGE--CONT. **Puget Sound**																
Skagit and Snohomish Rivers	....	....	....	$7,500	....	....	....	....	....	....	$150,000	....	$7,500	$1,000,000	$1,165,000	0
Total	....	....	....	7,500	....	....	....	....	....	....	150,000	....	7,500	1,000,000	1,165,000	0
Grand Total	$34,136,000	$1,230,000	$409,201,900	2,347,000	$38,953,600	$10,101,500	$224,900	$823,000	$65,746,900	$681,600	146,334,100	$21,587,400	13,219,700	250,901,900	995,489,500	302

- # Coordinated with U.S. Engineers
- * U.S. Engineers figures
- ** Coordinated with Tennessee Valley Authority
- A Includes all urban property
- B Includes all rural property
- C Includes all residential property
- D Includes all commercial property
- E Includes public utilities

COLUMBIA RIVER BASIN FLOOD

MAY-JUNE 1956

INTRODUCTION

The spring flood of 1956 in the Columbia River Basin produced record-breaking stages and record-peak flows in some of the tributary streams in Idaho and Oregon. Along the main stem of the Columbia, the second highest stage of record was reached at Vancouver, Wash.

A comparison of this year's flood on the Kootenai River with the floods of 1948 and 1954 are interesting. This year, as in 1948, the river at Bonners Ferry, Idaho, remained above flood stage for 21 days, while in 1954, when it reached a crest of 35.55 feet, it remained above flood stage for 10 days. The crest of 37.09 feet this season exceeded the previous record crest of 35.55 feet reached in 1954 by 1.54 feet and the crest of 35.32 feet reached in 1948 by 1.77 feet. However, the discharge in 1948 was greater than in either 1954 or 1956. This year, about two-thirds of the Kootenai Valley was inundated as compared to the entire valley of 30,000 acres in 1948 and 8,000 acres in 1954. The difference in area flooded is due in part to the dikes being strengthened since the 1948 flood. Another reason may be that in 1948 strong winds set up high waves that pounded many dikes to the breaking point.

Several streams in the upper basin had peak flows that exceeded the flows in the great flood of 1948. The Salmon River at White Bird, Idaho, reached a peak flow of 106,000 c.f.s. on May 24 which was the highest flow reached in 37 years of record. Other record-peak flows occurred in the upper Grande Ronde and John Day Basins in Oregon, and in the Payette, Boise, and Big Wood Basins in central Idaho. The flow in the Snake River at Clarkston, Wash., reached a peak flow of 293,400 c.f.s. on May 24, the second highest peak flow in 41 years of record.

Description of Basin

A detailed description of the Columbia River Basin including topographic and climatological features may be found in Monthly Weather Review, Vol. 77, January 1949, pages 1-2, Columbia River Basin Flood, May-June 1948.

Flood History

Some flooding occurs in the lowlands adjacent to the Columbia River and its important tributaries every year, but the frequency of extreme floods, such as the one of 1894, 1948 and 1956, is quite low since a combination of several factors is necessary to produce a general flood of an extreme nature, such as:

1. Abnormally high accumulation of snow in the basin. This results from excessive precipitation plus abnormally low temperatures.

2. A period of excessively high spring temperatures over the entire basin.

3. Heavy rains coincident with high temperatures over the entire basin.

This combination of events must develop in sequence over a period of about 6 months.

Normally, snowmelt begins first in the southern portion of the basin (Snake), progressing slowly northward with the runoff from southern tributaries passing out to sea before the arrival of the upper Columbia crest. If melting takes place simultaneously over the entire basin the total runoff will be increased enormously. If heavy rains occur at the same time, the possibilities of a major flood will be almost a certainty.

A comparison of the 1956 flood crests with those of 1948 and other notable floods are given in table 2.

1956 Flood-potential Build-up

Spring floods in the Columbia Basin come primarily from snowmelt. The flood potential develops as the precipitation accumulates in the snowpack. Rarely are winter temperatures high enough to significantly deplete the snowpack during the snow accumulation period. Thus, in the normal course of keeping inventory of precipitation for water supply forecasting purposes, a dangerous accumulation can be recognized well in advance of the flood season.

Such a period was the winter of 1955-56. October brought heavy rains to much of the basin, and the permanent snowpack began to accumulate at higher elevations near the close of the month. In November, storms were even more widespread, and practically the entire basin had much above normal precipitation. Sizeable areas with normally heavy precipitation received twice their average amount.

The west coast will long remember the weather of December 1955. Following a generally wet first half-month, torrential rains fell over central and northern California and western Oregon in the week preceding Christmas. The resultant winter rainfall-runoff floods were the greatest of record at many points, particularly in northwestern California.[1/] During this week the flow of warm moist air also extended over all but the northern portion of the Columbia Basin, causing unusual winter floods in the normally cold interior area. Rain and low elevation snowmelt in the tributary basins of the middle and lower Snake were the principal contributors to the second largest winter discharge of record in the lower Columbia at The Dalles, Oreg.

In terms of spring flood potential, however, this unusual winter runoff was overshadowed by the much greater portion of the heavy precipitation which was retained at middle and higher elevations. Runoff from the Canadian portion of the basin was negligible. December precipitation was more than twice the average for the basin as a whole, and individual station amounts ranged up to five times average.

The first Weather Bureau Water Supply Forecasts are issued as of January 1. These forecasts of seasonal runoff volume are computed from procedures based on mathematical analysis of the relation between accumulated precipitation and runoff. Figure 2 shows precipitation in percent of the 15-year average (1938-52) for the October through December 1955 period. In order to prepare a forecast, some assumed value of precipitation for the period January through June must be added to that indicated by figure 2. The primary runoff forecasts assume precipitation for the remainder of the season will be equal to the median of record. With this assumption, the January 1, 1956, forecast called for 124 percent of the 15-year average (1938-52) runoff for the basin as a whole (at The Dalles, Oreg.).[2/] In some tributary basins 150 percent of average runoff was expected with only normal subsequent precipitation.

High seasonal volume generally indicates a high peak flow. This relationship, an example of which is shown in figure 3, will be discussed further, but it shows why the January 1 forecast carried the following warning: "If the present trend of excessive precipitation continues, high flows of damaging proportions will occur at vulnerable points in the Columbia Basin this spring".

The general weather pattern did not change much in January with even a repetition of floods in California and Oregon. Again precipitation was well above average over most of the basin, and twice average over sizeable areas. This precipitation was reflected in the February 1 basin forecast of runoff which was increased to 130 percent of average at The Dalles, Oreg., for the February through September period. The general flood warning was reiterated. Figure 6 shows the seasonal accumulation of precipitation in the snowpack through January.

February brought some respite with only about average precipitation for the basin as a whole. Areas with above average amounts about balanced the subnormal areas so that the overall water supply picture changed little during the month. Temperatures were much below normal and allowed practically no melting. It was evident that flooding would be inevitable at some points, and highly probable at many others. The volume of snow in some basins was already so large that even without any further precipitation streams would be unable to carry safely the warm weather runoff. On March 1, forecasts of probable crest stage were issued for some 30 key points in the basin, all based on relations similar to that of figure 3. The scatter of points about the regression line indicates the effect of temperature and precipitation during the runoff period. Although these cannot be predicted several months in advance, it is possible to forecast the most likely range of crest stage or discharge. Thus, the March 1 forecast for the lower Columbia River at Vancouver, Wash., called for 50 percent probability of a crest between 25 and 28 feet, or 10 to 13 feet above flood stage.

During March, precipitation was generally below average in the southern half of the basin, but well above average in the northern section which contributes nearly two-thirds of the seasonal runoff. While flood potential was thus lowered slightly in some of the southern tributaries, it was increased in the lower Columbia and northern tributaries. Figure 4 shows precipitation in percent of average for the entire October through March period, while figure 5 portrays essentially the same picture in terms of April 1 snowwater depth. On April 1 the basin forecast was for an April through September flow of 134 million acre-feet, or 138 percent of average. The forecast of probable crest stage at Vancouver was raised to 25.5 to 28.5 feet. Forecasts called for probable flooding on a majority of the principal tributaries in the basin.

Thus, the beginning of the flood runoff period was reached with a flood potential recognized as the greatest in this century.

The Flood Period

Smaller low-elevation basins frequently have their peak snowmelt runoff in late March or April, but most streams experience their peak runoff in late May or June, depending of course on temperature conditions. At the gaging station at The Dalles, Oreg., which integrates all the flow originating east of the Cascades, June 10 is the median date of peak. Past crests have occurred as early as May 2 and as late as July 1, with 94 percent of past crests experienced after May 15.

April 1 to May 15 is a period antecedent to the main rise during which either some further accumulation of precipitation occurs or slight warming causes preliminary rises from melting of low-elevation snow and prepares the main snowpack for maximum rate of runoff when later high temperatures occur. Early rises remove some snow and tend to reduce the probability of extremely high peaks later in the season.

In 1956 this antecedent period was characterized by above average April temperatures and by below average precipitation except along the Continental Divide south from Missoula, Mont. Most low-elevation streams experienced snowmelt rises about April 23 with flood stage being exceeded at various points, including Columbia River at Vancouver, Wash.

During April the natural flow volume at the Dalles, Oreg., was the third highest of record, exceeded only in 1879 and 1881[3/] and the crest stage at Vancouver set a new record for April. Rivers receded as a result of cool weather during the first half of May but remained at relatively high levels. Some moderate amounts of precipitation, especially in the southern portion of the basin, helped to maintain flows.

The net effect of this April 1 - May 15 antecedent period was to reduce the 1956 flood potential because of large early runoff and generally below average precipitation. However, on May 15 the remaining flood potential was great enough that under extreme conditions the peak flow at The Dalles would have exceeded that in 1948 (second highest of 1878-1955 record).

To compare the march of temperature during the 1948 and 1956 snowmelt seasons, the snowmelt index for Clearwater River at Spalding, Idaho, is shown in figure 7. The snowmelt index is computed by weighting surface temperatures of previous days so that variations in the index will parallel the flow hydrograph at Spalding, Idaho. As this basin is located in the center of the Columbia drainage, this index is an approximate indicator of the temperature over the entire drainage.

During the antecedent period the temperatures were consistently higher than in 1948, producing the large early melt discussed above. Starting about May 15, the 1956 temperatures rose rapidly until May 19 and remained above average until June 4. Some cooling occurred after May 24-25, but temperatures were still approximately 5° above average.

The resulting dip in snowmelt index was reflected in streamflow. Most streams peaked about May 23-24 and receded slightly with another peak about June 1-2, coinciding with the second peak in index. In most basins the crests resulting from snowmelt occurred either about May 24 or June 2. The May 24 crest in the upstream tributary basins of the Columbia arrived in the lower river to coincide with the June 2 crest from the downstream basins, and produced the seasonal crest of the Columbia River at The Dalles on June 2. Farther downstream, the crest reached Vancouver June 4-5.

In 1956 the rate of flow due to snowmelt was not augmented by large amounts of rainfall runoff as prior to the May 31 peak in 1948. Table 1 shows that in the upper Columbia and Cascade area (Spokane, Wash.; Ellensburg, Wash.; and Missoula, Mont.), substantial amounts of precipitation fell in 1948 and contributed to runoff at the time of the peak. The Methow River at Twisp, Wash., illustrates the great effect precipitation had on 1948 crests. A peak flow of 41,000 c.f.s. in 1948 resulted from April-September volume of 1,127,000 acre-feet; in 1956, with approximately equal volume, the peak flow was only about 15,000 c.f.s. In both 1956 and 1894 generally only minor amounts of precipitation were recorded. The only precipitation of consequence which fell close to the time of crest was in eastern Oregon and southern Idaho on May 24 and May 27. Table 1 shows this precipitation at Baker, Oreg.

Although the total flood volume in 1956 approached or exceeded that in 1948 in most basins, the observed flood peaks generally were lower except for Kootenai outflow in the upper Columbia and at numerous stations in the Snake drainage (table 2). This discrepancy between volumes and crests in these years is mainly due to two causes: (1) the excessive precipitation just prior to the peak over the entire Columbia Basin above the Snake in 1948, and (2) the high temperatures which occurred during the antecedent period April 1 - May 15 in 1956.

At Bonners Ferry, Idaho, where there is a critical flood problem, the Kootenai River established a new crest (37.09 feet) on May 24, 1956, despite lower flows upstream at Libby, Mont., than in 1948 and 1916. Most dikes at and below Bonners Ferry, which were raised since 1948, held and resulted in a higher stage for less discharge. Figures 8 and 9 show discharge and stage hydrographs for these and other points for the floods of 1894, 1948, and 1956.

Early forecasts of high flood crests made it advisable and possible to attempt greater than average flood regulation at Grand Coulee Dam (Franklin D. Roosevelt Lake). In April, after special engineering and power studies by U.S. Bureau of Reclamation, U.S. Corps of Engineers, and Bonneville Power Administration, it was decided to use 38 outlets in the dam which were not designed for use in flood control regulation. Because of this increased outlet capacity it was deemed advisable to lower the lake 24 feet more than in past years. The net reduction in the peak flow of the Columbia River at The Dalles due to regulation by Grand Coulee Dam was 43,000 c.f.s. or 1.4 feet of stage at Vancouver, Wash.

Hungry Horse Reservoir in Montana was operated according to the established flood control rule curve and reduced the peak flow at Columbia Falls by 31,000 c.f.s.,[4] holding flow below major damage stage at that point. The effect of this operation also contributed to flood control downstream.

Although new record flows were experienced in the upper Snake, Boise, and Payette Basins, the flows were materially reduced by special flood control operation of irrigation reservoirs. Among the strictly irrigation reservoirs which were operated for flood control were Jackson Lake, American Falls, Anderson Ranch, Arrowrock, Cascade, Deadwood, and 5 Yakima Basin reservoirs. Flood control operation of these reservoirs was possible this year because volume forecasts assured a water supply in excess of the irrigation use.

The flood crest of the Willamette River at Portland, Oreg., from backwater of the Columbia was reduced from 28.8 feet to 26.4 feet by all reservoirs operated for flood control. The observed crest, which was the fourth highest peak of record (record 1876-1956), would under natural conditions have been the third highest of record, exceeded only by 1894 and 1948.

It has been estimated that $37,209,000 damage was prevented by regulation in all reservoirs operated for flood control. Calculated damages of $53,950,000 under natural flow conditions were reduced to $15,741,000 actual estimated damages[4].

TABLE 1

		May						June	
		1-5	6-10	11-15	16-20	21-25	26-31	1-5	6-10
Station	Year	Five-Day Precipitation (Inches)							
SPOKANE, WASH.	1894	0.15	0.02	0.47	0.19	0.00	0.19	0.08	0.00
	1948	0.85	0.93	0.49	0.35	2.00	1.09	0.39	0.13
	1956	0.14	0.32	0.00	0.00	0.08	0.05	0.20	0.01
MISSOULA, MONT.	1894	0.03	0.00	0.39	0.33	0.68	0.00	0.25	0.45
	1948	T	1.69	0.53	1.09	0.22	0.57	1.19	0.36
	1956	0.16	0.14	T	0.00	0.27	0.09	1.00	0.10
BAKER (CAA), OREG.	1894	0.10	0.00	1.01	0.64	0.35	0.07	0.73	0.31
	1948	0.37	0.32	0.07	0.53	0.45	0.60	0.21	0.76
	1956	1.12	0.97	0.10	0.00	0.48	0.95	0.14	0.15
ELLENSBURG, WASH.	1894	0.00	0.00	0.15	0.31	T	0.00	- missing	
	1948	0.49	0.14	0.06	0.80	0.04	1.56	0.01	0.20
	1956	0.14	0.40	0.00	0.31	0.10	0.10	0.15	0.12

[1] Climatological Data, National Summary, Vol. 6, No. 12, Dec. 1955, pp. 416-424.

[2] Water Supply Forecasts For the Western United States, Vol. 8, No. 1-5, January-May 1956.

[3] Pacific Northwest Water Resources Summary, April 1956, U.S. Geological Survey.

[4] Report on Columbia River Flood Control Operations, 1956 Flood, September 3, 1956, Water Management Subcommittee, Columbia Basin Inter-Agency Committee.

TABLE 2

COMPARISON OF 1956 SPRING CRESTS WITH THOSE IN 1948 AND OTHER NOTABLE CRESTS

Stream and Station	Flood Stage (Feet)	1956 Crest Stage (Feet)	1956 Crest Date	Notable Previous Flood Crests Stage (Feet)	Notable Previous Flood Crests Date
Kootenai: Libby, Mont.	16	18.63	5/23/56	20.7	6/21/16
				19.9	5/28/48
Bonners Ferry, Idaho	31	37.09	5/24/56	35.55	5/23/54
				35.3	5/27/48
Flathead: Columbia Falls, Mont.[2]	14	15.34	5/21/56	22.7[3]	6/1894
				19.08	5/23/48
Clark Fork: St. Regis, Mont.	19	18.98	5/24/56	19.96	5/24/48
				19.1	5/30-31/13
St. Joe: St. Maries, Idaho	38	37.8	4/23/56	40.87	12/23/33
				39.2	5/30/48
Coeur d'Alene: Cataldo, Idaho	43	43.8	4/23/56	48.0	12/22/33
				42.6	5/25/48
Spokane: Spokane, Wash.	27	27.95	4/27/56	29.9[4]	5/31/94
				29.75	12/26/33
				28.35	5/31/48
Okanogan: Tonasket (nr), Wash.	14.8[1]	17.36	5/26/56	21.79	5/31/48
Methow: Twisp, Wash.	8[1]	8.23	5/21/56	12.94	5/29/48
Wenatchee: Peshastin, Wash.	12.8[1]	13.20	5/21/56	15.88	5/28/48
Snake: Heise (nr), Idaho[2]	7.5[1]	9.2	6/4-6/56	16.0[4]	5/19/27
				9.04	6/4/48
Weiser, Idaho[2]	14	11.4	6/6/56	15.7	3/3/10
				10.51	6/4/48
Lewiston, Idaho[2]	22	19.4	5/25/56	26.0	6/6/94
				22.8	5/29/48
Payette: Emmett, Idaho[2]	9[1]	10.47	5/27/56	12.90	5/1/38
Salmon: Whitebird, Idaho	32.5[1]	33.05	5/24/56	37.5	6/18/94
				32.95	6/3/48
Clearwater: Spalding, Idaho	18[1]	19.64	5/21/56	23.76	5/29/48
Columbia: Birchbank, B.C.	-	47.20	6/7/56	50.62	6/11/48
Trinidad, Wash.[2]	-	54.2	6/8/56	61.0[3]	6/7/94
				59.35	6/12/48
Umatilla, Oreg.[2]	25	26.3	6/2/56	34.5	6/5/94
				30.5	5/30-31/48
Celilo, Oreg.[2]	-	30.10	6/2/56	40.1	6/6/94
				34.56	5/31/48
The Dalles, Oreg.[2]	51	50.4	6/3/56	59.4	6/6/94
				51.8	5/31/48
				33.4[3]	6/7/94

TABLE 2 (Cont'd.)

COMPARISON OF 1956 SPRING CRESTS
WITH THOSE IN 1948 AND OTHER NOTABLE CRESTS

Stream and Station	Flood Stage (Feet)	1956 Crest Stage (Feet)	1956 Crest Date	Notable Previous Flood Crests Stage (Feet)	Notable Previous Flood Crests Date
Columbia: Vancouver, Wash.[2]	15	26.8	6/4-5/56	30.2	6/1,13,14/48
Willamette: Portland, Oreg.[2]	18	26.4	6/4-5/56	33.0 30.0	6/7/94 6/14/48

1/ Bankful as determined by U. S. Corps of Engineers.
2/ Affected by reservoir operation specifically for flood control in 1956.
3/ High water mark.
4/ Estimated.

Flood Damages

Flood damages ($15,741,000) during the spring flood of 1956 were comparatively small in comparison to losses sustained during the flood of 1948 (second largest). In that year the losses exceeded 100 million dollars with the loss of more than a score of lives. The loss of lives in this flood totaled two.

Most of the damage in 1956 was to crops and dairies on farmland behind low or intermediate height dikes. In the Kootenai Valley in northern Idaho, 20,000 acres out of a total of 30,000 acres were flooded. This valley has been subject to overflow for ages, but within recent years it has been diked up in some 20 reclamation districts to withstand a river stage of about 37 feet. In the lower Columbia Basin another 30,000 acres of farmland were inundated with a loss of over 5 million dollars in growing crops and livestock.

Several highways in the flood area were damaged. Many of them to the extent that some filling and complete resurfacing in many stretches were required for restoration. The Great Northern Railroad was unable to operate their trains for 3 days and the Spokane International Railroad for 5 weeks in the Kootenai Valley.

High water in the lower Columbia and Willamette Rivers caused some curtailment to activities in the dock area, shipping and manufacturing, and necessitated removal of cargo and freight stored on low and intermediate docks. Sand bagging of low spots on Harbor Drive in Portland on Highway 99 at Kalama, Wash., and vicinity was necessary. There was also considerable sand bagging in the industrial area between Portland and Vancouver and in the industrial areas in and upstream from Vancouver. In some instances, work was entirely halted. During the time the Columbia at Vancouver was about 25 feet, river traffic was compelled to slow travel to 5 miles per hour. This required two river pilots on each ship both on incoming and outgoing traffic instead of the usual one pilot.

Many dairymen and stockmen in the low areas moved their stock outside the flood plain. Where beef cattle seemed to be in any danger, they were all removed from the area. Dairymen having barns or milking parlors with high floors (high enough to withstand 27.5- or 28-foot floods) in many instances, confined their milk cows in the barn for the duration of the flood. Other owners made arrangements with dairymen outside the area to feed or board their cattle for the milk. This was rather costly but provided protection for the dairy herd.

The reported savings resulting from the flood forecasting and warning service was more than $15,000,000. The first warning of impending high flows of damaging proportions to be expected during the late spring and early summer of 1956 was given in the Water Supply Forecast Bulletin for Western United States issued January 1, 1956.

ESTIMATED FLOOD LOSSES FOR May-June 1956

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	#Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
COLUMBIA BASIN																
Kootenai	2,800	1,700			15,000	1,600,000	16,000		101,500	10,750	2,545,000	19,000	1,490,000		5,801,750	0
Henry's Fork (Idaho)														30,000	30,000	0
Salmon	*29,600										112,000		21,400		163,000	0
Clearwater	18,200					80,200									98,400	0
Lost River (Idaho)											4,350				4,350	2
Wood River														219,000	219,000	0
Snake						37,500					205,000				242,500	0
Columbia[1]			267,000		535,000	4,700,000		535,000	535,000		375,000		2,235,000		9,382,000	0
Total:	50,600	1,700	267,000		550,000	6,417,700	16,000	535,000	636,500	10,750	3,241,350	19,000	3,746,400	249,000	#15,741,000	0

# Cordinated with Columbia Basin Inter-Agency Committee.
* Includes Red Cross estimates of expenditures for relief.
1/ Includes small area at and below The Dalles in the Bonneville Poll, Lower Columbia below Bonneville and Willamette below Oregon City

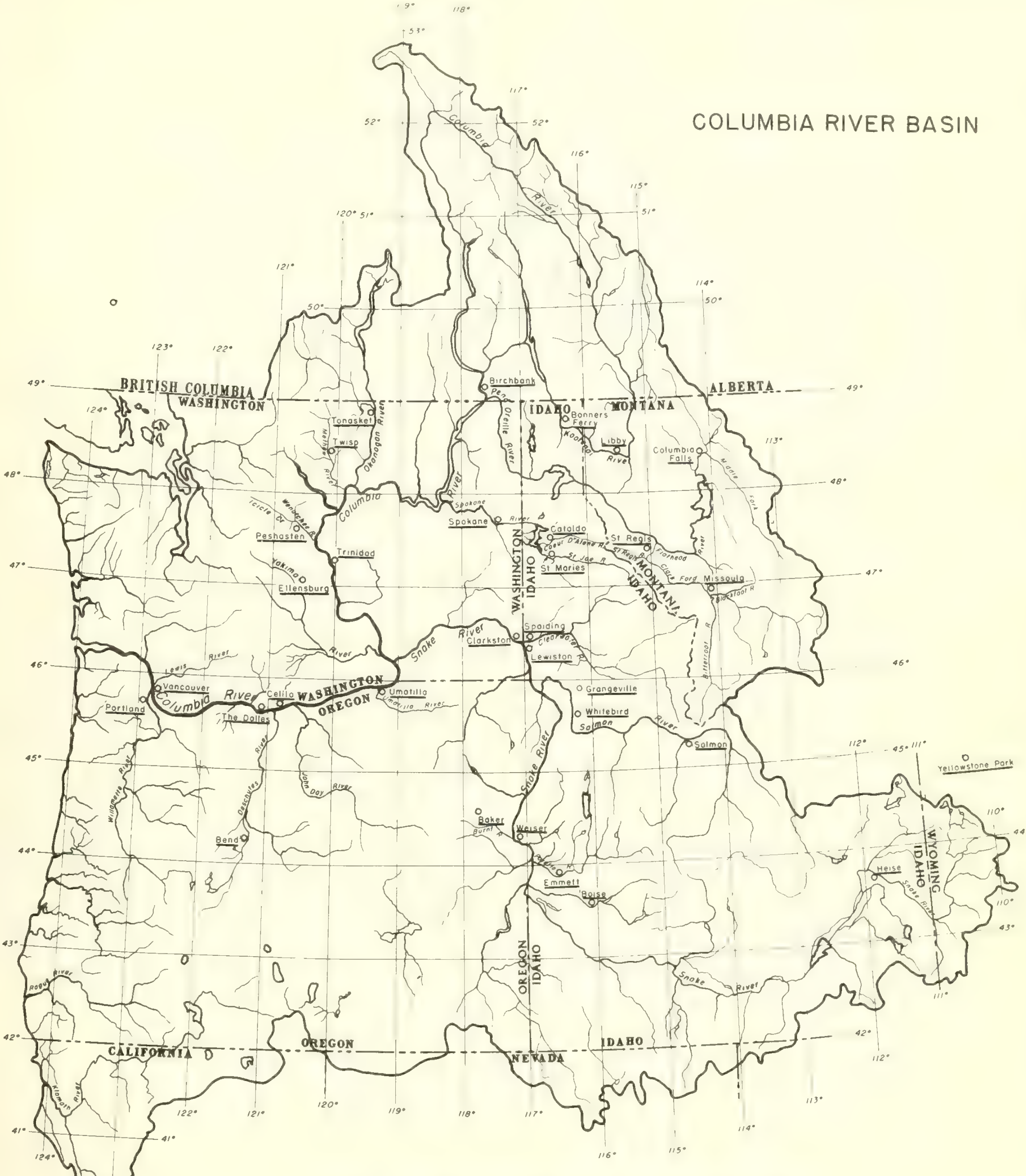


FIGURE I. MAP SHOWING SELECTED STATIONS IN THE COLUMBIA BASIN.

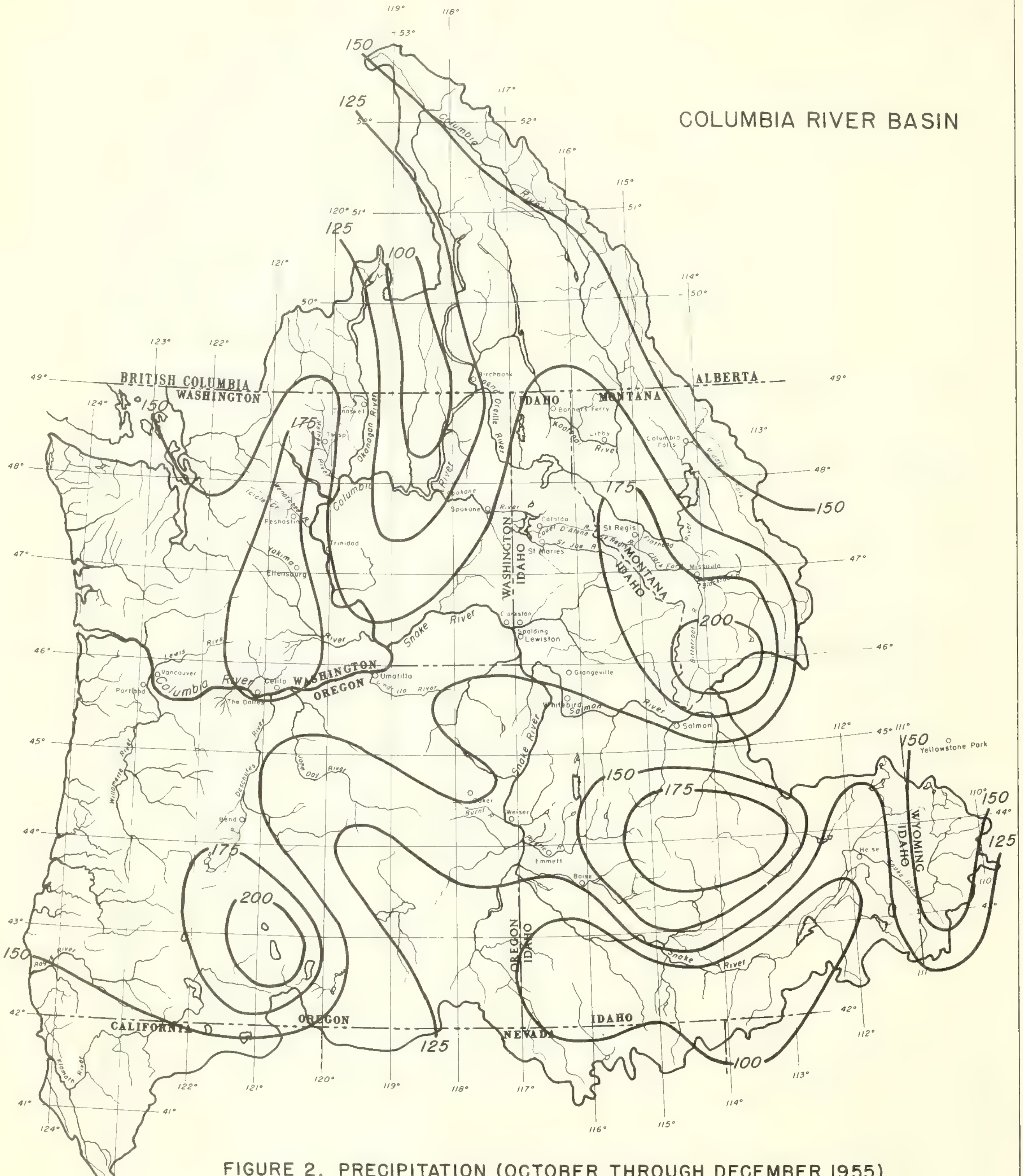


FIGURE 2. PRECIPITATION (OCTOBER THROUGH DECEMBER 1955) IN PERCENT OF THE 1938-52 AVERAGE.

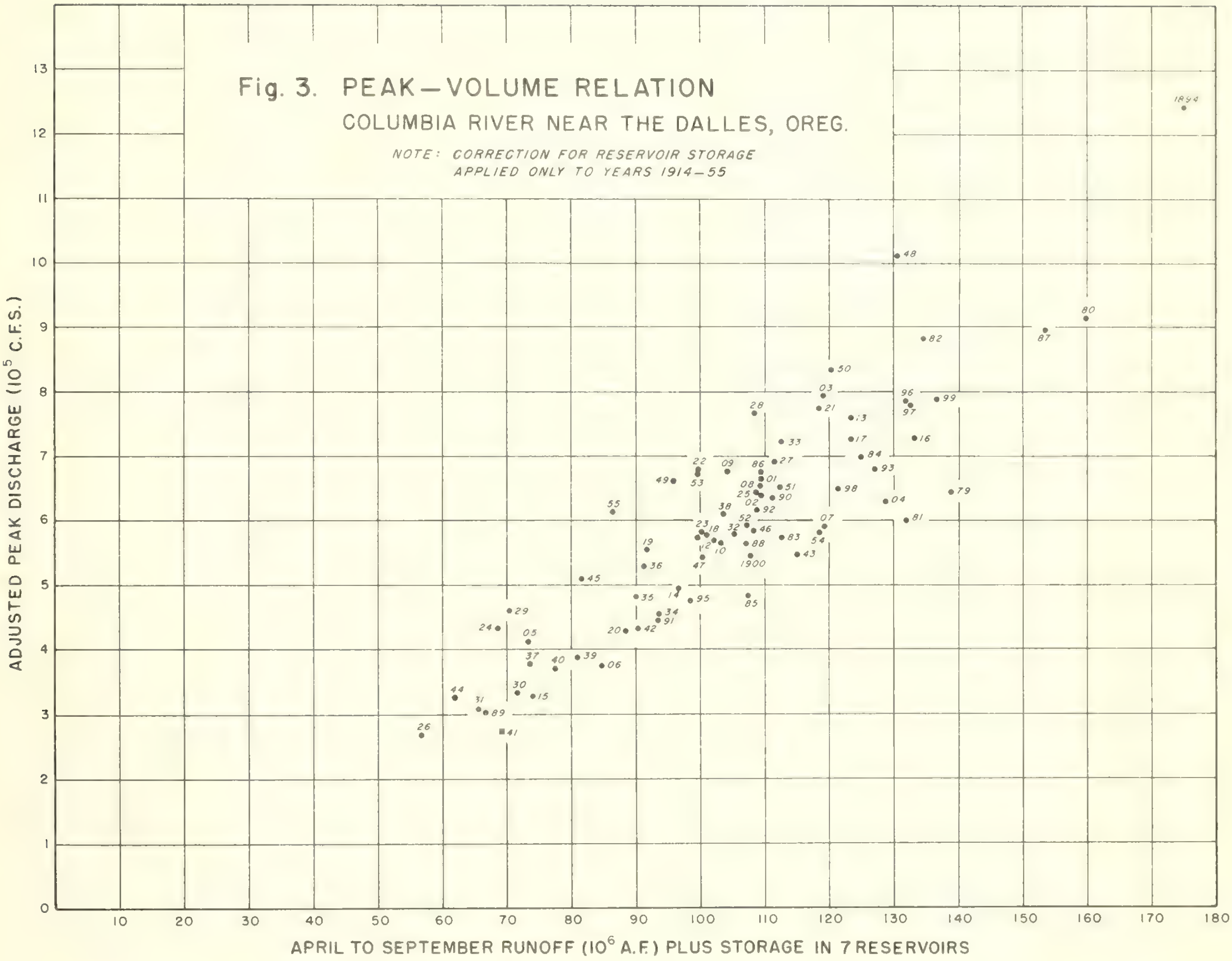


Fig. 3. PEAK—VOLUME RELATION

COLUMBIA RIVER NEAR THE DALLES, OREG.

NOTE: CORRECTION FOR RESERVOIR STORAGE APPLIED ONLY TO YEARS 1914—55

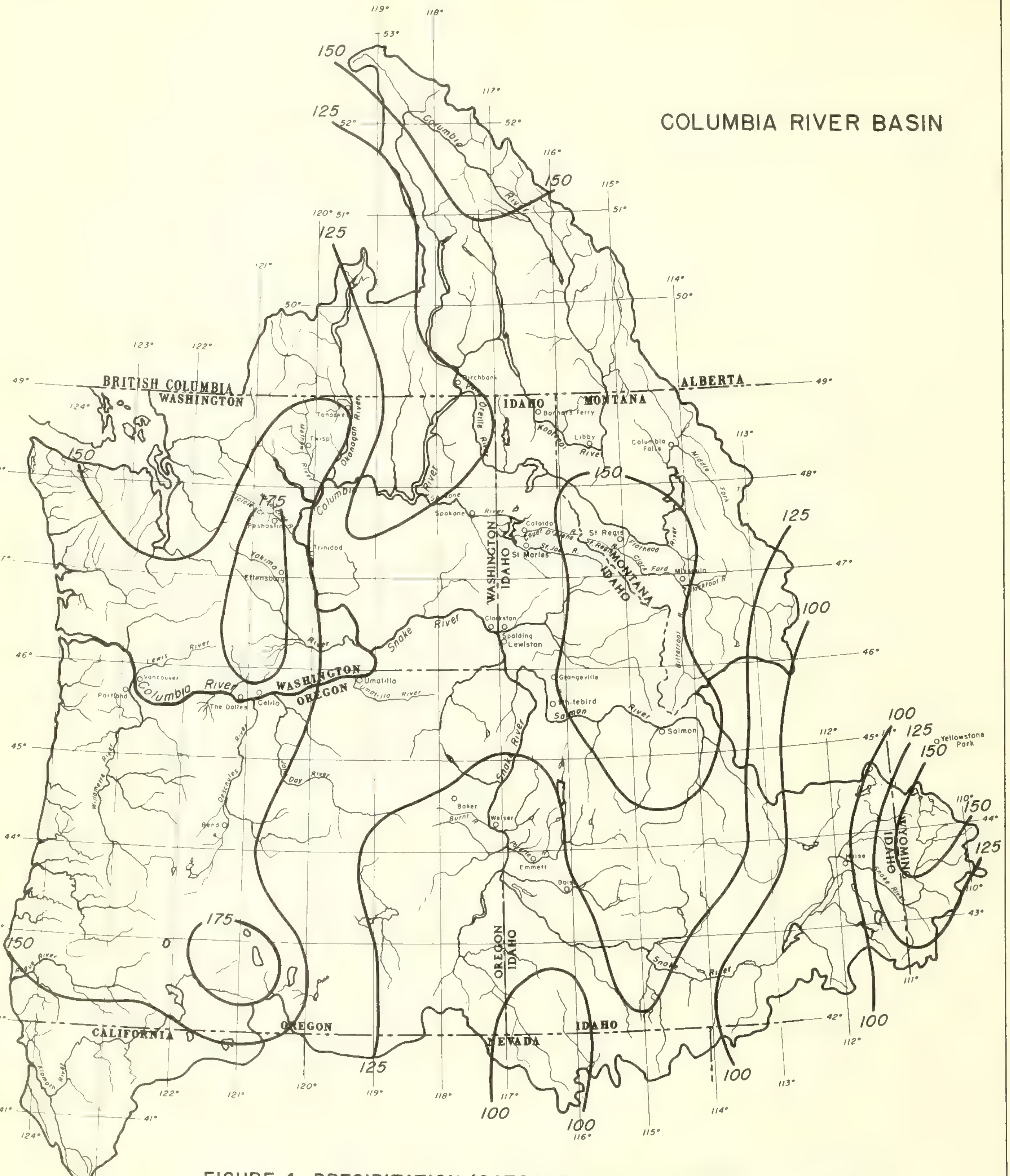
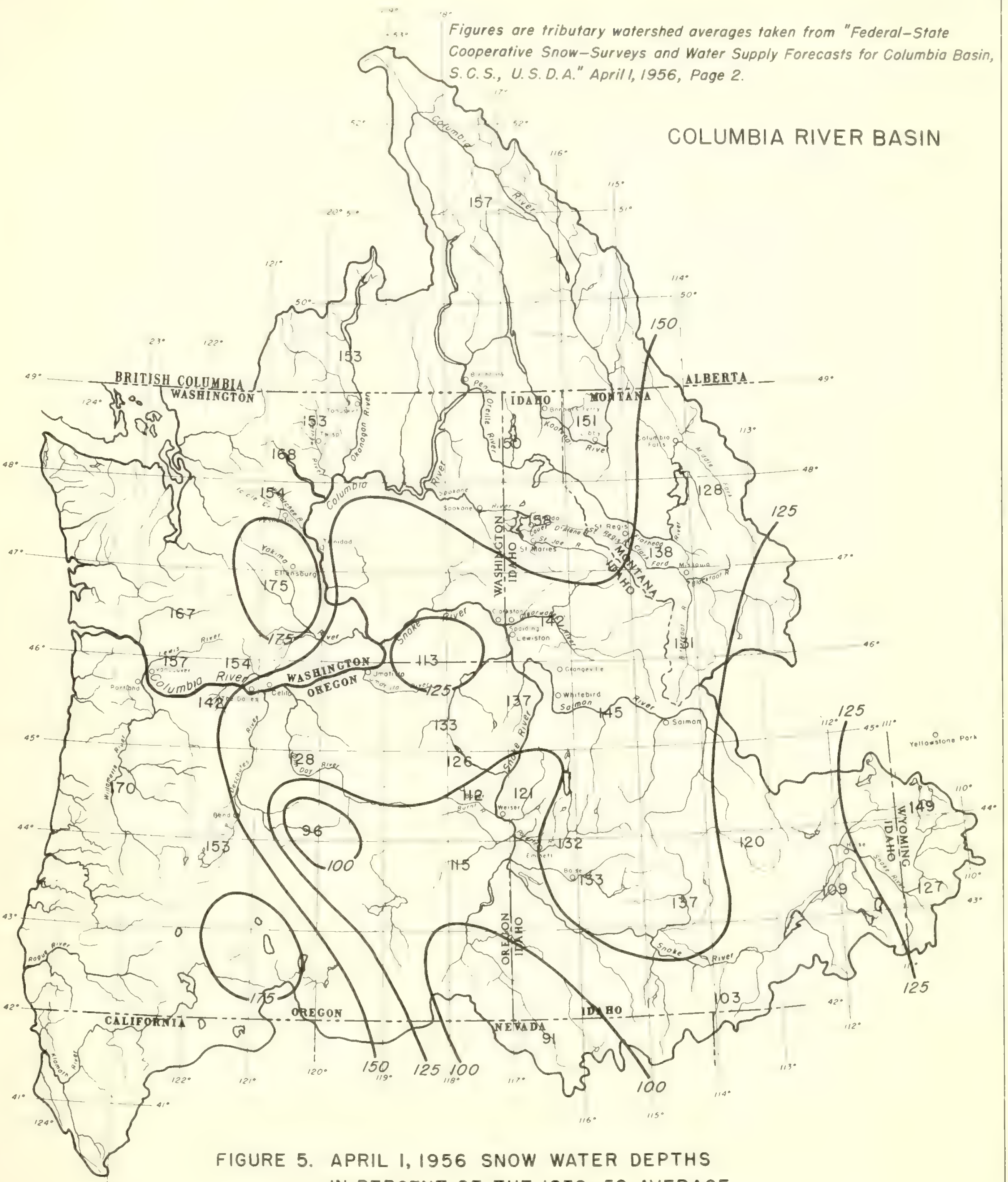


FIGURE 4. PRECIPITATION (OCTOBER 1955 THROUGH MARCH 1956) IN PERCENT OF THE 1938-52 AVERAGE.



Figures are tributary watershed averages taken from "Federal-State Cooperative Snow-Surveys and Water Supply Forecasts for Columbia Basin, S.C.S., U.S.D.A." April 1, 1956, Page 2.

COLUMBIA RIVER BASIN

FIGURE 5. APRIL 1, 1956 SNOW WATER DEPTHS IN PERCENT OF THE 1938-52 AVERAGE.

Figure 6. Accumulated Monthly Precipitation for Selected Stations for October through June 1894, 1948 and 1956.

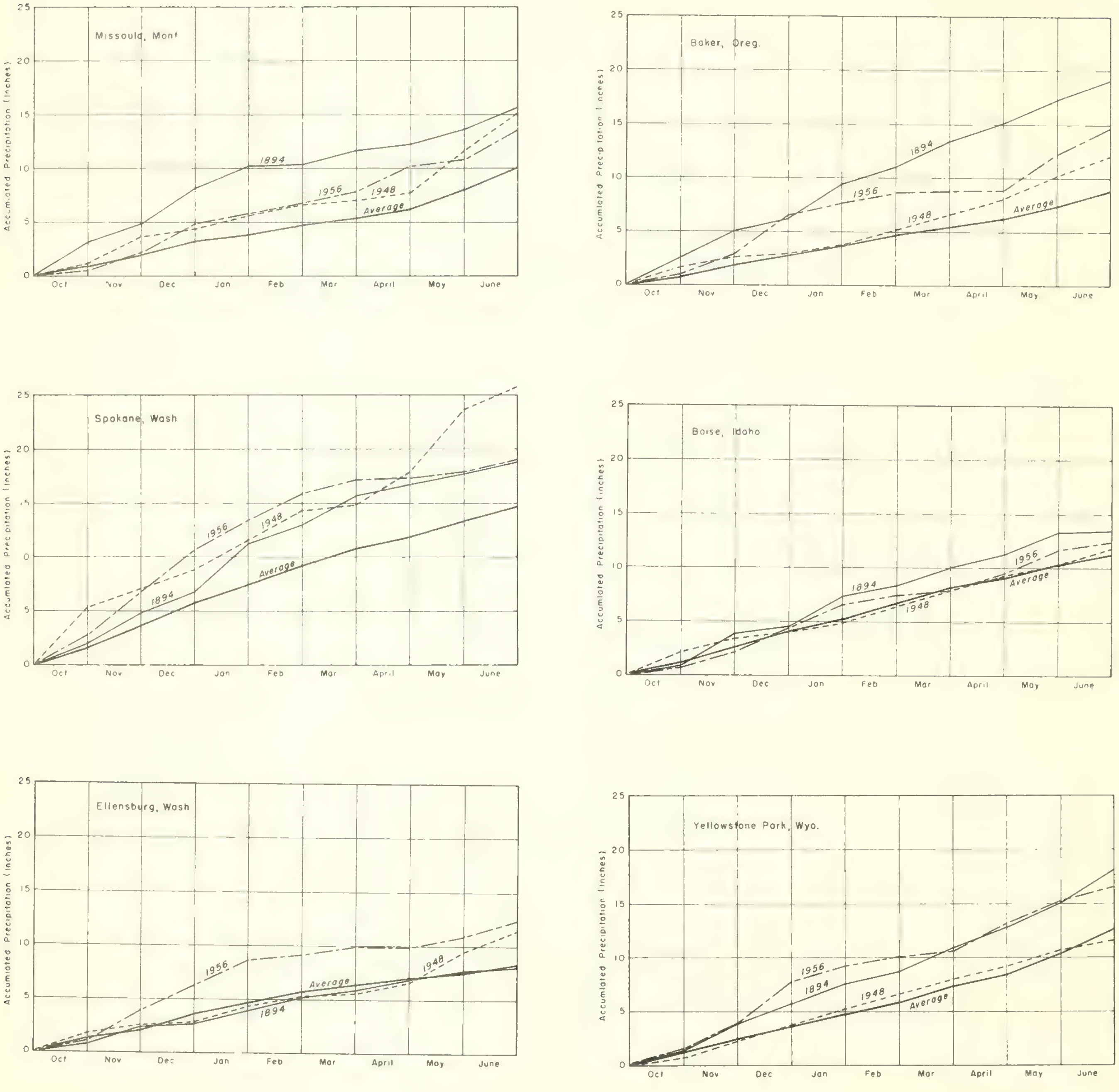
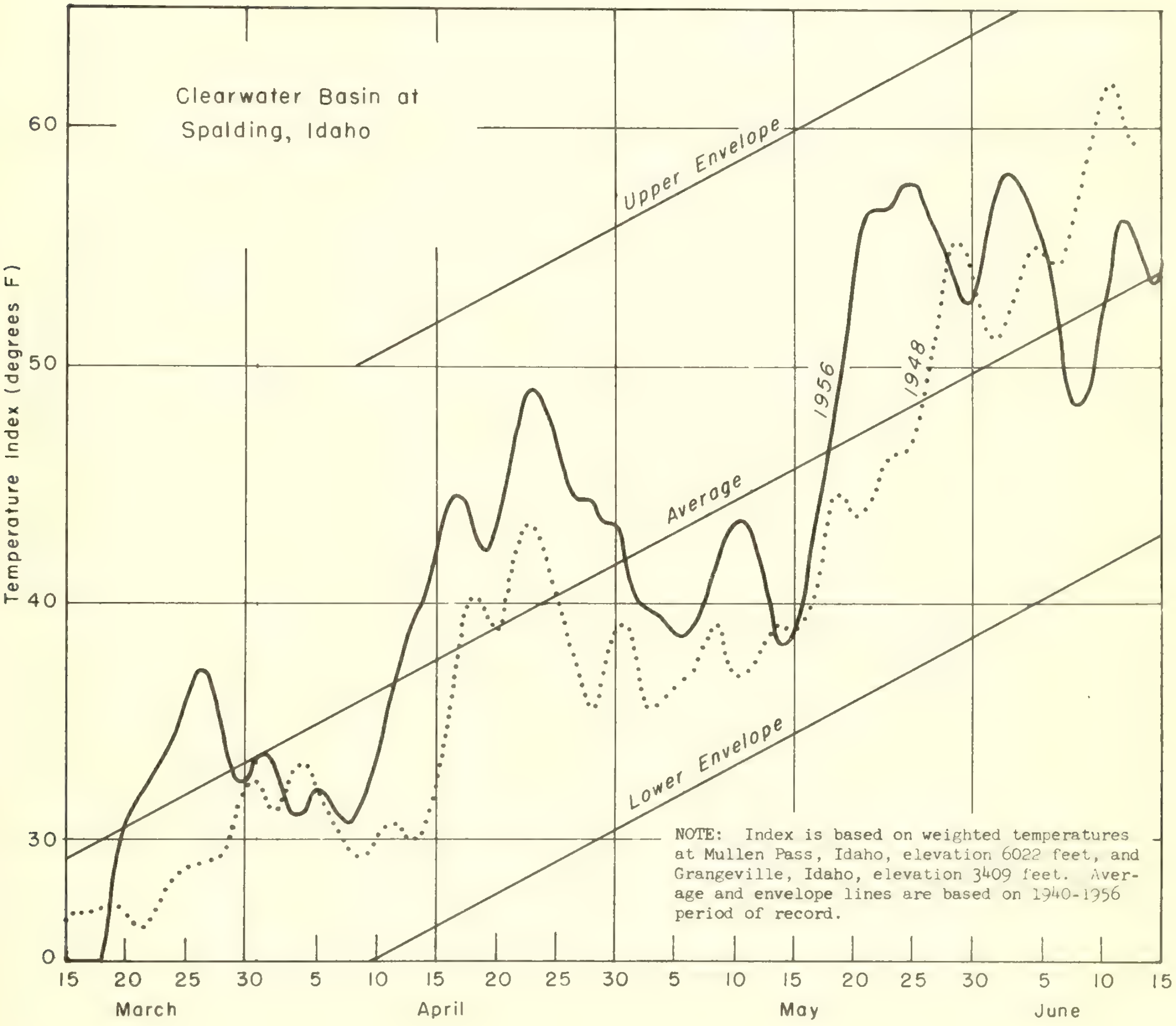


Figure 7. Temperature Index for Clearwater Basin at Spalding, Idaho.



NOTE: Index is based on weighted temperatures at Mullen Pass, Idaho, elevation 6022 feet, and Grangeville, Idaho, elevation 3409 feet. Average and envelope lines are based on 1940-1956 period of record.

Figure 8. Discharge Hydrographs for Selected Stations in Columbia River Basin for Floods of 1894, 1948 and 1956.

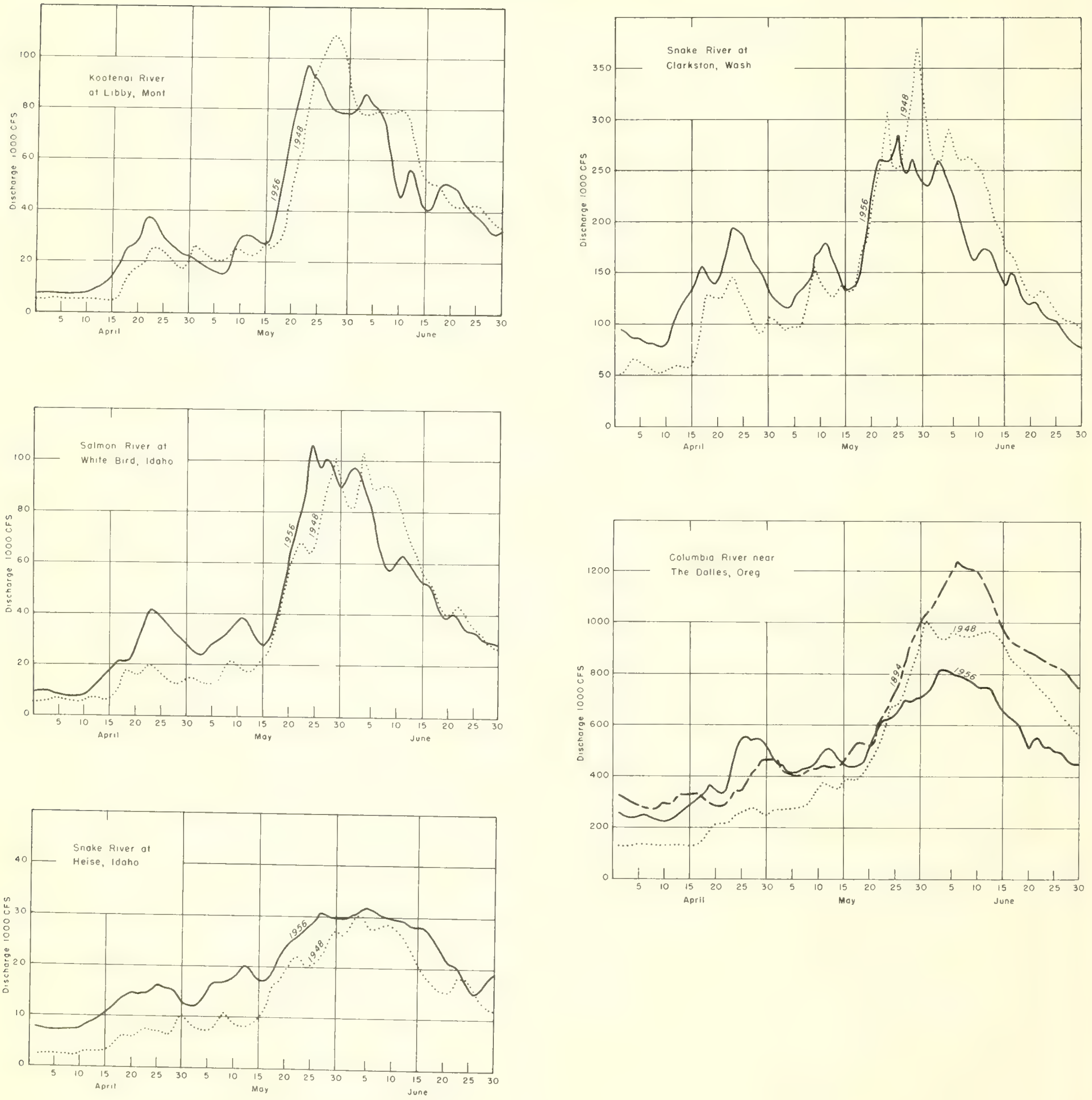
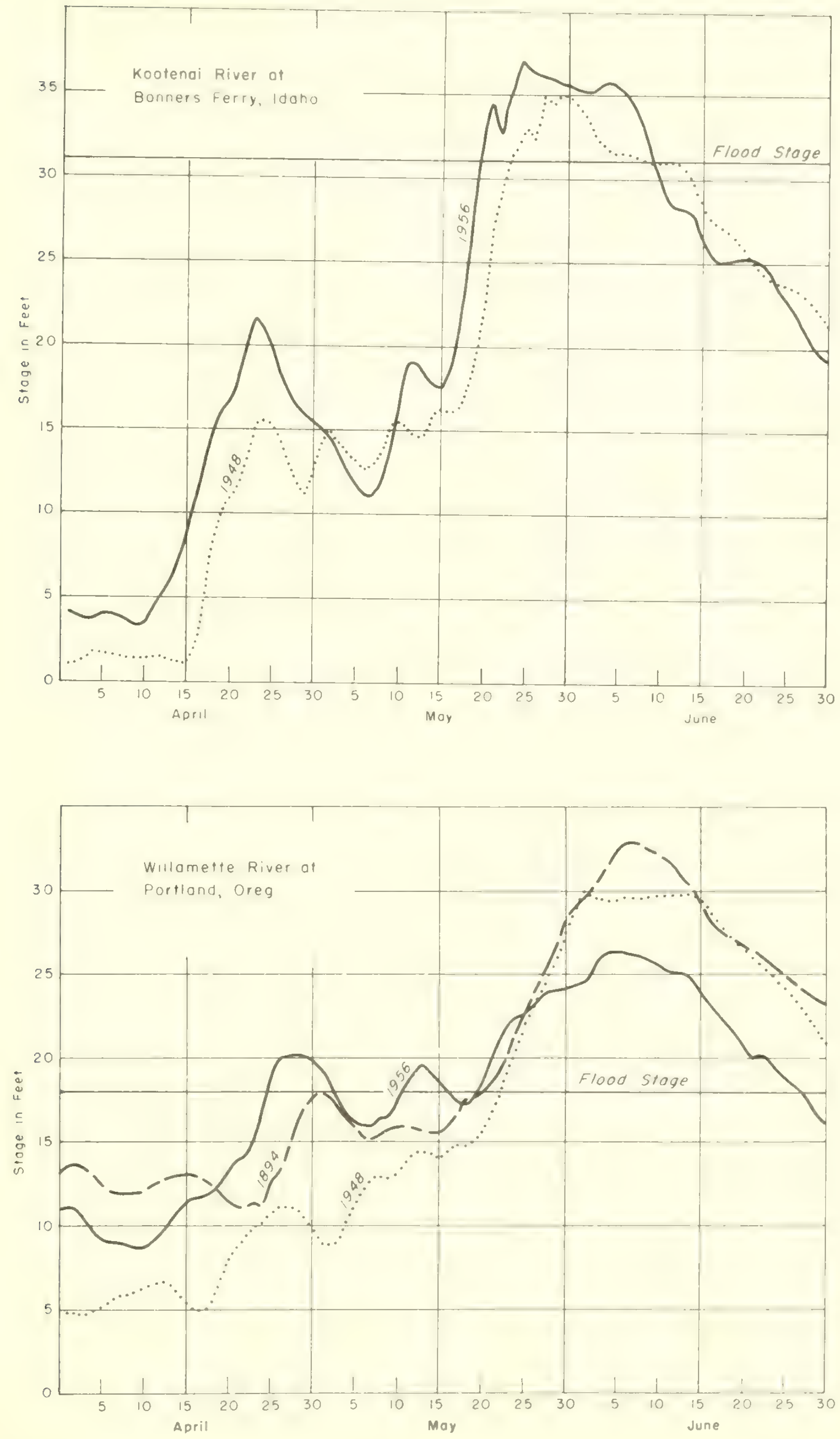


Figure 9. River Stage Hydrographs for Kootenai and Willamette Rivers for Floods of 1894, 1948 and 1956.



GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

YEAR 1956

The most important flooding during the year 1956 was the spring flood in the Columbia River Basin where record-breaking stages and record-peak flows were reported in some of the tributary streams in Idaho and Oregon. The flood damages, estimated at $15,741,000 were comparatively small compared to the flood of 1948. The loss of life in this flood totaled two as compared to more than a score of lives in 1948.

Severe floods occurred in January 1956 on the West Coast for the second consecutive month. The floods were not as severe as in December 1955 but they caused considerable damage as temporary bridges and much of the repair work which had been done to roads, etc., were destroyed. The levee on the Feather River at Nicolaus, Calif., which had been only partially closed, was washed out again. Several houses and ranch buildings were under water to depths of 20 to 25 feet for approximately 6 weeks. Yuba City, Calif., was evacuated as a precautionary measure until danger of high water, similar to that of the previous month, had passed. At that time the entire City was inundated to depths of 6 to 8 feet when levee breaks occurred.

The most damaging floods during February occurred on the West Coast for the 3d consecutive month. The floods were confined, more or less, to small tributaries and creeks in the Sacramento Basin in California, the Willamette Basin in Oregon and in east-central Washington. In Sacramento Canyon, above Red Bluff, Calif., rains were heaviest of record at several points and streams rose higher than during the December flood. Cache Creek in the lower Sacramento Basin exceeded stages of December 1955 and January 1956 and approached the highest stage of record. The crest on the Russian River at Guerneville, Calif., was the second highest since February 1940 and was exceeded only by the Crest of December 23, 1955.

Major flooding occurred in the upper Allegheny River Basin during March. This flood was the second highest of known records and practically isolated Warren, Pa. In the Genessee Valley, at Scio, N. Y., the flooding was the 3d highest in a period of 39 years. Record stages were reached in western New York on Cazenovia Creek, Cayuga Creek and Little Tonawanda Creek in the Buffalo, N. Y., area.

There was considerable flooding during April, but most of the overflows were light except moderate to heavy along the upper Susquehanna in New York and in the lower Tombigbee in Alabama. Damages were heavy along the Susquehanna and Chenango Rivers. Flooding in the Red River of the North Basin was light with the flood crests ranging from slightly above flood stage at Moorhead, Minn., to 4 feet above flood stage at Grand Forks, N. Dak.

Record-breaking floods occurred in the Kootenai River during the latter part of May. Several other streams in the Columbia Basin had record-peak flows. Early in June the main stem of the Columbia had the second highest crest stage at Vancouver, Wash., in 55 years of record. Several flash floods were reported at widely scattered locations throughout the Country in May. One of the severest of these was reported in the small creeks in the Indianapolis, Ind., area towards the end of the month when 3 to 4 inches of rain was reported in a 3 to 4 hour period. About 2,000 families were evacuated. Water 5 to 6 feet deep was reported in many streets in Indianapolis. Serious flooding was reported over practically all of the larger rivers in the territory of Alaska. Several families were evacuated from many flooded areas and in some places food was flown in.

The highest stages in recent years were observed in the lower reaches of the White River Basin in Indiana during the first week in June. In the Petersburg, Ind., area the Lamb levee, 2 miles west of Petersburg, Ind., gave away at the height of the crest and flooded 4,000 acres. Several flash floods were reported in the Missouri and Ohio Basins during different periods in June. Record to near record low flows were reported in various streams in Arizona, Oklahoma, Texas, Alabama, South Carolina and north-central Virginia. The famous Comal Springs at New Braunfels, Tex., ran dry for the first time of record.

There were numerous flash floods reported throughout the Country during July. They were record-breaking in North Carolina, Maryland and Iowa. Other outstanding flash floods were reported in Oregon and Alabama. The drought conditions in the South-Central and Southwestern States grew worse during July in Texas and Oklahoma but was improved in Kansas and Missouri. There was little significant change in Colorado, New Mexico, Arizona and California.

A number of flash floods occurred during August in scattered areas. The most significant of these were the flash floods in the extreme upper Ohio Basin on August 5; 14 lives were lost and heavy damage resulted. On Chartiers Creek at Cannonsburg, Pa., 1200 persons were evacuated and at Carnegie, Pa., hundreds more had to leave their homes. Water was reported 8 feet deep over key highways, bridges and residential streets in the two communities.

The only significant flood threat during September occurred in the southeastern States during the latter part of the month as Hurricane "Flossy" moved inland near Burrwood, La., across the Panhandle of Florida, southern Georgia and along the coastal sections of the Carolinas. The flooding that resulted was minor. Record to near record low stages were reached on the Arkansas and Kansas Rivers during the month.

Flooding during October was minor and sparse. Several record low stages were reached in the Missouri and Arkansas Basins during the month.

The only flooding of any importance during November was the flash floods in the minor tributaries of the lower reaches of the West Branch of the Susquehanna River below Jersey Shore, Pa. At least 3 persons lost their lives in these floods. No overflow was reported along any of the main streams.

The most important flooding during December occurred in the North Pacific Coastal Drainage. The flooding was severe on several streams in the Willamette Basin in Oregon and in coastal streams in Washington. The South Fork of the Santiam reached its highest stage since 1945.

RAWINSONDE DATA

Average annual values

YEAR 19[illegible]

ALBANY, N. Y.
(1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	362	86	6.7	77	270	2.5
1,000	362	131	7.0	70	267	3.1
950	362	558	6.3	65	282	7.2
900	362	996	4.2	66	285	9.7
850	362	1,459	2.1	65	285	12.2
800	362	1,947	.3	61	282	14.8
750	362	2,470	- 1.9	56	278	17.7
700	362	3,009	- 4.4	51	278	20.4
650	362	3,595	- 7.3		275	23.7
600	360	4,210	-10.6		273	26.6
550	359	4,876	-14.5		271	29.9
500	358	5,590	-19.0		271	33.4
450	354	6,373	-24.4		268	37.5
400	351	7,215	-30.2		269	41.6
350	349	8,151	-37.0		268	46.4
300	345	9,201	-44.2		268	50.9
250	341	10,403	-51.1		270	54.8
200	336	11,836	-55.6		271	54.4
175	331	12,682	-56.4		271	49.7
150	320	13,656	-57.1		270	44.3
125	309	14,805	-58.3		272	37.3
100	298	16,201	-59.2		269	28.7
80	284	17,599	-58.8		270	21.8
60	258	19,409	-57.2		266	12.6
50	242	20,564	-56.6		269	8.2
40	214	21,986	-55.8			
30	185	23,822	-54.8			

ALBUQUERQUE, N. MEX.
(838 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	1,619	15.2	30	122	2.1
1,000	365	86				
950	365	538				
900	365	1,006				
850	365	1,497				
800	365	2,012	14.0		255	3.7
750	365	2,555	10.0		269	7.8
700	365	3,121	5.6		271	9.5
650	365	3,725	.7	39	275	10.7
600	365	4,359	- 4.1		279	12.4
550	365	5,039	- 9.3		280	14.6
500	365	5,768	-14.7		280	15.3
450	364	6,567	-20.2		278	16.9
400	364	7,420	-26.3		282	17.3
350	364	8,370	-33.3		282	17.3
300	362	9,434	-41.2		275	18.1
250	358	10,648	-49.4		275	21.6
200	352	12,084	-56.6			
175	351	12,925	-58.8			
150	347	13,887	-61.2			
125	333	15,009	-63.9			
100	316	16,368	-65.9			
80	294	17,723	-64.1			
60	272	19,498	-60.8			
50	257	20,637	-58.9			
40	236	22,046	-56.6			
30	193	23,879	-54.6			

ANCHORAGE, ALASKA
(1004 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	40	2.3	56	194	1.2
1,000	365	61	1.7		179	1.4
950	365	477	.4	58	78	2.3
900	365	906	- 1.4	59	96	3.9
850	365	1,360	- 4.0	62	119	4.5
800	365	1,835	- 6.7	63	138	5.2
750	365	2,343	- 9.3	62	157	5.8
700	365	2,868	-12.1	58	176	4.9
650	365	3,437	-15.3	56	196	4.9
600	365	4,031	-18.9	52	210	5.6
550	364	4,677	-23.0	50	213	6.2
500	361	5,365	-27.6		218	7.0
450	358	6,122	-32.7		223	8.4
400	357	6,936	-38.2		234	10.1
350	356	7,842	-44.2		238	11.3
300	353	8,860	-49.7		236	12.6
250	347	10,046	-52.0		246	12.4
200	338	11,493	-50.2		255	12.6
175	334	12,365	-49.6		257	12.2
150	329	13,373	-49.5		253	12.0
125	321	14,561	-49.7		255	12.4
100	307	16,021	-49.6		256	8.7
80	292	17,484	-49.6			
60	259	19,369	-49.8			

ANNETTE, ALASKA
(1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	37	7.5	76	151	3.5
1,000	366	120	7.0	73	157	4.3
950	366	541	4.6	71	171	6.2
900	366	979	2.0	71	186	6.6
850	366	1,438	- .6	73	199	7.2
800	366	1,921	- 3.2	70	216	8.0
750	366	2,435	- 5.8	64	227	9.7
700	366	2,967	- 8.7	60	242	10.9
650	365	3,543	-12.1	54	249	12.4
600	365	4,116	-15.6	51	253	13.6
550	364	4,800	-19.7	48	255	14.1
500	363	5,498	-24.3	45	258	15.5
450	361	6,264	-29.4		263	16.9
400	361	7,089	-35.1		266	15.3
350	361	8,007	-41.4		262	11.3
300	359	9,037	-47.6			
250	357	10,225	-52.1			
200	348	11,662	-52.7			
175	339	12,523	-51.9			
150	334	13,518	-51.9			
125	327	14,696	-52.3			
100	309	16,136	-52.6			
80	303	17,575	-52.7			
60	279	19,133	-52.8			
50	259	20,610	-52.8			

ATHENS, GA.
(989 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	363	246	15.5	75	286	1.1
1,000	363	152				
950	363	592	16.1	[illegible]	261	3.3
900	363	1,048	13.5	60	258	5.8
850	363	1,527	10.8	68	265	7.8
800	363	2,031	8.1	61	271	9.3
750	363	2,568	5.7	56	276	11.7
700	363	3,121	2.8		278	14.0
650	359	3,726	.6		280	16.5
600	355	4,356	- 4.3		274	19.6
550	353	5,039	- 8.4		277	[illegible]
500	351	5,769	-13.[illegible]		276	[illegible]
450	350	6,575	-18.5		274	27.8
400	349	7,433	-24.7		274	30.9
350	345	8,389	-31.9		272	34.6
300	341	9,460	-40.0		270	39.0
250	336	10,680	-48.9		270	45.5
200	331	12,117	-56.7		270	49.1
175	322	12,958	-59.6		271	47.4
150	314	13,915	-62.6		272	44.5
125	296	15,026	-65.0		275	36.5
100	273	16,380	-66.2		274	28.4
80	248	17,731	-64.8		275	17.7
60	234	19,500	-61.3		288	6.6
50	225	20,635	-59.2		303	2.5
40	203	22,040	-57.1		75	2.9
30	162	23,871	-54.6		75	2.5

BARROW, ALASKA
(1016 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	364	8	-13.1		66	2.1
1,000	364	124	-12.5	77	68	1.9
950	364	525	-10.7	74	82	1.6
900	364	933	-10.1	68	28	.4
850	364	1,371	-10.9	63	306	1.0
800	364	1,838	-12.3	60	275	1.9
750	364	2,337	-14.3	56	277	3.1
700	364	2,850	-16.8	53	281	4.1
650	364	3,412	-19.8	50	274	4.7
600	364	3,993	-23.1	47	268	5.4
550	363	4,632	-27.1		270	7.0
500	363	5,306	-31.6		270	7.6
450	363	6,052	-36.6		268	8.2
400	362	6,851	-42.0		268	8.7
350	362	7,743	-47.8		264	9.7
300	357	8,749	-52.7		264	11.1
250	352	9,920	-54.0		262	13.0
200	348	11,359	-51.3		261	14.6
175	344	12,228	-50.7		262	14.8
150	343	13,231	-50.6		262	14.6
125	337	14,418	-50.8		262	15.2
100	325	15,870	-51.0		262	15.9
80	313	17,321	-51.1			
60	277	19,198	-51.2			
50	249	20,379	-51.6			
40	198	21,825	-52.2			
30						
20						

BETHEL, ALASKA
(1009 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	4	- 1.6	74	358	2.7
1,000	365	71	2.0	69	2	2.9
950	365	485	2.6	63	41	3.5
900	365	909	- 3.3	67	31	3.1
850	365	1,359	- 4.9	65	24	2.5
800	365	1,834	- 7.0	62	352	2.1
750	365	2,341	- 9.3		329	1.9
700	365	2,866	-12.1		309	2.7
650	365	3,436	-15.2		297	3.5
600	365	4,030	-18.7		289	4.7
550	364	4,678	-22.6	45	280	5.4
500	364	5,367	-27.1		275	6.2
450	364	6,124	-32.2		273	7.6
400	363	6,940	-37.7		268	9.1
350	363	7,849	-43.7		258	9.3
300	360	8,871	-49.0		254	10.1
250	358	10,057	-51.4		255	11.5
200	345	11,504	-49.6		258	13.0
175	339	12,379	-48.8		259	13.0
150	325	13,394	-48.7		259	12.6
125	309	14,597	-48.6		258	10.3
100	288	16,063	-48.6			
80	264	17,526	-48.4			

BISMARCK, N. DAK.
(955 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	505	1.7	72	63	1.7
1,000	366	128				
950	366	556	5.3	66	53	1.6
900	366	995	6.1	59	303	2.9
850	366	1,462	4.4	56	298	7.4
800	366	1,954	2.3	54	298	11.7
750	366	2,479	- .5	53	295	15.3
700	366	3,021	- 3.7	50	293	18.6
650	366	3,608	- 7.2	47	292	18.6
600	365	4,223	-10.9	45	289	23.1
550	364	4,889	-15.2	43	286	25.1
500	363	5,599	-20.0	39	285	27.8
450	361	6,381	-25.5		282	30.1
400	361	7,216	-31.7		279	34.0
350	359	8,146	-38.7		274	35.5
300	358	9,187	-46.0			
250	357	10,380	-52.5			
200	356	11,808	-55.6			
175	351	12,660	-55.3			
150	346	13,641	-55.6			
125	345	14,800	-56.5			
100	338	16,210	-57.4			
80	328	17,619	-57.4			
60	313	19,438	-56.4			
50	297	20,598	-55.8			
40	271	22,019	-55.2			
30	210	23,865	-54.2			

BOISE, IDAHO
(916 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	868	11.3	56	264	0.4
1,000	366	128				
950	366	567				
900	366	1,018	12.6	46	320	1.7
850	366	1,496	10.3	43	323	4.1
800	366	1,998	7.0	45	297	6.8
750	366	2,531	3.2	47	285	9.5
700	366	3,080	.8	49	278	11.7
650	365	3,673	- 4.9	48	272	13.6
600	365	4,293	- 9.0	47	272	15.5
550	365	4,964	-13.5	44	271	18.3
500	365	5,679	-18.4		271	19.2
450	364	6,466	-24.0		268	20.6
400	364	7,307	-30.1		265	20.6
350	362	8,243	-37.2		267	19.0
300	362	9,290	-44.9		262	15.3
250	360	10,488	-52.2			
200	351	11,913	-56.3			
175	345	12,763	-56.3			
150	336	13,740	-56.8			
125	323	14,892	-58.3			
100	301	16,289	-59.5			
80	277	17,686	-59.3			

BROWNSVILLE, TEX.
(1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	361	7	21.6	[illegible]	121	6.6
1,000	361	136	22.2	77	125	8.5
950	361	584	20.0	72	140	12.8
900	361	1,047	18.3	62	147	10.3
850	361	1,536	16.3	52	153	7.0
800	361	2,049	14.0	44	168	4.5
750	361	2,595	11.3	40	200	3.5
700	361	3,164	7.9		240	4.3
650	360	3,775	4.1		256	5.4
600	358	4,417	.0		262	7.4
550	357	5,109	- 4.4		266	8.9
500	356	5,852	- 9.3		267	10.9
450	357	6,666	-14.8		273	12.2
400	354	7,539	-21.2		275	15.0
350	350	8,510	-28.3		271	16.5
300	315	9,596	-36.8		271	19.1
250	339	10,832	-46.1		277	17.9
200	334	12,282	-56.0			
175	332	13,122	-60.7			
150	328	14,070	-65.1			
125	316	15,169	-69.3			
100	300	16,488	-72.1			
80	269	17,801	-71.3			
60	249	19,524	-64.9			
50	245	20,645	-61.1			
40	229	22,040	-57.7			
30	198	23,868	-54.5			
20	120	26,473	-51.2			

BUFFALO, N. Y.
(994 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	182	7.4	80	243	2.7
1,000	366	131				
950	366	556	7.1	69	250	7.4
900	366	998	4.8	70	260	11.5
850	365	1,462	2.6	67	268	13.8
800	365	1,951	.4	63	272	15.9
750	365	2,471	- 2.1	58	273	18.1
700	364	3,012	- 4.7	54	275	20.2
650	363	3,596	- 7.7	51	276	23.3
600	363	4,210	-11.1	46	277	26.8
550	362	4,875	-15.0	44	276	29.7
500	362	5,588	-19.6		276	32.4
450	362	6,368	-24.9		275	36.1
400	362	7,209	-30.8		275	39.2
350	361	8,142	-37.6		276	41.8
300	358	9,189	-44.8		275	42.9
250	353	10,388	-51.4		276	45.1
200	350	11,822	-55.4		276	44.7
175	342	12,672	-56.2		274	41.2
150	331	13,650	-57.2			
125	320	14,797	-58.5			
100	293	16,199	-59.5			
80	279	17,593	-59.0			
60	251	19,405	-57.4			
50	240	20,558	-56.9			
40						
30						
20						

BURRWOOD, LA.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	361	3	20.7	84	107	1.6
1,000	361	154	20.7	75	120	1.9
950	361	597	18.1	69	154	2.1
900	361	1,058	15.9	61	171	1.6
850	361	1,541	13.4	56	232	1.4
800	361	2,050	11.0	50	262	2.3
750	361	2,590	8.3		263	4.1
700	360	3,153	5.5		267	7.0
650	357	3,761	2.2		274	9.7
600	354	4,397	- 1.6		275	12.0
550	350	5,085	- 5.9		274	14.2
500	347	5,824	-10.9		273	15.9
450	337	6,634	-16.5		275	18.1
400	330	7,500	-22.9		273	19.0
350	322	8,464	-30.2		273	19.6
300	314	9,542	-38.6			
250	302	10,770	-48.0			
200	280	12,209	-57.1			
175	272	13,046	-60.8			
150	263	13,997	-64.5			
125	241	15,104	-67.8			
100	218	16,438	-70.0			
80	198	17,765	-68.9			
60	175	19,504	-63.8			
50	169	20,629	-60.5			
40	158	22,027	-57.6			
30	133	23,855	-54.5			

CAMAGUEY, CUBA
(1002 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	260	122	21.7			
1,000	260	140	21.4			
950	260	593	20.5			
900	260	1,052	18.3			
850	260	1,540	15.6			
800	260	2,053	12.9			
750	260	2,600	10.0			
700	260	3,163	7.1			
650	260	3,778	3.7			
600	257	4,415	.0			
550	256	5,111	- 4.1			
500	256	5,852	- 8.8			
450	256	6,670	-14.1			
400	255	7,545	-20.3			
350	253	8,521	-27.3			
300	253	9,612	-35.6			
250	247	10,855	-45.3			
200	244	12,309	-56.1			
175	235	13,148	-61.5			

CARIBOU, ME.
(991 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	363	191	2.5	78	275	3.3
1,000	363	118				
950	363	538	2.7	68	281	7.8
900	363	970	.7	67	292	9.1
850	363	1,428	1.3	67	290	10.7
800	363	1,909	3.4	66	287	13.0
750	363	2,424	- 5.5	61	283	15.3
700	363	2,956	- 7.9	57	278	17.5
650	362	3,535	-10.9	53	276	21.0
600	359	4,141	-14.2	49	274	24.7
550	358	4,800	-18.1	46	271	27.4
500	354	5,500	-22.6		271	31.1
450	352	6,276	-27.8		269	34.6
400	350	7,102	-33.7		269	38.5
350	347	8,024	-40.2		269	44.1
300	344	9,061	-46.7		269	48.4
250	336	10,248	-51.8		269	52.6
200	323	11,685	-53.6		269	51.1
175	310	12,540	-54.0		270	47.2
150	301	13,527	-54.4		270	41.2
125	288	14,694	-55.4		268	35.2
100	267	16,114	-56.2		269	29.5
80	246	17,529	-56.4		268	22.5
60	219	19,356	-55.9		264	14.0
50	200	20,517	-55.6		265	7.2
40	174	21,944	-55.2			

CHARLESTON, S. C.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	13	[illegible]	[illegible]	[illegible]	1.9
1,000	366	156	[illegible]	73	205	4.3
950	366	[illegible]	[illegible]	61	235	6.6
900	[illegible]	[illegible]	14.5	63	253	7.0
850	366	1,537	[illegible]	60	268	8.2
800	366	2,043	9.4	54	272	[illegible]
750	366	[illegible]	6.7	49	275	10.9
700	366	[illegible]	3.7		276	12.8
650	365	[illegible]	.4		274	15.0
600	365	[illegible]	[illegible]		[illegible]	16.1
550	364	5,066	- 7.4		272	18.1
500	[illegible]	5,796	-12.2		275	19.6
450	361	6,604	-17.6		274	[illegible]
400	360	7,467	-23.8		274	21.0
350	[illegible]	8,428	-31.0		273	21.2
300	357	9,503	-39.1			
250	356	10,728	-48.1			
200	[illegible]	12,171	-56.4			
175	353	13,013	-59.5			
150	349	13,970	-62.6			
125	342	15,085	-65.4			
100	326	16,437	-66.8			
80	313	17,787	-65.4			
60	292	19,553	-61.1			
50	282	20,690	-59.2			
40	274	22,095	-56.9			
30	247	23,929	-54.4			
20	141	26,546	-51.4			

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average annual values

YEAR 1956

COLD BAY, ALASKA (1005 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	29	2.9	83	266	1.4
1,000	365	65	2.0		315	2.7
950	365	484	.6	79	301	2.7
900	365	911	-1.4	78	303	3.7
850	365	1,365	-3.1	74	303	4.5
800	365	1,843	-4.8	65	292	5.4
750	365	2,355	-7.1	57	276	5.6
700	365	2,884	-9.7	53	266	7.0
650	364	3,457	-12.8	49	256	7.4
600	361	4,059	-16.2		254	7.0
550	360	4,712	-20.2		252	9.3
500	360	5,409	-24.8		248	10.1
450	360	6,174	-30.1		248	13.4
400	360	6,996	-35.7		253	13.6
350	359	7,912	-41.9			
300	357	8,939	-47.7			
250	352	10,129	-51.0			
200	349	11,578	-50.3			
175	345	12,449	-49.6			
150	329	13,457	-49.6			
125	318	14,648	-49.9			
100	308	16,106	-50.1			
80	294	17,564	-50.1			
60	268	19,448	-49.8			
50						
40						
30						

COLUMBIA, MO. (988 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	238	12.6	65	152	1.2
1,000	366	135				
950	366	570	13.1	57	200	4.5
900	366	1,021	11.2	56	239	8.0
850	366	1,497	9.2	55	258	10.9
800	365	1,998	6.9	52	269	13.2
750	365	2,529	4.1	49	277	15.5
700	365	3,084	1.0	47	280	17.5
650	364	3,678	-2.6	45	283	20.2
600	362	4,307	-6.5	42	283	23.9
550	361	4,979	-11.0		283	26.0
500	361	5,707	-15.7		283	28.6
450	360	6,498	-21.2		280	31.7
400	358	7,351	-27.3		280	35.2
350	357	8,298	-34.4		277	39.2
300	356	9,356	-42.2		275	42.7
250	354	10,567	-50.3		272	47.2
200	351	11,999	-56.4		272	49.1
175	347	12,841	-58.2		272	46.8
150	344	13,807	-60.0		275	42.7
125	336	14,939	-62.0		276	35.4
100	327	16,313	-62.8		279	26.6
80	312	17,688	-62.0		280	16.9
60	293	19,476	-59.4		289	8.2
50	276	20,620	-57.9		295	4.1
40	251	22,032	-56.2		12	1.6
30	183	23,870	-54.5		74	4.5

DODGE CITY, KANS. (921 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	792	13.3	49	131	4.3
1,000	366	118				
950	366	559				
900	366	1,017	14.7	43	144	5.1
850	366	1,499	12.7	41	192	5.8
800	366	2,005	10.3	40	234	7.6
750	366	2,543	7.2	40	258	10.7
700	366	3,103	3.5	39	271	12.6
650	366	3,703	-.6	40	275	14.6
600	364	4,335	5.1		279	16.3
550	364	5,012	-9.9		281	17.9
500	364	5,740	-15.1		282	19.6
450	364	6,534	-20.6		280	21.8
400	364	7,388	-27.0		279	23.1
350	363	8,336	-34.2		279	24.5
300	358	9,397	-42.2		277	26.2
250	357	10,607	-50.2		280	28.4
200	356	12,039	-56.8		274	28.9
175	352	12,880	-58.8		275	28.9
150	347	13,842	-60.5		275	27.2
125	336	14,970	-62.9		278	24.1
100	325	16,338	-64.2		281	16.9
80	305	17,705	-63.0			
60	276	19,488	-59.9			
50	258	20,630	-58.2			
40	236	22,040	-56.4			
30	154	23,876	-54.7			

EL PASO, TEX. (882 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	1,195	19.1	30	115	0.2
1,000	365	91				
950	365	545				
900	365	1,015				
850	365	1,508	19.2		216	1.9
800	365	2,025	15.4		242	4.1
750	365	2,573	11.3		249	6.2
700	365	3,140	7.0		257	7.4
650	365	3,748	2.3		260	8.4
600	364	4,385	-2.4		267	10.1
550	364	5,069	-7.2		273	11.5
500	364	5,806	-12.3		275	11.1
450	362	6,611	-17.8		275	12.2
400	361	7,474	-24.0		279	13.6
350	360	8,434	-31.2		283	15.7
300	360	9,507	-39.3			
250	358	10,731	-48.1			
200	352	12,172	-56.5			
175	347	13,012	-59.7			
150	331	13,965	-63.1			
125	306	15,075	-66.5			
100	279	16,419	-68.1			
80	258	17,760	-66.8			
60	245	19,516	-62.2			
50	236	20,649	-59.4			
40	222	22,053	-57.0			
30	179	23,885	-54.4			

ELY, NEV. (809 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	1,908	8.1	43	211	2.7
1,000	366	115				
950	366	559				
900	366	1,018				
850	366	1,498				
800	366	2,005	10.8		213	2.3
750	366	2,547	7.8		244	4.1
700	366	3,105	3.4	38	259	6.6
650	366	3,706	-1.1	42	264	8.7
600	366	4,334	-5.9	44	265	10.3
550	366	5,012	-10.8		271	12.8
500	366	5,734	-16.1		273	15.5
450	365	6,528	-21.6		270	18.5
400	365	7,377	-27.8		267	20.0
350	364	8,322	-35.0		267	18.6
300	364	9,379	-42.8			
250	362	10,585	-50.8			
200	359	12,016	-56.5			
175	355	12,861	-57.2			
150	351	13,833	-58.5			
125	349	14,974	-60.5			
100	336	16,358	-61.8			
80	321	17,738	-61.1			
60	302	19,533	-58.6			
50	288	20,681	-57.3			
40	267	22,098	-55.7			
30	192	23,939	-53.9			

FAIRBANKS, ALASKA (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	135	-2.6	60	298	1.2
1,000	365	91				
950	365	501	-2.3	53	257	.6
900	365	927	-3.9	57	176	1.2
850	365	1,376	-5.7	61	190	2.3
800	365	1,850	-7.8	61	206	3.7
750	365	2,355	-10.3	60	215	4.5
700	365	2,878	-13.1	57	224	6.0
650	365	3,444	-16.3	54	231	6.8
600	365	4,037	-19.9		231	7.0
550	365	4,679	-24.0		242	8.4
500	365	5,366	-28.6		257	9.5
450	365	6,120	-33.9		257	11.3
400	364	6,929	-39.4		242	11.5
350	363	7,830	-45.4		234	13.0
300	361	8,844	-51.2		238	13.0
250	358	10,019	-53.2		240	12.6
200	354	11,462	-50.9		252	12.6
175	351	12,333	-50.0		254	11.7
150	347	13,338	-49.9		260	12.2
125	339	14,529	-50.1		258	13.0
100	323	15,991	-50.1		262	12.8
80	309	17,449	-50.1		264	11.7
60	289	19,322	-50.5			
50	270	20,506	-51.0			
40	238	21,962	-51.4			
30						

FORT HUACHUCA, ARIZ. (858 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	354	1,428	18.0	31		
1,000	354	93				
950	354	550				
900	354	1,021				
850	354	1,510	18.0	30		
800	354	2,025	14.5	31		
750	354	2,571	10.4			
700	354	3,136	6.1			
650	354	3,741	1.9			
600	353	4,379	-2.7			
550	348	5,063	-7.4			
500	334	5,799	-12.4			
450	313	6,601	-18.0			
400	277	7,466	-24.2			
350	257	8,424	-31.5			
300	224	9,498	-39.6			
250	191	10,719	-48.3			

FORT WORTH, TEX. (995 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	364	178	19.8	55	169	2.3
1,000	364	132				
950	364	578	19.2	48	163	9.9
900	364	1,037	16.6	49	185	10.5
850	364	1,522	14.0	50	210	9.7
800	364	2,031	11.1	49	237	9.3
750	364	2,573	8.1	45	256	10.3
700	364	3,133	4.8	41	268	11.3
650	363	3,738	1.0		276	12.8
600	361	4,372	-3.2		280	14.4
550	361	5,058	-7.7		280	16.7
500	361	5,789	-12.7		276	19.4
450	359	6,593	-18.4		273	22.5
400	357	7,453	-24.8		271	25.4
350	354	8,409	-32.2		269	29.7
300	351	9,477	-40.3		268	34.6
250	350	10,694	-49.1		266	41.2
200	347	12,131	-56.9		268	44.5
175	340	12,970	-59.8		269	42.9
150	326	13,927	-62.8		270	38.5
125	310	15,041	-65.9		269	33.6
100	283	16,388	-67.7		269	25.6
80	253	17,732	-66.3		272	13.4
60	234	19,492	-62.1		321	1.7
50	218	20,625	-59.7		71	3.7
40	211	22,026	-57.3		83	6.8
30	193	23,858	-54.6		84	8.9

GLASGOW, MONT. (934 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	695	5.7	60	63	2.3
1,000	366	124				
950	366	551				
900	366	996	7.6	51	329	3.3
850	366	1,465	5.6	51	301	7.6
800	366	1,959	2.8	52	294	11.1
750	366	2,484	-.4	54	292	14.6
700	366	3,027	-3.8	53	292	17.3
650	366	3,612	-7.5	52	290	19.8
600	365	4,227	-11.4	49	290	21.8
550	365	4,891	-15.7	45	289	23.9
500	365	5,601	-20.6		287	25.8
450	363	6,378	-26.0		285	28.0
400	361	7,213	-32.2		282	29.3
350	361	8,142	-39.0		280	29.1
300	359	9,182	-46.2		275	29.7
250	356	10,375	-52.7		274	30.5
200	348	11,804	-55.3			
175	338	12,655	-54.8			
150	332	13,640	-55.0			
125	317	14,800	-55.7			
100	298	16,217	-56.5			
80	288	17,632	-56.2			
60	273	19,464	-55.5			
50	258	20,628	-55.1			
40	226	22,057	-54.6			
30	150	23,903	-53.6			

GRAND JUNCTION, COLO. (852 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	1,474	12.7	36	43	1.4
1,000	366	99				
950	366	544				
900	366	1,006				
850	366	1,491	13.3		30	1.9
800	366	2,001	12.1		256	2.9
750	366	2,544	8.2	33	251	5.6
700	366	3,102	3.7	37	256	8.2
650	366	3,703	-1.0	41	263	9.5
600	366	4,332	-5.9	45	267	11.3
550	366	5,008	-11.0	46	269	13.2
500	365	5,732	-16.3	43	273	15.9
450	364	6,526	-21.8		278	18.8
400	363	7,373	-28.1		280	21.2
350	362	8,316	-35.4		279	21.8
300	359	9,371	-43.3		280	22.3
250	355	10,575	-51.3			
200	352	12,002	-56.9			
175	352	12,845	-57.9			
150	345	13,812	-59.2			
125	335	14,946	-61.4			
100	319	16,322	-63.0			
80	304	17,696	-61.9			
60	283	19,486	-59.3			
50	261	20,632	-57.9			
40	237	22,043	-56.2			
30	159	23,876	-54.5			

GREAT FALLS, MONT. (887 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	1,123	7.8	53	258	5.8
1,000	366	115				
950	366	550				
900	366	999				
850	366	1,472	7.6	45	261	9.5
800	366	1,969	4.5	49	267	11.3
750	366	2,496	.9	53	270	14.2
700	366	3,042	-2.8	56	275	16.5
650	366	3,629	-6.7	55	278	18.3
600	366	4,245	-10.8	54	280	20.6
550	365	4,911	-15.2	50	281	23.1
500	362	5,622	-20.1	47	281	24.9
450	361	6,401	-25.6		282	26.2
400	359	7,237	-31.7		280	29.7
350	357	8,167	-38.7		279	33.2
300	354	9,209	-46.0		278	36.3
250	352	10,402	-52.6		277	37.1
200	345	11,829	-55.5		277	35.9
175	338	12,677	-55.3		277	34.0
150	329	13,658	-55.4		278	31.3
125	321	15,318	-56.3		278	28.0
100	304	16,231	-57.0		280	22.7
80	281	17,646	-56.9			
60						
50						
40						
30						

GREEN BAY, WIS. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	210	5.5	79	294	1.4
1,000	366	127				
950	366	553	6.6	64	274	3.7
900	366	992	4.6	61	278	6.0
850	366	1,456	2.6	58	287	9.3
800	366	1,945	.5	55	288	11.8
750	366	2,466	-1.9	51	287	14.6
700	366	3,006	-4.7	48	289	17.1
650	364	[illegible]	-7.9	46	288	20.0
600	364	4,204	-11.3	43	287	24.3
550	364	4,868	-15.3		286	26.8
500	363	5,580	-20.0		287	28.6
450	362	6,361	-25.4		284	30.5
400	361	7,197	-31.4		282	30.7
350	361	8,128	-38.2		281	32.1
300	361	9,171	-45.3		280	32.2
250	359	10,369	-51.6		275	34.0
200	356	11,804	-54.7			
175	[illegible]	12,656	-55.2			
150	[illegible]	[illegible]	-56.0			
125	352	14,793	-57.2			
100	349	16,200	-58.1			
80	338	17,605	-57.9			
60	325	19,424	56.7			
50	308	20,581	-56.0			
40	282	22,003	-55.3			
30	210	23,844	-54.0			

GREENSBORO, N. C. (986 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	273	13.0	77	277	0.8
1,000	366	155				
950	366	592	11.4	60	248	4.3
900	366	1,046	12.1	61	263	7.4
850	366	1,523	9.6	62	271	9.7
800	366	2,024	7.0	60	276	11.7
750	366	2,560	4.3	55	279	13.6
700	366	3,112	1.5	49	281	15.7
650	366	3,713	1.8		281	17.3
600	366	4,338	-5.4		281	18.6
550	365	5,021	-9.4		279	20.4
500	365	5,747	14.1		279	22.3
450	365	6,548	-19.5		279	25.3
400	365	7,403	-25.6		277	26.2
350	364	8,357	-32.6		275	27.0
300	364	9,425	-40.4			
250	363	10,643	-48.9			
200	362	12,082	-56.2			
175	361	12,925	-58.7			
150	358	13,887	-61.2			
125	355	15,013	-63.3			
100	345	16,378	-64.3			
80	333	17,745	-63.0			
60	316	19,526	-59.7			
50	304	20,670	-58.2			
40	286	22,079	-56.5			
30	248	23,912	-54.5			

HATTERAS, N. C. (1017 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	3	16.5	83	232	1.2
1,000	366	148	16.7	76	232	2.9
950	366	587	14.9	68	257	6.4
900	366	1,041	12.4	64	263	7.8
850	366	1,518	10.1	59	268	9.9
800	366	2,020	7.8	54	270	11.8
750	366	2,555	5.1	49	270	14.4
700	366	3,111	2.1	46	270	16.1
650	366	3,709	-1.2	43	269	18.3
600	366	4,340	-4.8		269	20.6
550	363	5,020	-8.8		269	22.5
500	362	5,751	-13.5		269	23.9
450	362	6,551	-18.8		271	24.9
400	362	7,412	-24.9		271	28.0
350	362	8,368	-32.1		271	29.1
300	361	9,437	-39.9			
250	359	10,658	-48.4			
200	354	12,098	-56.1			
175	346	12,940	58.7			
150	338	13,901	-61.4			
125	329	15,024	-63.6			
100	318	16,387	-64.9			
80	297	17,748	-63.6			
60	279	19,528	-60.2			
50	264	20,670	-58.3			
40	251	22,080	-56.4			
30	220	23,917	-54.2			

HILO, T. H. (1014 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	9	24.4	75	72	4.1
1,000	365	131	23.0	75	77	4.9
950	365	581	19.6	81	88	6.2
900	365	1,041	16.4	84	90	5.1
850	365	1,526	13.4	85	90	4.1
800	365	2,036	11.3	75	88	4.5
750	365	2,584	9.7	55	82	4.5
700	365	3,145	7.3		85	3.7
650	364	3,757	4.3		86	2.1
600	364	4,399	.7		125	.6
550	364	5,094	-3.4		237	2.3
500	364	5,840	-8.0		250	5.4
450	364	6,661	-13.5		256	9.3
400	364	7,537	-19.8		258	13.0
350	364	8,513	-27.2		263	17.7
300	363	9,604	-35.6		266	25.4
250	363	10,846	-45.2		269	34.2
200	362	12,298	-56.2		269	36.3
175	356	13,135	-61.9		272	36.9
150	345	14,078	-67.2		276	32.4
125	305	15,167	-71.3		273	18.8
100	249	16,478	-73.9			
80	200	17,780	-72.6			

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average annual values

YEAR [illegible]

INTERNAT. FALLS, MINN (972 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	360	2.6	69	270	0.8
1,000	365	126				
950	365	545	3.4	63	259	1.7
900	365	981	1.7	63	270	4.9
850	365	1,441	.1	62	278	7.6
800	365	1,925	- 1.8	58	288	10.1
750	365	2,441	- 4.1	55	292	13.2
700	365	2,978	- 6.6	51	296	15.9
650	364	3,558	- 9.8	48	291	18.6
600	361	4,168	-13.3	47	293	21.8
550	356	4,825	-17.3	44	293	24.9
500	354	5,533	-21.8	44	293	27.4
450	348	6,307	-27.0		291	31.1
400	345	7,139	-33.0		291	34.4
350	341	8,063	-39.6		290	38.3
300	335	9,101	-46.5		290	41.8
250	315	10,296	-52.1		290	45.1
200	288	11,727	-53.8		288	43.5
175	262	12,584	-53.4		286	40.6
150	248	13,573	-53.8		288	37.9
125	229	14,741	-54.8		288	32.8
100	203	16,165	-55.5		290	24.9
80	175	17,583	-55.7			
60	148	19,410	-55.1			
50	134	20,574	-54.8			
40						
30						

JACKSONVILLE, FLA (1018 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	6	18.4	81	193	1.4
1,000	365	162	19.4	74	189	2.5
950	365	603	17.5	66	230	3.5
900	365	1,063	14.9	64	259	1.1
850	365	1,545	12.3	61	270	5.2
800	365	2,051	9.9	54	272	7.0
750	365	2,589	7.3		271	9.1
700	365	[illegible]	4.4		271	11.1
650	362	3,754	1.1		270	13.0
600	359	4,390	- 2.6		271	15.5
550	359	5,075	- 6.8		272	18.3
500	356	5,813	-11.5		271	20.4
450	355	6,617	-17.1		271	23.1
400	352	7,485	-23.3		271	26.2
350	349	8,448	-30.5		270	30.1
300	345	9,524	-38.8		271	33.4
250	343	10,750	-48.1		271	38.7
200	338	12,189	-57.0		272	42.7
175	335	13,027	-60.4		273	42.7
150	333	13,978	-64.1		274	[illegible]
125	330	15,084	-67.3		273	32.6
100	315	16,422	-69.3		274	23.1
80	290	17,754	-67.8		272	11.8
60	265	19,501	-63.2		296	1.2
50	255	20,630	-60.3		86	4.1
40	238	22,028	-57.7		86	8.9
30	209	23,859	-54.7		92	11.7

KING SALMON, ALASKA (1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	364	15	0.2	71	4	1.4
1,000	364	63	1.0		329	2.5
950	364	473	- 1.2	70	16	1.6
900	364	904	[illegible]	70	29	1.0
850	364	1,356	- 4.3	68	316	.8
800	361	[illegible]	- 6.3	65	287	1.9
750	361	2,340	- 8.7	61	283	2.9
700	361	[illegible]	-11.5	57	280	[illegible]
650	[illegible]	3,437	-14.6		271	5.6
600	363	4,033	-18.2		273	6.8
550	[illegible]	[illegible]	[illegible]		272	8.4
500	359	5,371	-26.9		270	9.9
450	357	6,131	-32.1		[illegible]	12.0
400	[illegible]	6,947	-37.7		267	[illegible]
350	[illegible]	[illegible]	-43.7		266	16.9
300	[illegible]	8,873	-49.0		261	20.4
250	351	10,060	-51.5		261	21.4
200	348	11,509	-50.2		259	21.8
175	343	12,380	-49.9		260	20.8
150	[illegible]	13,390	[illegible]		258	20.4
125	318	[illegible]	-50.2		258	[illegible]
100	298	16,039	-50.4		255	17.9
80	282	17,497	-50.4		252	15.3
60	[illegible]	19,377	-50.5		256	[illegible]
50	[illegible]	20,572	-50.5		260	12.2
40						
30						

KOTZEBUE, ALASKA (101[illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	5	- 6.7	77	69	1.0
1,000	[illegible]	101	- 6.1	69	[illegible]	.6
950	[illegible]	511	- 5.0	65	71	1.4
900	[illegible]	929	- 6.3	63	38	[illegible]
850	[illegible]	1,374	- 7.7	60	110	1.2
800	365	[illegible]	- 9.6	57	[illegible]	1.7
750	365	2,345	-11.9	54	282	2.5
700	[illegible]	2,865	-14.6	52	273	3.1
650	363	[illegible]	-17.8		270	3.9
600	[illegible]	4,016	-21.3		[illegible]	5.1
550	[illegible]	[illegible]	-25.2		266	6.2
500	[illegible]	5,340	-29.7		[illegible]	7.2
450	358	6,090	[illegible]		[illegible]	7.4
400	[illegible]	6,897	-40.1		269	8.5
350	[illegible]	7,797	[illegible]		260	8.5
300	346	[illegible]	-51.0		[illegible]	10.1
250	[illegible]	9,986	[illegible]		264	10.3
200	[illegible]	[illegible]	-50.6		253	10.7
175	[illegible]	12,302	-49.7		257	[illegible]
150	[illegible]	13,307	-49.6		255	12.6
125	[illegible]	14,502	-49.4		257	13.2
100	285	15,962	-49.3		254	12.4
80	271	[illegible]	-49.5		256	10.3
60	248	19,312	-49.7			
50						
40						
30						

LAKE CHARLES, LA. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	[illegible]	19.5	[illegible]	156	2.1
1,000	366	[illegible]	20.1	73	[illegible]	3.7
950	[illegible]	592	[illegible]	67	[illegible]	[illegible]
900	[illegible]	[illegible]	16.1	63	[illegible]	2.7
850	366	1,537	[illegible]	[illegible]	[illegible]	1.6
800	[illegible]	2,046	11.1	[illegible]	[illegible]	[illegible]
750	[illegible]	[illegible]	8.7	43	[illegible]	4.1
700	366	3,151	5.7		[illegible]	[illegible]
650	361	3,756	2.2		[illegible]	9.1
600	364	[illegible]	[illegible]		[illegible]	11.1
550	[illegible]	[illegible]	[illegible]		[illegible]	12.6
500	361	[illegible]	-11.0		[illegible]	[illegible]
450	[illegible]	6,629	-16.5		282	17.1
400	357	[illegible]	-22.8		[illegible]	16.9
350	355	8,463	-30.1		[illegible]	17.3
300	[illegible]	9,540	-38.4			
250	[illegible]	10,769	-47.5			
200	345	12,211	[illegible]			
175	[illegible]	13,051	-59.9			
150	[illegible]	[illegible]	-63.3			
125	326	[illegible]	[illegible]			
100	[illegible]	16,457	-69.0			
80	[illegible]	17,792	-67.8			
60	272	[illegible]	-62.8			
50	261	20,671	-59.9			
40	[illegible]	22,073	-57.2			
30	[illegible]	[illegible]	[illegible]			

LANDER, WYO. (828 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	365	1,696	7.5	50	258	3.3
1,000	365	107				
950	365	544				
900	365	1,000				
850	365	1,480				
800	365	1,983	8.9	38	296	3.1
750	365	2,517	5.5	37	294	5.6
700	365	3,075	1.4	39	286	8.7
650	365	3,667	- 3.1	42	[illegible]	12.2
600	364	4,295	- 7.8	43	284	15.9
550	364	4,963	-12.6	42	283	19.2
500	364	5,685	-17.9		281	21.4
450	363	6,469	-23.6		276	22.1
400	362	7,314	-30.1		271	23.9
350	361	8,251	-37.2		271	26.4
300	359	9,298	-44.9		271	27.4
250	[illegible]	10,495	-52.2			
200	352	11,922	-56.7			
175	350	12,767	-56.9			
150	347	13,742	-57.5			
125	343	14,891	-58.8			
100	335	16,287	-60.0			
80	325	17,681	-59.3			
60	300	19,492	-57.6			
50	289	20,646	-56.5			
40	244	22,070	-55.3			
30	170	23,906	-53.8			

LAS VEGAS, NEV. (937 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	660	20.6	19	235	6.1
1,000	366	89				
950	366	539				
900	366	1,008	21.1		230	6.2
850	366	1,498	17.3		237	6.0
800	366	2,011	13.1		239	6.0
750	366	2,554	8.8		248	5.4
700	366	3,116	4.5		255	[illegible]
650	365	3,718	.1		268	6.2
600	363	4,351	- 4.3		276	8.4
550	360	5,031	- 9.0		277	11.5
500	358	5,762	-14.1		274	14.0
450	354	6,560	-19.9		275	[illegible]
400	350	7,415	-26.4		271	20.2
350	350	8,365	-33.8		269	23.9
300	346	9,427	-41.9		268	27.8
250	342	10,637	-50.3		266	32.1
200	334	12,069	-57.0		264	37.7
175	327	12,910	-58.6		[illegible]	37.5
150	312	13,875	-60.4		[illegible]	[illegible]
125	290	15,005	-62.8		263	28.9
100	262	16,376	-64.5		[illegible]	21.4
80	230	17,738	-63.6		[illegible]	12.2
60	214	[illegible]	-60.6		[illegible]	2.9
50	204	20,654	-58.7		44	3.1
40	189	22,063	-56.6		[illegible]	[illegible]
30	150	23,900	-54.5			

LITTLE ROCK, ARK (1007 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	79	16.5	70	163	1.6
1,000	[illegible]	139	17.0	63	[illegible]	1.6
950	[illegible]	[illegible]	16.4	57	[illegible]	[illegible]
900	365	1,036	14.0	[illegible]	[illegible]	7.0
850	[illegible]	1,517	11.8	[illegible]	[illegible]	8.2
800	[illegible]	2,022	9.5	[illegible]	[illegible]	9.1
750	[illegible]	2,561	6.8	45	271	11.3
700	365	[illegible]	3.7	42	[illegible]	[illegible]
650	364	3,721	.0		[illegible]	14.6
600	[illegible]	4,354	- 4.0		286	16.7
550	[illegible]	5,036	[illegible]		[illegible]	17.7
500	[illegible]	5,769	-13.0		[illegible]	19.0
450	361	6,571	-18.4		281	20.6
400	361	7,432	-24.6		[illegible]	22.5
350	[illegible]	[illegible]	-31.9		277	23.9
300	[illegible]	9,460	-40.0		275	27.0
250	[illegible]	10,681	-48.7			
200	[illegible]	12,121	-56.3			
175	[illegible]	12,962	-58.9			
150	[illegible]	13,923	-61.5			
125	[illegible]	15,043	-64.3			
100	[illegible]	16,400	-65.5			
80	[illegible]	[illegible]	-64.5			
60	[illegible]	19,527	-60.6			
50	[illegible]	20,668	-58.5			
40	[illegible]	22,077	-56.3			
30	[illegible]	23,913	-53.9			

McGRATH, ALASKA ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	361	[illegible]	- 2.7	59	[illegible]	0.6
1,000	[illegible]	[illegible]	[illegible]			
950	[illegible]	[illegible]	[illegible]	61	49	1.9
900	361	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
850	[illegible]	1,370	[illegible]	[illegible]	81	2.9
800	[illegible]	1,843	- 7.7	[illegible]	[illegible]	2.5
750	361	2,346	-10.1	59	[illegible]	1.9
700	361	[illegible]	-12.9	56	[illegible]	1.7
650	[illegible]	[illegible]	-16.2		299	1.9
600	359	4,030	-19.8			
550	[illegible]	4,673	-23.8			
500	355	[illegible]	-28.2			
450	[illegible]	6,114	-33.3			
400	[illegible]	6,926	-38.7			
350	344	7,831	-44.6			
300	340	[illegible]	-49.9			
250	335	10,033	-52.0			
200	[illegible]	[illegible]	-50.1			
175	[illegible]	[illegible]	-49.4			
150	[illegible]	13,364	-49.2			
125	[illegible]	14,556	-49.3			
100	304	16,016	-49.3			
80	[illegible]	17,479	-49.2			
60	[illegible]	19,362	-49.5			
50	251	[illegible]	-49.6			
40	[illegible]	22,027	-49.8			
30						

MAZATLAN, MEXICO. (1010 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	14	25.1	76		
1,000	[illegible]	98	24.4	74		
950	[illegible]	557	[illegible]	[illegible]		
900	359	1,020	[illegible]			
850	359	1,515	19.4			
800	359	2,033	[illegible]			
750	[illegible]	2,587	12.7			
700	357	3,155	9.0			
650	[illegible]	3,772	[illegible]			
600	[illegible]	4,414	[illegible]			
550	[illegible]	5,109	[illegible]			
500	[illegible]	5,852	[illegible]			
450	[illegible]	6,670	-13.8			
400	[illegible]	7,547	-19.9			
350	311	[illegible]	-27.0			
300	[illegible]	9,616	-35.3			
250	[illegible]	10,864	-45.0			
200						
175						
150						
125						
100						
80						
60						
50						
40						
30						

MEDFORD, OREG. (970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	366	401	13.3	[illegible]	318	[illegible]
1,000	366	144				
950	366	583	14.0	55	[illegible]	3.9
900	366	1,033	11.8	53	296	4.1
850	366	1,509	8.8	56	269	4.7
800	366	2,008	5.5	57	[illegible]	6.0
750	366	2,539	2.4	53	260	[illegible]
700	365	3,087	- .8	48	262	9.9
650	[illegible]	3,681	[illegible]	44	[illegible]	12.0
600	362	4,302	[illegible]	40	[illegible]	13.2
550	362	4,976	-12.4		271	14.0
500	361	5,693	-17.4		269	15.5
450	361	6,483	-23.0		266	16.1
400	361	7,327	-29.1		263	16.3
350	360	8,267	-36.1		260	15.2
300	359	9,318	-44.0		259	[illegible]
250	358	10,520	-51.7			
200	352	11,946	-56.7			
175	349	12,791	-56.8			
150	348	13,767	-57.2			
125	344	14,918	-58.7			
100	334	16,315	-59.7			
80	321	17,708	-59.5			
60	308	19,513	-57.8			
50	294	20,665	-56.8			
40	273	22,084	-55.5			
30	216	23,921	[illegible]			

MERIDA, MEXICO ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	[illegible]	24.8	78		
1,000	[illegible]	137	24.5	76		
950	[illegible]	587	22.3	71		
900	345	1,056	19.6	70		
850	[illegible]	1,546	16.5	71		
800	345	2,060	13.6	65		
750	345	2,604	11.0			
700	[illegible]	[illegible]	8.2			
650	[illegible]	3,787	4.9			
600	342	4,432	1.2			
550	342	5,127	- 2.9			
500	336	5,875	[illegible]			
450	[illegible]	6,695	-13.2			
400	329	7,574	-19.3			
350	317	8,553	-26.7			
300	306	9,646	-35.0			
250	272	10,891	-44.6			
200	230	12,348	-55.5			
175						
150						
125						
100						
80						
60						
50						
40						
30						

MIAMI, FLA. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	1	[illegible]	[illegible]	77	2.9
1,000	365	[illegible]	[illegible]	74	[illegible]	4.9
950	[illegible]	[illegible]	19.4	74	98	6.4
900	365	1,063	16.6	70	[illegible]	5.4
850	[illegible]	1,548	[illegible]	63	[illegible]	3.9
800	[illegible]	2,057	[illegible]	[illegible]	[illegible]	1.7
750	[illegible]	2,598	9.0		[illegible]	.4
700	[illegible]	3,163	5.9		[illegible]	[illegible]
650	363	3,770	2.5		265	[illegible]
600	363	4,410	[illegible]		[illegible]	6.2
550	[illegible]	5,097	- 5.3		271	[illegible]
500	[illegible]	5,840	-10.1		273	10.9
450	[illegible]	6,652	-15.6		[illegible]	11.5
400	[illegible]	7,524	-21.8		[illegible]	13.2
350	[illegible]	8,492	-29.1		[illegible]	14.0
300	[illegible]	9,574	-37.5		[illegible]	16.3
250	[illegible]	10,807	[illegible]		286	19.0
200	[illegible]	12,252	-56.7		286	20.8
175	[illegible]	[illegible]	-61.4		[illegible]	22.3
150	[illegible]	14,032	-66.0			
125	[illegible]	15,127	-69.8			
100	[illegible]	16,446	-71.8			
80	257	17,762	-70.3			
60	[illegible]	19,491	-64.5			
50	[illegible]	20,614	-61.0			
40	222	[illegible]	-57.3			
30	207	[illegible]	-53.9			

MIDLAND, TEX. ([illegible] MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	361	[illegible]	[illegible]	39	145	[illegible]
1,000	[illegible]	[illegible]				
950	[illegible]	559				
900	361	1,025	19.7	35	[illegible]	6.0
850	[illegible]	1,515	17.0	[illegible]	[illegible]	9.3
800	361	[illegible]	13.8	[illegible]	[illegible]	[illegible]
750	364	2,574	10.0		[illegible]	[illegible]
700	364	3,139	6.2		257	9.3
650	364	[illegible]	[illegible]		[illegible]	11.3
600	361	4,382	[illegible]		277	13.0
550	[illegible]	5,067	- 7.3		279	15.0
500	[illegible]	[illegible]	-12.3		277	[illegible]
450	[illegible]	6,607	-17.9		275	[illegible]
400	361	7,469	-24.1		[illegible]	21.2
350	360	8,428	-31.4		279	22.9
300	359	9,501	-39.4		[illegible]	25.1
250	[illegible]	[illegible]	-48.2		283	26.6
200	[illegible]	[illegible]	-56.1			
175	[illegible]	13,008	-59.3			
150	[illegible]	13,967	-62.7			
125	306	15,081	-66.0			
100	[illegible]	[illegible]	-68.0			
80	[illegible]	17,766	-66.6			
60	[illegible]	19,523	-62.0			
50	237	20,657	-59.4			
40	[illegible]	22,061	-56.8			
30	[illegible]	23,897	-54.3			

NANTUCKET, MASS. (1015 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	14	8.5	[illegible]	[illegible]	[illegible]
1,000	[illegible]	134	9.4	77	[illegible]	[illegible]
950	363	[illegible]	8.4	[illegible]	[illegible]	8.7
900	[illegible]	1,006	[illegible]	64	280	10.9
850	[illegible]	1,473	4.3	61	[illegible]	[illegible]
800	[illegible]	[illegible]	2.5	[illegible]	277	15.5
750	[illegible]	2,490	.1	52	275	[illegible]
700	[illegible]	3,035	- 2.5	[illegible]	[illegible]	[illegible]
650	[illegible]	3,625	[illegible]	[illegible]	[illegible]	[illegible]
600	[illegible]	4,244	[illegible]		[illegible]	[illegible]
550	362	[illegible]	-12.9		[illegible]	[illegible]
500	[illegible]	[illegible]	-17.6		270	27.4
450	[illegible]	[illegible]	-22.9			
400	361	7,268	-28.9			
350	361	8,208	[illegible]			
300	361	[illegible]	-43.3			
250	[illegible]	[illegible]	[illegible]			
200	[illegible]	11,901	-55.8			
175	[illegible]	12,746	-57.4			
150	341	13,718	[illegible]			
125	[illegible]	14,860	[illegible]			
100	[illegible]	16,251	-60.4			
80	[illegible]	17,642	-59.6			
60	283	19,448	[illegible]			
50	[illegible]	20,596	[illegible]			
40	[illegible]	[illegible]	[illegible]			
30	[illegible]	23,852	-55.0			

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

RAWINSONDE DATA

Average annual values

NASHVILLE, TENN.
(997 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	177	15.2	73	250	1.0
1,000	366	151				
950	366	590	14.7	58	236	4.1
900	366	1,044	12.2	59	252	6.2
850	366	1,521	9.8	58	264	8.4
800	366	2,023	7.4	53	275	10.5
750	366	2,557	4.8	48	282	12.2
700	366	3,111	1.8	46	286	14.8
650	366	3,710	-1.6	43	286	16.7
600	362	4,338	-5.4		287	18.1
550	362	5,017	-9.5		286	19.8
500	360	5,745	-14.2		288	19.8
450	358	6,545	-19.6		286	21.2
400	358	7,401	-25.7		285	22.0
350	358	8,354	-32.8		284	21.6
300	357	9,420	-40.7			
250	355	10,637	-49.2			
200	349	12,074	-56.4			
175	341	12,916	-58.8			
150	332	13,877	-61.0			
125	313	15,000	-63.3			
100	290	16,363	-64.4			
80	274	17,729	-63.2			
60	256	19,509	-59.9			
50	247	20,653	-58.2			
40	229	22,066	-56.2			
30	199	23,904	-54.0			

NOME, ALASKA
(1011 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	7	-3.7	75	56	1.2
1,000	366	93	-3.6	69	49	.6
950	366	501	-3.9	67	67	1.7
900	366	925	-5.1	65	59	1.9
850	366	1,372	-6.6	62	15	1.4
800	366	1,844	-8.5	58	344	1.2
750	366	2,347	-10.8	54	286	1.6
700	366	2,870	-13.5	51	261	2.7
650	366	3,436	-16.6	47	278	3.9
600	366	4,028	-20.0		282	4.5
550	366	4,671	-23.9		278	5.6
500	365	5,357	-28.3		282	6.6
450	362	6,112	-33.4		276	7.2
400	361	6,921	-38.9		278	8.7
350	361	7,824	-44.7		267	9.3
300	358	8,841	-49.9		262	10.1
250	356	10,023	-52.2		265	11.1
200	354	11,471	-50.1		260	12.2
175	353	12,344	-49.1		254	12.8
150	348	13,354	-48.8		255	13.6
125	343	14,551	-48.8		252	13.6
100	339	16,016	-48.7		255	14.8
80	332	17,483	-48.7		256	14.4
60	320	19,375	-48.9		254	11.5
50	308	20,570	-49.3		252	7.4
40	292	22,030	-49.6			
30						

NORFOLK, VA.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	9	14.4	78	189	0.0
1,000	366	150	14.7	69	222	2.7
950	366	587	13.1	64	254	7.4
900	366	1,037	10.9	63	269	9.9
850	366	1,512	8.5	61	274	11.8
800	366	2,011	6.1	57	276	13.6
750	366	2,544	3.5	52	274	15.5
700	364	3,095	.6	49	272	18.1
650	363	3,691	-2.7	46	271	21.2
600	362	4,317	-5.3		271	24.1
550	356	4,994	-10.2		270	27.2
500	355	5,720	-14.9		270	30.5
450	352	6,516	-20.3		269	34.4
400	349	7,370	-26.3		269	38.1
350	344	8,321	-33.4		269	43.1
300	339	9,386	-41.3		270	47.4
250	333	10,599	-49.5		270	53.0
200	322	12,032	-56.7		270	55.9
175	317	12,874	-59.0		271	53.2
150	305	13,833	-61.1		272	48.2
125	285	14,961	-62.8		272	40.0
100	257	16,329	-63.7		271	29.7
80	232	17,696	-62.5		269	18.5
60	206	19,482	-59.4		266	7.8
50	189	20,629	-57.9		260	3.1
40	172	22,040	-56.4		70	1.7
30	125	23,871	-54.6			

NORTH PLATTE, NEBR.
(917 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	848	9.0	66	88	1.9
1,000	366	116				
950	366	552				
900	366	1,002	11.4	53	88	1.9
850	366	1,479	10.2	47	275	1.4
800	366	1,982	7.9	46	288	6.4
750	366	2,517	5.0	44	292	11.1
700	366	3,072	1.5	43	293	14.0
650	366	3,667	-2.4	43	291	16.9
600	364	4,295	-6.7	44	289	19.0
550	364	4,969	-11.4	44	287	20.6
500	363	5,693	-16.4		288	22.9
450	363	6,484	-22.1		285	24.7
400	363	7,332	-28.5		284	26.6
350	361	8,275	-35.6		283	28.7
300	360	9,328	-43.3		282	30.3
250	356	10,533	-51.0		279	31.5
200	351	11,963	-56.4		277	31.5
175	347	12,809	-57.5		274	30.5
150	344	13,778	-58.5		275	28.9
125	336	14,919	-60.2		275	24.3
100	320	16,304	-61.1			
80	304	17,692	-60.5			
60	283	19,490	-58.2			
50	273	20,640	-57.0			
40	235	22,059	-55.9			
30	153	23,901	-54.2			

OAKLAND, CALIF.
(1017 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	363	6	13.5	72	285	6.0
1,000	363	146	13.5	68	285	6.2
950	363	584	13.6	57	289	6.6
900	363	1,034	13.3	44	293	6.2
850	363	1,513	11.4	38	294	5.2
800	363	2,017	8.8		290	4.7
750	363	2,555	5.9		288	5.4
700	362	3,109	2.6		287	7.2
650	361	3,709	-1.2		284	8.7
600	361	4,338	-5.4		285	11.1
550	361	5,016	-10.0		284	13.6
500	360	5,743	-15.2		283	16.1
450	358	6,538	-21.0		280	18.6
400	357	7,390	-27.5		280	21.8
350	355	8,335	-35.0		280	25.1
300	354	9,392	-43.2		278	28.6
250	353	10,596	-51.7		282	30.7
200	349	12,021	-58.0		273	33.2
175	344	12,860	-58.8		271	32.6
150	342	13,824	-59.9		270	29.7
125	336	14,959	-61.7		270	23.7
100	322	16,334	-63.4		273	16.1
80	304	17,706	-62.7		282	9.5
60	283	19,489	-60.1		349	3.1
50	267	20,631	-58.6		44	4.7
40	248	22,038	-56.7		61	7.4
30	204	23,871	-54.4		69	9.5

OKLAHOMA CITY, OKLA.
(970 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	391	15.7	59	149	3.5
1,000	366	126				
950	366	566	17.5	48	154	5.4
900	366	1,026	15.9	47	187	6.8
850	366	1,510	13.7	46	221	7.6
800	366	2,018	11.0	45	246	9.1
750	366	2,560	7.9	42	262	11.3
700	366	3,119	4.5	40	272	13.2
650	365	3,723	.5		280	15.2
600	365	4,356	3.8		281	15.9
550	365	5,038	-8.3		283	17.7
500	365	5,769	-13.3		284	19.0
450	362	6,571	-18.9		284	21.0
400	362	7,428	-25.2		282	22.7
350	361	8,382	-32.5		284	22.9
300	361	9,450	-40.6		284	23.1
250	361	10,666	-49.2		284	24.7
200	361	12,104	-56.3		283	27.0
175	360	12,947	-58.7			
150	354	13,908	-61.2			
125	344	15,032	-63.9			
100	330	16,393	-65.4			
80	314	17,753	-64.0			
60	292	19,528	-60.5			
50	287	20,669	-58.4			
40	271	22,077	-56.4			
30	212	23,914	-54.3			

OMAHA, NEBR.
(968 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	403	10.3	64	73	1.2
1,000	366	125				
950	366	559	11.4	56	67	.8
900	366	1,007	10.1	54	249	3.1
850	366	1,481	8.1	53	268	6.8
800	366	1,979	5.8	52	280	10.5
750	366	2,511	3.1	49	286	13.6
700	366	3,061	.1	47	287	16.9
650	365	3,656	-3.5	45	287	19.4
600	362	4,279	-7.5	43	288	23.1
550	359	4,953	-12.0	41	288	24.9
500	359	5,673	-17.0		285	26.8
450	352	6,465	-22.5		285	30.5
400	349	7,310	-28.5		284	34.2
350	344	8,252	-35.6		282	38.1
300	339	9,305	-43.2		280	40.6
250	337	10,510	-50.8		279	44.9
200	333	11,942	-56.0		276	45.6
175	330	12,788	-57.2		276	43.7
150	327	13,759	-58.3		277	40.2
125	317	14,901	-60.0		279	35.2
100	304	16,288	-60.9		281	26.2
80	290	17,676	-60.0		286	17.9
60	269	19,479	-58.0		297	10.3
50	251	20,630	-56.7		304	6.8
40	224	22,047	-55.6		357	2.7
30	173	23,883	-54.3			

PHOENIX, ARIZ.
(973 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	341	23.4	30	284	1.6
1,000	366	96				
950	366	548	25.1		285	3.9
900	366	1,018	21.9		279	5.8
850	366	1,510	18.1		269	5.4
800	366	2,024	14.0		256	4.7
750	366	2,569	9.7		240	4.1
700	366	3,133	5.5		242	5.1
650	366	3,739	1.3		248	6.4
600	366	4,373	-3.0		258	8.4
550	365	5,058	-7.7		263	10.9
500	365	5,791	-12.8		268	13.0
450	365	6,595	-18.4		268	15.2
400	365	7,455	-24.8		272	17.3
350	363	8,411	-32.0		273	19.8
300	363	9,481	-40.0		268	21.4
250	363	10,701	-48.7		269	26.0
200	361	12,141	-56.3		263	27.2
175	358	12,983	-59.0		266	25.8
150	354	13,945	-61.7		267	22.3
125	347	15,065	-64.7			
100	330	16,420	-66.6			
80	318	17,771	-65.5			
60	288	19,535	-61.5			
50	275	20,671	-59.3			
40	254	22,076	-56.9			
30						

PITTSBURGH, PA.
(976 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	362	353	9.9	74	252	2.3
1,000	362	145				
950	362	576	9.7	69	245	4.5
900	362	1,021	7.4	69	258	10.5
850	362	1,489	5.1	67	264	14.0
800	362	1,982	2.7	62	269	16.3
750	362	2,509	.4	57	272	18.6
700	362	3,054	-2.3	53	275	22.0
650	361	3,644	-5.5	51	276	24.7
600	358	4,263	-9.1		276	27.4
550	357	4,933	-13.1		275	30.7
500	356	5,650	-17.9		275	33.4
450	354	6,436	-23.4		276	37.7
400	354	7,280	-29.5		273	42.2
350	350	8,220	-36.3		272	45.3
300	348	9,273	-43.7		272	49.0
250	343	10,477	-51.1		271	50.9
200	324	11,910	-56.7		271	52.8
175	306	12,757	-58.3		272	49.5
150	278	13,723	-59.6		272	45.1
125	229	14,853	-60.8		274	37.9
100	163	16,236	-61.5			
80						
60						
50						
40						
30						

PORTLAND, ME.
(1014 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	365	20	5.6	81	292	2.5
1,000	365	132	6.9	69	280	4.1
950	365	557	6.1	62	285	8.0
900	365	995	4.0	62	286	9.5
850	365	1,458	1.9	60	284	11.5
800	365	1,945	-.1	56	277	14.0
750	364	2,466	-2.3	53	274	17.3
700	364	3,006	-5.0	51	272	20.2
650	361	3,590	-8.1	49	270	24.1
600	359	4,204	-11.3		268	27.4
550	358	4,870	-15.0		266	32.1
500	358	5,582	-19.5		266	35.9
450	357	6,362	-24.7		266	39.8
400	356	7,204	-30.6		267	43.7
350	352	8,138	-37.3		266	49.3
300	351	9,185	-44.5		267	54.2
250	347	10,386	-50.9		268	57.5
200	335	11,817	-54.5		268	58.3
175	330	12,667	-55.2		269	55.2
150	326	13,646	-56.0		268	48.4
125	315	14,802	-57.2		267	41.2
100	304	16,207	-58.2		267	33.8
80	277	17,609	-57.9		266	24.9
60	259	19,424	-56.8		262	14.8
50						
40						
30						

RAPID CITY, S. DAK.
(904 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	363	966	7.9	60	7	3.3
1,000	363	119				
950	363	551				
900	363	1,002	8.4	54	3	3.7
850	363	1,476	8.4	49	322	5.4
800	363	1,975	5.5	50	306	8.5
750	363	2,503	2.4	52	296	12.0
700	363	3,054	-1.1	51	290	15.5
650	363	3,644	-4.9	52	289	19.2
600	362	4,266	-9.1	50	286	22.5
550	361	4,934	-13.6	48	286	25.3
500	359	5,651	-18.7	46	285	27.8
450	358	6,435	-24.3		285	30.5
400	356	7,274	-30.6		285	33.4
350	354	8,209	-37.6		284	35.7
300	349	9,254	-45.3		282	38.5
250	338	10,453	-52.6		281	39.8
200	327	11,876	-57.1		279	40.0
175	311	12,720	-57.2		278	38.3
150	278	13,695	-57.5		277	34.8
125	204	14,854	-58.5		282	30.1
100						
80						
60						
50						
40						
30						

ST. CLOUD, MINN.
(978 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	316	4.8	75	319	0.6
1,000	366	127				
950	366	554	6.2	67	292	1.2
900	366	992	5.1	62	272	4.1
850	366	1,458	3.6	57	283	7.6
800	366	1,948	1.6	53	287	10.9
750	366	2,471	-.9	50	289	13.8
700	366	3,014	-3.7	48	290	16.3
650	366	3,600	-7.1	46	289	19.4
600	365	4,216	-10.8	45	287	21.8
550	365	4,880	-14.9	43	286	24.3
500	363	5,595	-19.6	40	285	26.6
450	363	6,375	-25.1		283	27.4
400	363	7,214	-31.2		280	28.6
350	362	8,148	-38.0		278	29.1
300	361	9,192	-45.3		277	31.1
250	358	10,391	-51.8		275	33.8
200	354	11,825	-55.0			
175	345	12,677	-55.1			
150	343	13,659	-55.7			
125	338	14,817	-56.7			
100	333	16,227	-57.6			
80	325	17,636	-57.3			
60	305	19,461	-56.2			
50	278	20,621	-55.7			
40	242	22,043	-55.0			
30	173	23,890	-53.9			

ST. PAUL IS., ALASKA
(1008 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	365	10	0.7	86	31	2.7
1,000	365	72	-.3	82	5	1.2
950	365	487	-1.5	82	35	1.0
900	365	912	-2.6	78	276	1.6
850	365	1,365	-4.0	72	290	2.1
800	365	1,842	-5.8	66	283	3.1
750	365	2,353	-8.1	59	273	4.3
700	365	2,878	-10.7		276	5.1
650	365	3,453	-13.9		280	6.8
600	365	4,049	-17.3	48	275	7.8
550	365	4,701	-21.3	46	273	8.5
500	364	5,392	-25.9		270	9.7
450	363	6,156	-31.0		265	11.3
400	362	6,972	-36.6		261	13.0
350	360	7,884	-42.8		261	14.6
300	359	8,910	-48.3		256	15.2
250	354	10,100	-51.4		251	16.5
200	348	11,547	-50.6		254	16.9
175	341	12,416	-49.7		253	17.7
150	335	13,425	-49.4		253	16.5
125	322	14,615	-49.4		252	14.8
100	310	16,081	-49.4			
80	299	17,544	-49.2			
60	277	19,436	-49.0			
50	261	20,633	-48.8			
40						
30						

SAN ANTONIO, TEX.
(988 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	365	243	21.1	55	136	4.9
1,000	365	134				
950	365	586	20.2	54	133	10.7
900	364	1,045	17.6	56	152	9.3
850	364	1,532	15.1	54	176	6.4
800	364	2,043	12.6	49	217	5.4
750	364	2,587	9.9	41	243	6.4
700	364	3,152	6.7		258	7.4
650	364	3,760	2.9		268	9.3
600	363	4,400	-1.3		275	11.3
550	363	5,085	-5.8		277	13.6
500	362	5,827	-10.9		277	15.2
450	362	6,636	-16.6		278	17.9
400	362	7,502	-23.0		278	19.4
350	360	8,465	-30.2		279	21.2
300	358	9,542	-38.5		280	20.0
250	356	10,770	-47.6			
200	353	12,213	-56.4			
175	347	13,052	-60.2			
150	343	14,004	-64.1			
125	328	15,109	-67.9			
100	306	16,439	-70.2			
80	283	17,765	-69.0			
60	260	19,503	-63.6			
50	251	20,629	-60.5			
40	235	22,026	-57.5			
30	197	23,852	-54.7			

SAN DIEGO, CALIF.
(*1006 MB.)

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	319	124	15.7	75		
1,000	319	129				
950	319	568	15.6			
900	319	1,023	15.5			
850	319	1,506	13.8			
800	319	2,015	11.2			
750	319	2,556	8.3			
700	319	3,117	5.1			
650	317	3,722	1.3			
600	316	4,357	-2.9			
550	316	5,042	-7.5			
500	316	5,775	-12.7			
450	316	6,576	-18.5			
400	313	7,438	-25.1			
350	310	8,393	-32.4			
300	307	9,461	-40.4			
250	303	10,679	-49.2			
200	303	12,115	-56.8			
175	303	12,955	-59.4			
150	294	13,914	-62.0			
125	277	15,033	-65.0			
100	258	16,386	-66.7			
80	241	17,735	-65.5			
60	225	19,498	-62.0			
50	215	20,632	-59.6			
40	195	22,035	-57.2			
30						

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

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* Surface pressure not representative due to combining FWC Naval station with Weather Bureau, June 16, 1956.

RAWINSONDE DATA

Average annual values

YEAR 1956

SAN JUAN, P. R. (1016 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	6	24.0	84	103	5.4
1,000	366	146	24.2	77	97	10.9
950	366	597	21.3	79	91	16.5
900	366	1,062	18.3	79	93	15.3
850	366	1,550	15.4	75	93	14.2
800	366	2,062	13.1	64	91	12.4
750	365	2,606	10.7		92	11.5
700	365	3,175	7.8		90	9.5
650	365	3,788	4.6		90	7.6
600	365	4,431	1.0		88	5.6
550	364	5,125	- 3.1		90	3.7
500	361	5,873	- 7.7		97	1.7
450	361	6,693	-13.3		275	.8
400	360	7,571	-19.6		274	4.9
350	356	8,547	-26.8		270	10.3
300	355	9,640	-35.2		268	15.7
250	353	10,883	-44.9		269	22.0
200	352	12,337	-56.1		270	26.0
175	347	13,174	-62.0		275	24.5
150	343	14,113	-67.8		276	21.4
125	322	15,195	-72.6		280	15.2
100	286	16,492	-75.7		283	4.5
80	251	17,783	-74.3		91	7.2
60	231	19,487	-66.5		89	14.0
50	226	20,600	-62.4		90	18.5
40	212	21,989	-58.2		89	22.9
30	176	23,816	-54.3			

SANTA MARIA, CALIF. (1008 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	74	12.3	75	304	4.5
1,000	366	143	12.7	73	316	4.7
950	366	583	14.2	60	345	6.6
900	366	1,033	15.0		350	7.2
850	366	1,515	13.1		360	6.0
800	366	2,022	10.4		356	4.9
750	366	2,562	7.5		327	5.4
700	366	3,121	4.2		304	7.6
650	366	3,723	.5		292	9.3
600	366	4,357	- 3.6		285	11.1
550	366	5,039	8.3		281	12.6
500	366	5,771	-13.3		280	14.4
450	366	6,572	-19.1		275	15.0
400	366	7,430	-25.7		274	16.7
350	365	8,383	-33.1		277	18.3
300	363	9,448	-41.4		272	20.0
250	363	10,661	-50.0		272	20.8
200	356	12,094	-57.1		267	27.8
175	353	12,935	-58.8		265	27.6
150	349	13,898	-60.4		267	25.6
125	342	15,027	-62.9			
100	335	16,395	-64.5			
80	324	17,758	-63.6			
60	313	19,535	-60.4			
50	303	20,676	-58.4			
40	272	22,085	-56.4			
30	198	23,920	-54.3			

S. STE. MARIE, MICH. (990 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	363	221	3.5	8[illegible]	330	0.6
1,000	363	134				
950	363	555	3.9	68	265	2.1
900	363	990	2.2	67	271	5.2
850	363	1,450	.1	66	280	8.5
800	363	1,934	- 1.9	62	284	11.3
750	363	2,450	- 4.1	56	287	13.8
700	363	2,987	- 6.7	53	287	16.5
650	362	3,567	- 9.7	50	287	19.2
600	361	4,177	-13.2	48	286	22.0
550	356	4,836	-17.1	45	285	24.9
500	349	5,544	-21.7	43	286	27.4
450	344	6,318	-27.0		285	30.7
400	338	7,150	-32.9		286	33.4
350	333	8,076	-39.5		285	37.7
300	317	9,117	-46.3		281	42.9
250	296	10,312	-51.7		280	47.6
200	282	11,747	-54.0		279	46.8
175	267	12,606	-54.1		278	44.3
150	259	13,592	-54.8		280	39.4
125	237	14,755	-56.0		281	31.8
100	210	16,168	-56.7			
80	187	17,581	-56.7			
60						
50						
40						
30						

SEATTLE, WASH. (*1010 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	124	11.7	70		
1,000	366	147	11.1	68		
950	366	576	9.3	66		
900	366	1,020	6.7	66		
850	366	1,488	4.2	65		
800	366	1,979	1.5	64		
750	366	2,502	1.4	60		
700	366	3,043	- 4.5	54		
650	366	3,628	- 7.9	50		
600	364	4,242	-11.6	46		
550	361	4,906	-15.7	44		
500	361	5,616	-20.5	44		
450	360	6,394	-25.9			
400	360	7,230	-32.0			
350	356	8,160	-38.8			
300	351	9,203	-45.9			
250	340	10,397	-52.6			
200	318	11,823	-55.7			
175	302	12,672	-55.3			
150	282	13,653	-55.7			
125	248	14,813	-56.7			
100	221	16,222	-57.1			
80						
60						
50						
40						
30						

SHREVEPORT, LA. (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	352	76	18.3	69	152	2.7
1,000	352	139	18.9	62	145	3.3
950	352	583	17.3	58	174	7.0
900	352	1,039	14.9	58	198	7.0
850	352	1,521	12.6	55	228	6.8
800	352	2,028	10.1	49	249	7.6
750	352	2,566	7.4	45	262	9.3
700	352	3,126	4.2		269	10.7
650	349	3,730	.5		272	12.6
600	347	4,363	3.5		273	15.0
550	346	5,046	7.7		271	16.9
500	343	5,779	-12.5		270	19.1
450	342	6,584	-18.1		268	22.9
400	339	7,445	-24.3		266	26.2
350	337	8,403	-31.6		265	31.7
300	331	9,474	-39.8		263	35.7
250	332	10,694	-48.8		263	42.2
200	312	12,132	-57.0		264	45.5
175	298	12,972	-60.0		264	43.9
150	283	13,925	-63.1		268	37.5
125						
100						
80						
60						
50						
40						
30						

SPOKANE, WASH. (932 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	722	9.7	61	210	3.1
1,000	366	130				
950	366	562				
900	366	1,010	9.1	56	216	6.2
850	366	1,481	6.2	55	236	9.3
800	366	1,976	3.0	56	249	11.1
750	366	2,502	- .5	59	260	12.0
700	366	3,043	- 4.1	58	265	13.4
650	366	3,631	- 7.6	54	267	15.7
600	366	4,243	-11.4	50	268	18.1
550	366	4,907	-15.8	48	270	20.0
500	365	5,616	-20.6	47	271	22.3
450	363	6,394	-26.1	46	272	23.9
400	363	7,229	-32.1		274	26.6
350	363	8,157	-39.0		275	27.8
300	363	9,197	-46.2		280	29.3
250	361	10,389	-52.9		282	30.3
200	360	11,816	-55.6		283	29.7
175	356	12,667	-55.0		282	28.4
150	352	13,651	-55.5		280	25.3
125	349	14,809	-56.5		282	22.1
100	340	16,221	-57.2		283	17.5
80	323	17,632	-56.8		289	12.8
60	306	19,459	-55.8		311	7.2
50	285	20,623	-55.2		335	5.4
40	247	22,051	-54.2		10	5.1
30						

TACUBAYA, MEXICO (774 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	319	2,306	16.8			
1,000	319	56				
950	319	517				
900	319	994				
850	319	1,493				
800	319	2,021				
750	319	2,574	15.0			
700	319	3,152	10.6			
650	319	3,771	5.9			
600	319	4,416	1.1			
550	318	5,111	- 3.3			
500	313	5,859	- 7.6			
450	309	6,680	-12.7			
400	301	7,562	-18.8			
350	292	8,543	-24.1			
300	280	9,641	-34.4			
250	255	10,888	-44.6			
200	234	12,349	-55.7			
175						
150						
125						
100						
80						
60						
50						
40						
30						

TAMPA, FLA. (1018 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	365	7	20.2	80	48	2.1
1,000	365	161	20.8	73	60	2.9
950	365	606	18.7	68	95	2.1
900	365	1,067	16.1	65	145	1.7
850	365	1,551	13.5	60	212	2.1
800	365	2,060	11.1	52	253	3.5
750	365	2,604	8.6		269	5.1
700	365	3,165	5.6		265	6.8
650	365	3,774	2.2		266	8.4
600	364	4,409	- 1.6		269	9.5
550	363	5,098	- 5.7		273	11.7
500	363	5,837	-10.5		273	14.0
450	363	6,650	-16.0		273	15.9
400	362	7,517	22.4		274	16.7
350	360	8,483	-29.8		277	17.5
300	358	9,563	-38.1		276	18.8
250	355	10,793	-47.6		277	23.3
200	348	12,236	-57.1		279	23.3
175	341	13,071	-61.4		276	20.8
150	328	14,018	-65.6			
125	317	15,115	-69.1			
100	301	16,439	-71.1			
80	288	17,761	-69.8			
60	269	19,494	-64.2			
50	261	20,618	-60.9			
40	251	22,015	-57.8			
30	213	23,846	-54.3			

TATOOSH ISLAND, WASH. (1013 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	365	31	8.9	86	188	4.3
1,000	365	141	8.8	79	212	4.3
950	365	567	7.7	71	231	6.0
900	365	1,009	5.7	68	232	7.2
850	365	1,474	3.4	65	238	8.5
800	365	1,964	1.0	60	248	10.3
750	365	2,485	- 1.6	53	251	12.2
700	365	3,027	- 4.6	49	256	14.6
650	362	3,609	- 8.0	47	260	16.9
600	360	4,224	-11.6	45	264	19.8
550	328	4,884	-15.2	44	267	22.9
500	328	5,597	-19.8	43	268	25.8
450	356	6,372	-25.9		267	28.6
400	354	7,210	-31.8		266	30.9
350	350	8,140	-38.5		267	33.0
300	348	9,184	-45.4		268	33.6
250	341	10,379	-51.7		268	32.6
200	335	11,812	-54.8		268	32.1
175	334	12,666	-54.2		267	28.2
150	326	13,656	-54.3		268	25.8
125	318	14,822	-55.2		272	21.2
100	312	16,242	-56.0		275	16.9
80	300	17,661	-55.7		280	12.2
60	287	19,495	-54.8		297	6.6
50	279	20,661	-54.3		323	4.1
40	257	22,094	-53.7		1	5.1
30	211	23,943	-52.9			

TOPEKA, KANS. (984 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	270	13.2	61	151	1.2
1,000	366	132				
950	366	568	13.7	52	174	3.1
900	366	1,020	11.8	51	212	6.2
850	366	1,497	9.7	51	242	8.7
800	366	1,998	7.5	48	260	11.7
750	366	2,533	4.7	46	272	14.0
700	366	3,087	1.5	45	281	16.5
650	366	3,683	2.3	42	283	18.8
600	364	4,310	- 6.4		284	21.4
550	362	4,985	-10.9		286	23.3
500	361	5,710	-15.8		284	26.2
450	359	6,503	-21.2		282	29.1
400	356	7,353	-27.4		281	32.6
350	349	8,299	-34.5		279	35.9
300	345	9,358	-42.3		278	40.8
250	340	10,566	-50.4		277	43.3
200	334	11,997	-56.5		273	45.1
175	328	12,838	-58.2		274	43.9
150	329	13,803	-59.9		276	41.0
125	315	14,936	-61.6		276	35.2
100	299	16,311	-62.8		279	27.0
80	283	17,685	-61.8		283	17.3
60	262	19,476	-59.2		291	8.5
50	246	20,622	-57.8		310	4.7
40	218	22,032	-56.2		10	2.1
30	157	23,871	-54.4			

VERA CRUZ, MEXICO (1012 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	334	13	25.7	78		
1,000	334	118	24.9	78		
950	334	565	22.1	74		
900	334	1,036	19.5	68		
850	334	1,526	16.7	65		
800	334	2,040	13.8	63		
750	334	2,593	11.0	57		
700	334	3,155	8.1	50		
650	329	3,771	4.7			
600	323	4,413	1.0			
550	320	5,112	- 3.0			
500	315	5,857	- 7.5			
450	309	6,687	-12.7			
400	303	7,560	-18.7			
350	286	8,540	-25.9			
300	276	9,637	-34.4			
250	256	10,885	-44.1			
200	235	12,343	-55.3			
175	207	13,184	-61.1			
150	168	14,129	-67.0			
125						
100						
80						
60						
50						
40						
30						

WASHINGTON, D. C. (1007 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	366	88	12.1	71	251	1.0
1,000	366	147	12.5	66	224	1.2
950	366	580	11.4	63	265	6.8
900	366	1,028	9.1	64	273	10.3
850	366	1,500	6.9	63	278	13.0
800	366	1,996	4.5	61	279	14.8
750	366	2,527	2.1	56	277	16.7
700	366	3,074	- .7	51	278	18.3
650	365	3,668	3.9	48	277	21.0
600	364	4,290	- 7.4	44	277	23.7
550	364	4,965	-11.4		278	25.6
500	363	5,687	-16.1		276	28.0
450	363	6,480	-21.5		277	30.9
400	363	7,331	-27.4		278	33.4
350	362	8,277	-34.4		276	35.5
300	362	9,337	-42.1		275	40.0
250	362	10,547	-50.0		275	39.6
200	357	11,982	-56.3		276	42.2
175	357	12,825	-58.4		277	41.2
150	353	13,790	-59.9			
125	334	14,920	-61.3			
100	318	16,299	-62.0			
80	304	17,679	-61.2			
60	288	19,471	-59.0			
50	277	20,618	-57.6			
40	261	22,032	-56.1			
30	224	23,868	-54.5			

YAKUTAT, ALASKA (1009 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	364	12	4.4	82	122	3.7
1,000	364	84	4.4		128	3.5
950	364	504	2.6	75	129	7.4
900	364	937	.1	69	144	7.4
850	364	1,393	- 2.4	74	156	7.0
800	364	1,872	- 5.0	71	170	6.2
750	364	2,383	- 7.8	67	187	5.4
700	364	2,910	-10.9	62	210	5.8
650	364	3,482	-14.3	58	220	6.6
600	362	4,078	-18.0	51	232	8.4
550	361	4,727	-22.1	50	242	9.7
500	358	5,418	-26.7	47	248	11.7
450	358	6,180	-31.7		253	13.8
400	358	6,995	-37.3		255	15.0
350	358	7,904	-43.5		255	14.2
300	357	8,928	-48.7		264	14.0
250	344	10,119	-51.2		268	14.2
200	330	11,565	-50.2		281	14.2
175	319	12,440	-49.7		277	14.0
150	305	13,447	-49.8		282	14.6
125	280	14,632	-49.8		279	13.0
100	260	16,087	-49.7			
80	244	17,547	-49.7			
60						
50						
40						
30						

YUMA, ARIZ. (999 MB.)

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	349	105	25.8	23	268	2.9
1,000	349	96				
950	349	547	23.9		274	4.9
900	349	1,015	20.4		289	3.9
850	349	1,504	16.7		287	3.7
800	349	2,017	13.0		286	3.7
750	349	2,559	9.3		280	4.7
700	349	3,123	5.6		275	5.6
650	347	3,727	1.6		266	6.8
600	347	4,365	- 2.7		269	8.7
550	344	5,048	- 7.4		268	10.7
500	342	5,784	-12.6		270	14.0
450	338	6,584	-18.4		266	16.5
400	332	7,449	-24.9		271	20.2
350	322	8,404	-32.3		264	24.3
300	315	9,471	-40.4		267	29.7
250	304	10,691	-49.1		265	35.0
200	273	12,126	-57.0		265	40.6
175	250	12,964	-59.6		259	40.4
150	221	13,921	-62.1		267	36.9
125	178	15,039	-64.9			

* Surface pressure not representative due to combining of FWC Seattle Naval station and Weather Bureau, June 29, 1956

Note: All observations scheduled at 0300, G.C.T. except at Mazatlan, Merida and Veracruz, where they are taken near 0200, G.C.T. "Number of observations" refers to those of dynamic height only. Temperature, humidity or wind data may be missing for one or more pressure surfaces of some observations. The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces having less than 16 actual observations.

Relative humidity data beginning with October 1, 1948, were computed and expressed in these tables on the basis of vapor-pressure over water. Upper air values of relative humidity at levels with temperatures less than 0°C, have formerly been computed and expressed on the basis of the vapor pressure over ice. All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the value occurring below the operating range of the humidity element.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots. The resultant of wind speed are biased toward lower wind speeds as the number of observations on which the resultant is based lessen. See note following Table 22 in the January 1950 issue of Climatological Data, National Summary.

SOLAR RADIATION DATA

Average daily values (direct and diffuse) received
on a horizontal surface, tabulated in langleys

YEAR 1956

Station	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Aklavik, MacKenzie	4	54	181	420	475	516	461	267	180	60	8	---	---
Albrook Air Base, Panama, C.Z.	---	---	---	---	---	231	---	---	---	---	---	---	---
Albuquerque, N. M.	359	405	586	675	745	733	717	672	626	468	367	306	555
Ames, Iowa	154	250	318	410	462	561	466	417	444	291	175	142	341
Annette, Alaska	55	122	235	347	444	338	411	300	280	128	50	31	228
Apalachicola, Fla.	329	389	492	541	634	513	549	560	497	424	387	299	468
Astoria, Ore.	88	160	279	473	578	479	592	495	390	214	114	88	329
Atlanta, Ga.	240	248	416	519	544	576	---	---	---	291	305	238	---
Barrow, Alaska*	2	39	192	405	523	534	461	267	137	46	5	---	---
Bethel, Alaska	50	99	---	471	457	505	371	259	203	102	63	25	---
Bismarck, N. Dak.	170	273	---	508	514	649	564	515	396	301	150	111	---
Blue Hill, Mass.	123	209	286	402	474	530	479	453	336	309	184	122	326
Boise, Idaho	121	231	372	507	550	621	653	552	479	265	200	128	390
Boston, Mass.	110	196	289	398	476	522	462	439	323	295	159	99	314
Brownsville, Tex.	325	303	---	366	636	683	---	531	486	457	300	---	---
Canton Island, Pacific Area	658	643	641	604	558	551	554	595	652	636	613	636	612
Caribou, Me.	106	272	409	403	463	447	500	466	338	258	133	101	325
Charleston, S. C.	248	315	421	516	544	545	516	515	451	292	321	270	413
Cleveland, Ohio	123	190	393	420	559	598	577	526	447	345	164	104	371
Columbia, Mo.	157	224	410	456	510	612	617	528	506	333	194	135	390
Columbus, Ohio	141	151	307	365	425	521	490	185	118	80	60	43	241
Davis, Calif.	114	294	449	485	613	726	684	634	505	335	---	183	---
Dodge City, Kans.	242	374	512	592	550	713	641	615	587	428	301	248	484
East Lansing, Mich.	135	253	308	361	474	585	494	439	406	316	149	88	334
East Wareham, Mass.	146	250	319	447	477	521	457	453	364	315	185	---	---
Edmonton, Alberta	95	204	345	506	664	---	---	436	280	192	100	56	---
El Paso, Tex.	319	437	579	663	756	728	670	658	597	500	381	312	550
Ely, Nev.	211	381	521	545	618	764	671	658	536	371	317	223	485
Fairbanks, Alaska	18	73	210	416	443	535	501	301	194	80	31	8	234
Ft. Huachuca, Ariz.	---	---	---	---	---	681	617	---	---	---	---	---	---
Ft. Worth, Tex.	248	309	435	506	578	661	628	614	550	379	330	255	458
Fresno, Calif.	178	363	538	523	619	744	691	---	516	355	283	200	---
Gainesville, Fla.	294	---	550	573	655	---	---	---	---	---	---	---	---
Glasgow, Mont.	152	239	373	476	521	689	579	487	437	---	150	111	---
Grandby, Colo.	248	344	507	505	546	681	581	498	---	310	256	215	---
Grand Junction, Colo.	223	360	529	523	568	---	665	---	---	310	263	222	---
Great Falls	167	260	375	459	525	662	648	499	434	268	187	129	384
Greensboro, N. C.	175	172	327	459	536	539	540	488	384	279	225	168	358
Griffin, Ga.	266	264	438	538	610	606	572	588	493	333	333	270	443
Hatteras, N. C.	213	357	434	628	672	600	656	---	488	304	316	256	---
Indianapolis, Ind.	162	200	351	377	531	579	503	492	450	303	187	98	353
Inyokern, Calif.	290	478	618	709	810	847	771	768	653	505	409	330	599
Ithaca, N. Y.	112	175	318	363	451	588	466	453	349	278	146	66	314
Lake Charles, La.	289	311	396	475	586	575	584	520	525	474	394	245	448
Lander, Wyo.	---	---	---	518	599	752	652	563	536	362	234	216	---
Las Vegas, Nev.	257	416	550	658	733	786	693	700	577	465	352	294	540
Lemont, Ill.	170	244	330	393	511	605	509	508	---	---	---	---	---
Little Rock, Ark.	186	197	355	417	503	516	523	464	---	344	221	149	---
Los Angeles, Calif. (U)	214	337	508	423	485	636	650	564	553	357	337	274	445
Los Angeles, Calif.	214	356	499	462	509	620	648	551	538	362	336	265	447
Madison, Wis.	159	259	340	403	439	589	498	458	388	289	111	73	338
Matanuska, Alaska	37	93	243	398	411	443	440	352	239	109	49	18	236
Medford, Ore.	117	204	374	481	525	629	644	585	446	255	138	75	373
Miami, Fla.	366	434	544	559	586	524	557	518	406	417	398	355	472
Midland, Tex.	292	353	538	534	661	680	654	608	557	412	335	270	491
Nashville, Tenn.	163	196	382	468	534	573	578	---	484	320	217	136	---
Newport, R. I.	143	223	328	448	510	567	503	492	366	335	190	126	353
New York, N. Y.	143	197	307	405	514	520	458	447	344	276	163	105	323
Oak Ridge, Tenn.	169	222	419	539	553	587	536	565	479	321	---	140	---
Oklahoma City, Okla.	234	301	471	534	557	629	601	624	542	398	302	220	451
Ottawa, Ontario	148	253	389	395	510	512	519	459	344	287	135	109	338
Phoenix, Ariz.	290	425	572	634	737	741	656	657	563	457	357	299	532
Portland, Me.	122	229	---	439	505	523	515	473	361	331	180	112	---
Prosser 4 NE, Wash.	122	261	355	578	624	711	740	608	466	248	120	80	409
Rapid City, S. Dak.	205	301	455	527	520	700	644	538	485	363	223	164	427
Resolute Bay, N.W.T. †	---	26	163	366	646	739	464	265	143	34	2	---	---
Richland, Wash.	---	---	---	526	---	---	---	---	---	---	---	---	---
Riverside, Calif.	244	384	530	499	622	707	671	621	577	405	368	309	495
St. Cloud, Minn.	186	300	345	433	496	552	549	520	418	289	150	109	362
San Antonio, Tex.	281	357	473	456	584	---	663	610	536	424	333	288	---
Santa Maria, Calif.	218	358	574	554	578	739	660	633	576	408	353	283	495
Sault Ste. Marie, Mich.	155	231	394	411	514	568	578	489	345	333	80	82	348
Sayville, N. Y.	169	265	335	436	554	591	484	492	382	329	194	115	362
Schenectady, N. Y.	120	183	293	329	381	433	394	445	283	240	130	90	277
Seabrook, N. J.	159	208	292	409	504	509	463	469	360	---	198	111	---
Seattle, Wash. (U of W.)	76	101	223	424	517	406	564	455	---	---	---	---	---
Seattle-Tacoma, Wash.	85	114	240	466	527	450	572	465	307	157	107	62	296
Spokane, Wash.	105	358	337	494	553	430	690	533	407	194	127	72	358
State College, Pa.	144	214	332	414	497	620	449	459	374	297	179	102	340
Stillwater, Okla.	212	298	453	500	528	---	645	611	587	412	322	221	---
Tallahassee, Fla.	300	292	457	481	562	486	555	548	439	360	371	---	---
Tampa, Fla.	351	400	556	547	602	571	557	537	455	365	395	325	472
Toronto, Ontario	146	191	290	331	461	459	464	385	346	275	136	86	298
Tucson, Ariz. (U)	298	420	567	657	737	724	616	608	613	437	396	319	533
Upton, N. Y.	153	231	343	508	546	593	497	498	384	319	196	160	369
Wake Island, Pacific Area	478	529	594	639	618	622	573	640	601	523	439	436	558
Washington, D. C.	161	245	312	441	508	562	487	477	392	265	184	131	347
Winnipeg, Manitoba	135	246	377	522	530	580	526	470	338	205	106	93	344
DELAYED DATA													
Ames, Iowa 1953	---	---	---	---	---	---	---	---	---	286	205	168	---
1954	169	264	‡330	403	528	549	510	418	348	222	196	142	340
1955	185	233	366	446	516	532	609	534	413	290	177	136	370

Note: Langley is the unit used to denote one gram calorie per square centimeter.

* Sun below horizon before Jan. 24th and after Nov. 18.

† Sun below horizon before Feb. 6 and after Nov. 4.

‡ Ice storm on 12th - globe covered with ice.

ATMOSPHERIC OZONE

Total atmospheric ozone in centimeters as measured with Dobson ozone spectrophotometers.

YEAR 1956

	Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)		Bismarck, N. Dak.	Washington, D. C. (Urban)
1956 Jan.			Feb.			Mar.			Apr.			May			June			July			Aug.			Sep.			Oct.			Nov.			Dec.		
1	----	----		0.28	----		0.29	----		----	0.29		----	0.26		0.25	----		0.26	----		0.25	0.24		----	----		0.22	----		----	----		----	----
2	0.20	----		.27	----		.29	----		----	.27		----	----		.25	----		----	0.25		----	----		----	----		.21	----		----	----		----	----
3	.21	.22		.20	----		.28	----		.28	.24		.30	----		.28	----		.26	----		.22	.24		.24	----		.23	----		.22	----		----	----
4	.20	.23		.24	----		.28	----		----	.20		----	.24		.25	----		.27	----		.24	----		----	----		.21	----		.23	----		----	----
5	.19	.25		.22	----		.31	----		.28	.22		----	.27		----	----		.28	----		.24	----		.26	----		.21	----		----	----		----	----
6	.20	.26		----	.19		.31	----		.31	----		.27	.27		.26	----		.26	----		.25	----		.24	----		.21	----		----	----		----	----
7	.21	----		----	.19		.33	----		.31	----		.27	----		.25	----		.28	----		.26	----		.22	----		.20	----		.21	----		----	----
8	.22	----		.25	----		.27	----		----	----		.25	.27		.25	----		.28	----		.27	.22		.20	----		.21	----		.21	----		----	----
9	.19	----		----	----		.26	----		.29	.30		.27	.25		.26	----		.26	----		.26	----		.24	----		.21	----		.20	----		----	----
10	.18	----		----	----		----	----		.25	.30		----	----		.25	----		.25	----		.25	----		.23	----		.21	----		.20	----		----	----
11	----	----		.28	.24		.32	----		.24	----		.28	----		----	----		.25	.23		.26	----		.22	----		.18	----		----	----		----	----
12	.18	----		----	.23		.24	----		.27	.29		.29	.17		.24	.24		.25	.26		.26	----		.22	----		.19	----		.18	----		----	----
13	.17	----		.26	.21		.28	----		.28	.32		.25	.20		.24	----		.25	----		.25	----		.23	----		.22	----		.15	----		----	----
14	----	----		.27	.20		.30	----		.28	.28		.28	----		.25	----		.24	----		.24	----		----	----		.21	----		----	----		----	----
15	----	----		----	----		.28	----		.28	----		.28	----		.24	----		.28	----		.24	.24		.22	----		.20	----		.22	----		----	----
16	.15	----		----	----		.24	----		.31	.27		.26	----		.28	----		.26	.23		.24	.24		.23	----		.20	----		.26	----		----	----
17	.19	.29		.26	----		----	----		.28	.26		.26	----		.26	----		.25	----		.23	.17		.22	----		.21	----		.24	----		----	----
18	.21	.23		.27	.16		.22	----		.30	.23		.29	.23		.25	----		.25	----		.23	----		.22	----		.20	----		----	----		----	----
19	----	----		.30	----		.23	----		.29	.24		.28	.23		.24	----		.25	----		.25	----		.21	.19		.21	----		.19	----		----	----
20	.24	.25		.32	.21		.26	----		.29	.27		.27	.24		.25	----		.27	----		.23	----		.20	.19		.20	----		.22	----		----	----
21	.24	----		----	.21		.29	----		.29	.39		.25	.25		.26	----		.25	----		.23	----		.23	----		.19	----		.18	----		----	----
22	.28	----		----	.22		----	----		.30	.31		.26	----		----	----		.23	----		.23	.26		.25	----		.21	----		----	----		----	----
23	----	.24		----	----		----	----		.32	.30		.26	----		----	----		.20	.24		.22	.24		.24	----		.19	----		.23	----		----	----
24	----	.23		.32	.20		.25	----		.30	----		.19	----		.25	----		.24	----		.24	----		.22	----		.21	----		.21	----		----	----
25	.24	.25		.26	.20		.26	----		.30	.30		----	----		.26	----		.25	.23		.23	----		.22	.21		.22	----		.22	----		----	----
26	----	.24		.26	.21		.27	----		.30	.28		.25	.26		.28	.24		.26	.24		.23	----		.22	----		.22	----		.21	----		----	----
27	----	.28		.27	.18		----	----		.29	.28		.25	----		.26	----		.25	----		.24	.26		.21	----		.22	----		.21	----		----	----
28	.28	----		.26	----		----	----		.31	.24		----	.23		.24	.23		----	----		.25	.24		----	----		.20	----		.24	----		----	----
29	----	----		.26	----		.28	----		----	.24		.24	.26		.24	----		.23	----		.23	----		----	----		----	----		----	----		----	----
30	.29	----		----	----		.28	0.28		.30	.24		.28	----		.26	----		----	----		----	----		.22	----		.20	----		.19	----		----	----
31	.28	----		----	----		.28	.29		----	----		.25	----		----	----		.24	----		----	----		----	----		.20	----		----	----		----	----
Average	.38	----		.27	.20		.28	----		.29	.27		.26	.24		.25	----		.26	----		.24	----		.23	----		.21	----		.21	----		----	----

ILLUMINATION DATA

Daily illumination on a horizontal surface, tabulated in hundreds of foot-candle hours. YEAR 1956

Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average
Washington, D. C. (WBCO)																																
Jan.	---	---	---	140	208	164	51	206	46	23	39	(83)	---	---	273	101	265	253	---	---	---	---	---	---	---	---	---	---	---	---	(237)	---
Feb.	269	58	85	37	314	31	378	357	---	350	40	173	212	259	150	369	51	325	253	345	251	425	394	161	125	484	356	451	397			---
Mar.	426	228	348	504	---	262	258	181	543	443	263	66	50	114	233	53	530	66	477	608	614	---	522	140	622	103	516	218	63	501	396	---
Apr.	594	---	240	447	645	159	78	---	---	583	221	693	544	591	148	282	387	323	624	519	708	508	726	71	627	479	567	(703)	---	---		---
May	664	120	316	533	773	657	113	787	---	381	---	---	---	---	---	---	403	833	785	838	745	489	---	---	671	735	127	716	851	593	709	---
June	342	172	538	---	---	---	---	---	---	---	---	---	---	726	752	591	---	233	814	169	210	770	803	882	873	737	---	---	912	799		---
July	843	746	739	---	---	331	---	---	---	465	820	809	414	783	---	---	380	435	588	115	729	629	551	299	639	726	753	617	334	770	660	---
Aug.	604	203	629	277	276	244	---	---	---	---	597	636	430	478	658	683	712	663	556	225	171	448	529	598	591	423	---	---	---	---	478	---
Sept.	(574)	(409)	---	---	459	519	413	1036	929	---	---	---	831	729	407	644	---	---	---	---	864	292	804	---	---	408	111	171	203	653		---
Oct.	801	---	---	---	---	---	---	---	709	724	695	---	514	424	407	328	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nov.	---	---	---	---	---	304	262	117	---	92	277	156	244	285	299	90	35	273	248	159	122	---	169	162	83	77	196	229	113	218		---
Dec.	165	88	189	230	127	179	145	144	23	219	83	142	89	22	28	---	---	---	218	168	88	38	24	86	189	105	130	82	92	266	169	---

The foot-candle hour is the average illumination for one hour, in foot-candles Foot-candle hours for a day are obtained by summing the foot-candle hours for the individual hour. of that day The illumination values are compiled from continuous records of the illumination output of a Foster illuminometer. For a description of this instrument see "A recording Daylight Illuminometer", by Norman B. Foster, in Illuminating Engineering, Vol XLVI No. 2, pages 59 to 62.

* Data not available for publication in monthly issues

NWRC, Asheville, N. C. --- 7/1/57 --- 2500

Chart I. Departure from Normal of Annual Average Temperature (°F.) at Surface, 1956.

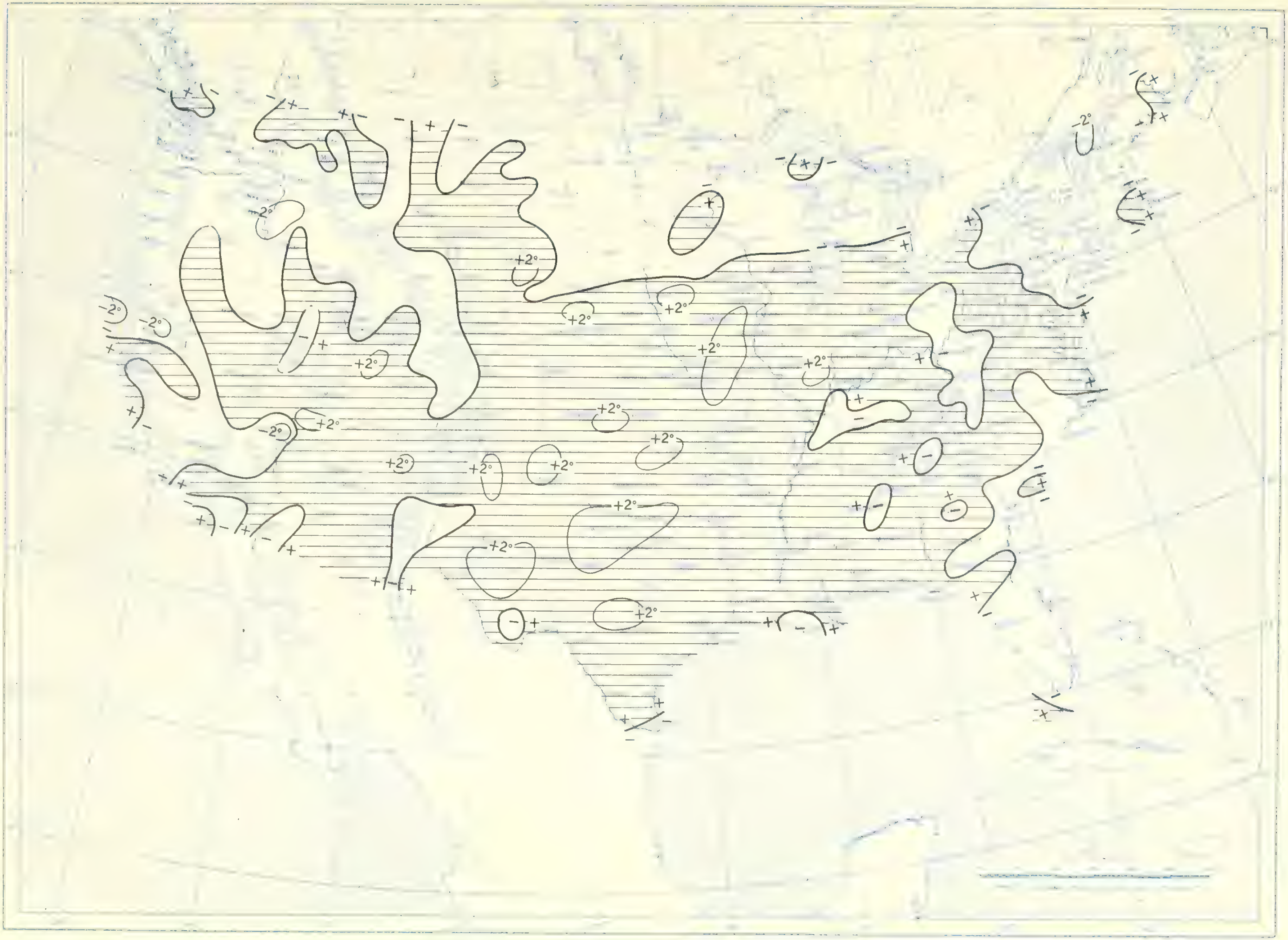

Chart II. Percentage of Normal Annual Precipitation, 1956.

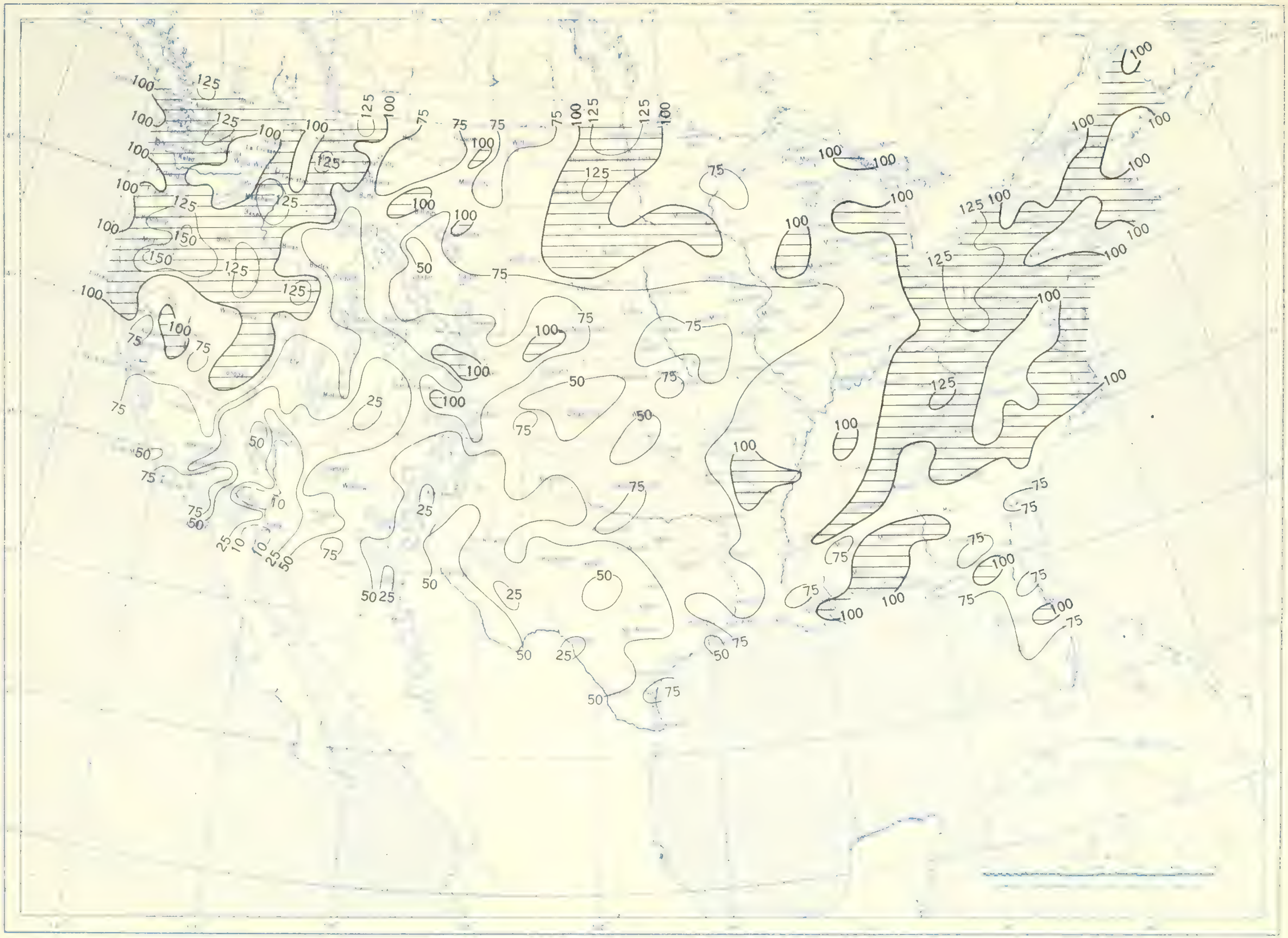

Chart III. Tracks of Tornadoes, 1956.